UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-K

☒ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the Fiscal Year Ended: December 31, 2010

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from _____ to _____.

Commission File Number 333-119366

NOVELOS THERAPEUTICS, INC.

(*Exact name of Registrant as specified in its Charter*)

Delaware	**04-3321804**
(*State or other jurisdiction of incorporation or organization*)	(*I.R.S. Employer Identification No.*)

One Gateway Center, Suite 504
Newton, Massachusetts 02458
(*Address of principal executive offices and zip code*)

Registrant's telephone number: (**617) 244-1616**

Securities registered pursuant to Section 12(b) of the Act:

Title of Class	**Name of each exchange on which registered**
None	Not Applicable

Securities Registered pursuant to Section 12(g) of the Act:

None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☐ No ☒

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Exchange Act. Yes ☐ No ☒

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days.

Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes ☐ No ☐

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. ☒

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer," and "smaller reporting company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer	☐	Accelerated filer	☐
Non-accelerated filer	☐	Smaller reporting company	☒

(Do not check if a smaller reporting company)

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act).
Yes ☐ No ☒

The aggregate market value of the voting and non-voting common equity held by non-affiliates computed by reference to the price at which the common equity was last sold, or the average bid and asked price of such common equity, as of June 30, 2010 was $7,870,096.

As of April 11, 2011 there were 26,808,047 shares of the registrant’s common stock outstanding.

NOVELOS THERAPEUTICS, INC.

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This annual report on Form 10-K contains forward-looking statements, which involve risks and uncertainties, such as our plans, objectives, expectations and intentions. You can identify these statements by our use of words such as "may," "expect," "believe," "anticipate," "intend," "could," "estimate," "continue," "plans," or their negatives or cognates. Some of these statements include discussions regarding our future business strategy and our ability to generate revenue, income and cash flow. We wish to caution the reader that all forward-looking statements contained in this annual report on Form 10-K are only estimates and predictions. Our actual results could differ materially from those anticipated as a result of risks facing us or actual events differing from the assumptions underlying such forward-looking statements. Readers are cautioned not to place undue reliance on any forward-looking statements contained in this annual report on Form 10-K. We will not update these forward-looking statements unless the securities laws and regulations require us to do so.

This annual report on Form 10-K contains trademarks and service marks of Novelos Therapeutics, Inc. Unless otherwise provided in this annual report on Form 10-K, trademarks identified by ™ are trademarks of Novelos Therapeutics, Inc. All other trademarks are the properties of their respective owners.

PART I

Item 1. Business

Business Combination with Cellectar

On April 8, 2011, Novelos Therapeutics, Inc. ("we, the "Company", "Novelos") completed a business combination with Cellectar, Inc. ("Cellectar"), a privately held Wisconsin corporation that designed and developed products to detect, treat and monitor a wide variety of human cancers (the "Acquisition"). Immediately prior to the Acquisition, we completed a 1-for-153 reverse split of our common stock (the "Reverse Split"). We then issued 17,001,596 shares of our common stock to the former shareholders of Cellectar as consideration for the Acquisition, constituting approximately 85% of our outstanding common stock after giving effect to the Acquisition. Upon the closing of the Acquisition, we completed the private placement of 6,846,537 shares of our common stock and warrants to purchase an additional 6,846,537 shares of our common stock (in each case after giving effect to the Reverse Split). As a result of the Acquisition, we are implementing a revised business plan focused on the development of the Cellectar compounds. The Company will conduct its operations from Cellectar's headquarters in Madison, WI and the Company's executive offices will remain in Newton, MA.

The historical financial information in this annual report does not give pro forma effect to the Acquisition. However, this annual report contains information related to the business, technology and products of Cellectar and contains forward-looking statements related to the combined businesses of Novelos and Cellectar following the Acquisition.

Corporate History

We were incorporated in June 1996 as AVAM International, Inc. In October 1998, Novelos Therapeutics, Inc., a newly incorporated entity, merged into AVAM, and the name of AVAM was changed to Novelos Therapeutics, Inc. In 2005, we completed a two-step reverse merger with Common Horizons, Inc., and its wholly-owned subsidiary Nove Acquisition, Inc. Following the merger, the surviving corporation was Novelos Therapeutics, Inc. On April 8, 2011, we completed the Acquisition.

Overview – Technology and Development Strategy

Prior to the Acquisition, we had been developing oxidized glutathione-based compounds for the treatment of cancer, including NOV-002, an injectable small-molecule compound based on a proprietary formulation of oxidized glutathione that we had been developing for use in combination with standard of care chemotherapies for the treatment of solid tumors, and NOV-205, a hepatoprotective agent with immunomodulating and anti-inflammatory properties. Following the Acquisition, development of NOV-002 and NOV-205 has been suspended.

As a result of the Acquisition, we are now developing novel drugs for the treatment and diagnosis of cancer based on the cancer-targeting technologies of Cellectar: CLR1401 ("COLD"), ^{131}I-CLR1404 ("HOT", a radiolabeled compound) and ^{124}I-CLR1404 ("LIGHT", labeled with a shorter-lived radioisotope, iodine-124).

Technology Overview – Our Compounds

Post Acquisition: Cellectar Compounds

CLR1401 ("COLD") is a cancer-targeted chemotherapy that inhibits the phosphatidylinosotol 3-kinase (PI3K)/Akt survival pathway, which is overexpressed in many types of cancer. As a result, COLD selectively inhibits Akt activity, induces caspase-mediated apoptosis and inhibits cell proliferation in cancer cells versus normal cells. COLD also exhibits significant *in vivo* efficacy in mouse xenograft tumor models, including non-small cell lung cancer and triple-negative breast cancers, producing long-lasting tumor growth suppression and significantly increased survival. We believe COLD has the potential to be best-in-class versus other Akt inhibitors in development due to a) cancer cell/cancer stem cell targeting, resulting in cancer-selective inhibition of Akt and cell proliferation or b) suitability for intravenous administration which offers the prospect of greater systemic exposure and superior efficacy. We expect to submit an Investigational New Drug ("IND") application to the Food and Drug Administration ("FDA") in late 2012.

^{131}I-CLR1404 (“HOT”, a radiolabeled compound) is a small-molecule, broad-spectrum, cancer-targeted radiopharmaceutical that we believe has first-in-class potential. HOT is comprised of a small quantity of COLD, acting as a cancer-targeted delivery and retention vehicle, and incorporating a cytotoxic dose of radiotherapy (in the form of iodine-131, a radioisotope that is already in common use to treat thyroid and other cancer types). It is this “intracellular radiation” mechanism of cancer cell killing that imbues HOT with broad-spectrum anti-cancer activity. In 2009, we opened an IND with the FDA to study HOT in humans. In early 2010, we successfully completed a Phase 1a dosimetry trial in humans demonstrating initial safety and establishing dosing parameters for a Phase 1b dose-escalation trial. The Phase 1b dose-escalation trial is aimed at determining the Maximum Tolerated Dose, and we expect it to begin in the third quarter of 2011. In parallel, we expect to initiate Phase 2 efficacy trials in solid tumors in 2012 as soon as a minimal efficacious dose is established. We may determine such an effective dose upon seeing a response in the Phase 1b trial or calculating it from imaging trials in patients (see LIGHT below). Preclinical experiments *in vitro* (in cell culture) and *in vivo* (in animals) have demonstrated selective killing of cancer cells along with a benign safety profile. HOT’s anti-tumor/survival-prolonging activities have been demonstrated in ten different xenograft models (human tumor cells implanted into animals) including breast, prostate, lung, glioma (brain), pancreatic, melanoma, ovarian, uterine, renal and colorectal cancers. In all but one model, a single administration of HOT was sufficient for efficacy. In view of HOT’s selective uptake and retention in a wide range of solid tumors and its non-specific mechanism of cancer-killing (radiation), we expect to first develop HOT as a monotherapy, initially for solid tumors.

^{124}I-CLR1404 (“LIGHT”, labeled with a shorter-lived radioisotope, iodine-124) is a small-molecule imaging agent that we believe has first-in-class potential in detecting and quantifying cancerous tumors and metastases. LIGHT is comprised of a small quantity of COLD, acting as a cancer-targeted delivery and retention vehicle, and incorporating ^{124}I, a new positron emission tomography (PET) imaging isotope. PET imaging used in conjunction with CT scanning has now become the imaging method of choice in oncology. In studies to date, LIGHT selectively illuminated malignant tumors in 52 of 54 animal models of cancer, demonstrating evidence of broad-spectrum, cancer-selective uptake and retention. We expect investigator-sponsored Phase 1/2 trials of LIGHT as a PET imaging agent to begin in mid-2011, and that the trials will initially include glioma, lung and breast cancers. These human trials, if successful, will serve two important purposes. The first purpose is to provide proof-of-concept for LIGHT itself as a PET imaging agent. We believe LIGHT has the potential to supplant the current “gold standard” agent, 18-fluoro-deoxyglucose (FDG), due to what we believe to be LIGHT’s superior cancer-specificity and more favorable logistics of clinical use. The second purpose is to accelerate clinical development of HOT by enabling estimation of efficacious doses of HOT for Phase 2 trials.

We believe these compounds are selectively taken up and retained in cancer cells (including cancer stem cells) versus normal cells. We believe our compounds directly kill cancer cells while minimizing harm to normal cells, offering the potential for a paradigm shift in cancer therapy – efficacy versus all three major drivers of mortality in cancer: primary tumors, metastases and stem cell-based relapse.

More specifically, we believe our technology enables targeted delivery to cancer cells of apoptosis-inducing Akt inhibition or, when a radioactive molecule is attached, of radiation sufficient to kill cancer cells. Other labeled variations of our compounds provide imaging agents for an accurate diagnosis of cancer, including metastases, and can also objectively measure therapeutic success. Together, this platform is capable of yielding multiple, distinct oncology product opportunities which enable us to “find, treat and follow” cancer anywhere in the body in a novel, highly selective way.

Pre-Acquisition: Novelos Pipeline Compounds

From November 2006 through January 2010, we conducted a Phase 3 trial of NOV-002 plus first-line chemotherapy in advanced non-small cell lung cancer ("NSCLC") following three Phase 2 trials (two conducted in Russia and one conducted by us in the U.S.) that had demonstrated clinical activity and safety. The Phase 3 trial enrolled 903 patients, 452 of whom received NOV-002. In February 2010, we announced that the primary endpoint of improvement in overall survival compared to first-line chemotherapy alone was not met in this pivotal Phase 3 trial. Following evaluation of the detailed trial data, we announced in March 2010 that the secondary endpoints also were not met in the trial and that adding NOV-002 to paclitaxel and carboplatin chemotherapy was not statistically or meaningfully different in terms of efficacy-related endpoints or recovery from chemotherapy toxicity versus chemotherapy alone. NOV-205, our second glutathione-based compound, acts as a hepatoprotective agent with immunomodulating and anti-inflammatory properties. NOV-205 had been administered to approximately 200 hepatitis patients in clinical trials and was in Phase 2 development for chronic hepatitis C non-responders. Based on favorable safety results of that trial, in March 2010 we initiated a multi-center U.S. Phase 2 trial evaluating NOV-205 as monotherapy in up to 40 chronic hepatitis C genotype 1 patients who previously failed treatment with pegylated interferon plus ribavirin. Safety was established in twenty patients receiving either 30mg or 60mg of NOV-205 daily for 49 days; however, no viral load reduction was observed.

Both compounds have completed clinical trials in humans and have been approved for use in Russia, where they were originally developed. We own all intellectual property rights worldwide (excluding Russia and other states of the former Soviet Union (the "Russian Territory"), but including Estonia, Latvia and Lithuania) related to compounds based on oxidized glutathione, including NOV-002 and NOV-205. Our patent portfolio prior to the Acquisition included six U.S. issued patents, two European issued patents and one Japanese issued patent.

Following the Acquisition, development of NOV-002 and NOV-205 has been suspended.

Products in Development

CLR1401 ("COLD")

COLD is a cancer-targeted chemotherapy that inhibits the phosphatidylinosotol 3-kinase (PI3K)/Akt survival pathway, which is overexpressed in many types of cancer. We believe COLD has the potential to be best-in-class versus other Akt inhibitors in development. Important advantages of COLD over competitor agents include:

- Selective uptake and retention by cancer cells/cancer stem cells compared to normal cells/stem cells. This results in significantly greater potency of COLD as an inhibitor of cell proliferation in cancer cells vs. normal cells (>10-fold difference), or

- Suitability for intravenous administration, avoiding dose-limiting GI toxicity seen with orally administered Akt-inhibiting APCs and potentially enabling greater systemic drug exposure and, hence, Akt-inhibition in cancer cells, resulting in superior efficacy.

We expect to submit an Investigational New Drug (IND) application to the Food and Drug Administration (FDA) in late 2012.

Chemically, COLD is 18-(p-[127I] iodophenyl) octadecyl phosphocholine, an alkyl phosphocholine (APC) subtype within the alkyl-phospholipid (APL) class of anti-tumor agents that includes perifosine, miltefosine and eldefosine. The iodine molecule in its structure is the stable, non-radioactive ("cold") isotope, 127I.

COLD exhibits significant *in vivo* efficacy in mouse xenograft tumor models, including non-small cell lung cancer and triple-negative breast cancers. In these models, human tumor cells are transplanted to and grow/metastasize in immunosuppressed animals. Tumor-bearing mice treated therapeutically (i.e., after primary tumors were established) with COLD i.v., once a week for 5 weeks, showed almost complete suppression of tumor growth compared to saline-treated control animals. Tumor growth suppression by COLD was maintained long after the end of the treatment period. Importantly, there were no deaths in COLD-treated animals while survival in control groups was <20%. Additionally, in a side-by-side comparison, COLD was much more effective in suppressing tumor growth and increasing survival in the lung cancer model than a standard dosing regimen of erlotinib (Tarceva, a marketed epidermal growth-factor-receptor kinase inhibitor).

The *in vivo* efficacy of COLD is believed to be the result of selective inhibition of the apoptosis-suppressing PI3K/Akt signaling pathway in tumor cells. This pathway, which is activated by growth factors such as PDGF (platelet-derived growth factor), EGF (epidermal growth factor), and insulin, is aberrantly active in many human cancers and contributes to cell growth, proliferation, survival and resistance to radiation and chemotherapeutics. COLD inhibits Akt activation in human tumor cell lines but not in normal proliferating cells (e.g., human fibroblasts). At the same concentrations, COLD induces caspase-mediated apoptosis and suppresses proliferation in a wide range of human tumor cell lines including prostate carcinoma, ovarian carcinoma, triple-negative breast carcinomas, pancreatic adenocarcinoma and non-small cell lung cancer. At these concentrations, COLD does not inhibit proliferation of normal cells.

Other cancer targeting APCs have also been reported to be active in xenograft models and to selectively inhibit tumor cell proliferation via a mechanism that involves induction of caspase-mediated apoptosis subsequent to inhibition of Akt activation and signaling. However, APCs are generally dose-limited *in vivo* (including in man) by side effects stemming from the necessity for their oral administration (due to their hemolytic properties), thus limiting Akt inhibition and anti-tumor efficacy. In contrast, data to date support the contention that COLD can be safely administered intravenously at doses that will result in greater drug exposure compared to other APCs and, thus, in greater Akt inhibition and improved efficacy.

Non-APC Akt inhibitors in development are not cancer-targeting and thus have the potential for a reduced therapeutic index due to non-selective inhibition of Akt, and hence proliferation, in normal vs. cancer cells. In contrast, selective uptake and retention of COLD results in more than 10-fold more potent inhibition of Akt activity and cell proliferation in cancer cells vs. normal cells.

The development path for COLD includes evaluation in a standard battery of IND-enabling pre-clinical tests and scaled-up manufacture. In parallel, COLD will be tested in mouse xenograft tumor models in combination with standard chemotherapeutic agents to demonstrate synergies as have been reported for perifosine. (COLD has been shown to synergize with radiation therapy – in the form of HOT administration – in some xenograft models.) These additional pre-clinical data will enable estimation of COLD plasma levels associated with *in vivo* efficacy, establish a starting dose for Phase 1 clinical trial and facilitate selection of target indications. IND filing with the FDA for COLD is expected in late 2012.

^{131}I-CLR1404 ("HOT," a radiolabeled compound***)***

HOT is a small-molecule, broad-spectrum, cancer-targeted radiopharmaceutical that we believe has first-in-class potential. HOT is comprised of a small quantity of COLD, acting as a cancer-targeted delivery and retention vehicle and incorporating a cytotoxic dose of radiotherapy (in the form of iodine-131, a radioisotope that is already in common use to treat thyroid and other cancer types). It is this "intracellular radiation" mechanism of cancer cell killing that imbues HOT with broad-spectrum anti-cancer activity. In 2009, we opened an IND with the FDA to study HOT in humans. In early 2010, we successfully completed a Phase 1a dosimetry trial in humans demonstrating initial safety and establishing dosing parameters for a Phase 1b dose-escalation trial. The Phase 1b dose-escalation trial is aimed at determining the Maximum Tolerated Dose, and we expect it to begin in the third quarter of 2011. In parallel, we expect to initiate Phase 2 efficacy trials in solid tumors in 2012 as soon as a minimal efficacious dose is established. We may determine such an effective dose upon seeing a response in the Phase 1b trial or calculating it from imaging trials in patients (see LIGHT below). Preclinical experiments *in vitro* (in cell culture) and *in vivo* (in animals) have demonstrated selective killing of cancer cells along with a benign safety profile. HOT's anti-tumor/survival-prolonging activities have been demonstrated in ten different xenograft models (human tumor cells implanted into animals) including breast, prostate, lung, glioma (brain), pancreatic, melanoma, ovarian, uterine, renal and colorectal cancers. In all but one model, a single administration of HOT was sufficient for efficacy. In view of HOT's selective uptake and retention in a wide range of solid tumors and its non-specific mechanism of cancer-killing (radiation), we expect to first develop HOT as a monotherapy, initially for solid tumors.

Chemically, HOT is 18-(p-[^{131}I]iodophenyl)octadecyl phosphocholine, identical to COLD except that the iodine in its structure is the radioactive ("hot") isotope, ^{131}I, which has a radiation half-life of eight days.

Single intravenous doses of HOT administered therapeutically (i.e., after primary tumors were established) have resulted in significant survival benefit compared to control animals in mouse xenograft tumor models including ovarian, pancreatic, non-small cell lung, triple-negative breast, prostate, glioma, colorectal and kidney cancers. Survival benefit reflected the degree of tumor growth suppression. Efficacy was also seen in a xenograft model employing human uterine sarcoma cells which over-express efflux pumps known to underlie resistance to many standard chemotherapeutic drugs. The broad efficacy profile of HOT across many tumor types is reflected in the finding that 52 of 54 human tumor cell lines showed 5- to 20-fold increased uptake/retention compared to normal human cells. HOT was also tested in combination with a standard efficacious dose of gemcitabine in a pancreatic cancer xenograft model. A single dose of HOT and gemcitabine given alone were equally efficacious while the combination therapy was significantly more efficacious than either treatment alone (additive). In each xenograft study, the dose of HOT was ~100 μCi, which is at least 50% less than the maximum tolerated dose in animals.

IND-enabling, Good Laboratory Practices (GLP) *in vivo* and *in vitro* pre-clinical pharmacokinetic/distribution, toxicology and drug safety studies were successfully completed using non-pharmacological concentrations/doses of COLD consistent with its role as a radiation vehicle in HOT. Tissue distribution studies supported prediction of acceptable human organ exposures and body clearance for HOT. Importantly, and in sharp distinction from biological products labeled with ^{131}I, the small molecule HOT showed very minimal variation in excretion kinetics or tissue distribution between individuals within species or across a 500-fold variation in dose. Single- and repeated-dose animal toxicology studies indicated very high margins of safety (80-200x) over the anticipated maximum human therapy dose of HOT.

In February 2010 we completed a Phase 1a dosimetry trial with single intravenous doses of 10 mCi HOT in eight patients with relapsed or refractory advanced solid tumors. Single doses of HOT were well tolerated. The reported adverse events were all considered minimal, manageable and either not dose limiting or not related to HOT. There were no serious adverse events reported. Analysis of total body imaging and blood and urine samples collected over 42 days following injection indicated that doses of HOT expected to be therapeutically effective can be administered without harming vital organs. Two subjects (one with colorectal cancer metastasized to lung and another with prostate cancer) had tumors that were imaged with 3D nuclear scanning (SPECT/CT) on day 6 after administration of HOT. Uptake of HOT into tumor tissue (but not adjacent normal tissue or bone marrow) was clearly demonstrated in both subjects. Echoing animal studies, pharmacokinetic analyses demonstrated that the plasma half-life of HOT was long (822 hours) and that there was no significant variation in excretion or radiation dosimetry between subjects. The trial established an initial dose of 12.5 mCi / m^2 (for example, 20 mCi dose for a patient with 1.6m^2 body surface area) for the Phase 1b escalating dose trial that is expected to begin in the third quarter of 2011.

The primary objective of this Phase 1b dose-escalation trial in patients with a range of advanced solid tumors is to define the MTD of HOT. In addition to determining the MTD, the Phase 1b trial will evaluate overall tumor response and safety. Concurrently, additional studies will generate quantitative imaging data in cancer patients using LIGHT (see below). These trials will enable calculation of a minimal efficacious dose of HOT for Phase 2 trials, expected to begin in 2012 with an initial focus on solid tumors with significant unmet medical need. Based on its broad-spectrum mechanism of action and wide-ranging single agent activity in animal cancer models, HOT will be used as monotherapy through proof-of-concept clinical trials, with subsequent exploration of combination with chemotherapeutic agents (a number of which are known to be radiosensitizers and thus potentially enhance the efficacy of HOT).

Tumor treatment with radioactive isotopes has been used as a fundamental cancer therapeutic for decades. The goals of targeted cancer therapy — selective delivery of effective doses of isotopes that destroy tumor tissue, sparing of surrounding normal tissue, non-accumulation in vital organs such as the liver and kidneys, and rapid elimination from the body — remain goals of novel therapies as well. We believe our isotope delivery technology is poised to achieve these goals. Because HOT has been shown to reliably and universally accumulate in cancer cells and the therapeutic properties of the ^{131}I are well known, we believe the risk of non-efficacy in human clinical trials is less than that of other cancer therapies at this stage of development, although no assurance can be given.

Other targeted radiotherapies include the marketed drugs Zevalin® (^{90}Y, Spectrum Pharmaceuticals) and Bexxar® (^{131}I, GSK). In both cases, tumor-targeting is monoclonal antibody-based and specific to lymphoma, which is a type of cancer involving cells of the immune system. Thus, these agents are not direct competitors to HOT. In addition, to the extent that these drugs do not offer a significant efficacy advantage over conventional chemotherapy in lymphoma, they are not viewed as representing the magnitude of medical or commercial impact of a more broadly efficacious radiotherapeutic product profile such as that envisioned for HOT. Notably, both Zevalin® and Bexxar® were approved on the basis of objective response rates (shrinking of tumors) without data to support improvement in survival, suggesting that regulatory approval of radiopharmaceuticals can be based on relatively shorter and smaller pivotal clinical trials than is often the case in oncology.

During 2009 and 2010, there have been positive developments regarding medical reimbursement for therapeutic radiopharmaceuticals in the United States. The Centers for Medicare and Medicaid Services have proposed that the reimbursement for radiopharmaceuticals shift from a cost-to-charge ratio ("CCR") to an average selling price ("ASP") plus 4% model. There has been support expressed for this proposal by government agencies, key industry members and the industry consortium, The Council on Radionuclides and Radiopharmaceuticals. The historical CCR model resulted in a reimbursement rate that was lower than the cost to purchase the drugs, thus creating a disincentive for hospitals to prescribe radiopharmaceuticals. The current ASP proposal is a solution to this reimbursement problem. Furthermore, there are proposals pending, which, if adopted, would decrease the physician reimbursement for chemotherapy and conventional radiation therapy. The proposed reduction in physician reimbursement for chemotherapy could likely result in the movement of a large volume of cancer care from the physician's office to the hospital environment. The proposed reduction in physician reimbursement for radiation therapy would result in a gap in revenue for radiation oncologists. Both proposed reductions favor an increase in opportunities to prescribe therapeutic radiopharmaceuticals. In fact, Zevalin® had an 84% increase in 2010 revenues versus 2009, according to Spectrum's SEC filings.

In conclusion, we believe that HOT does not entail the full extent of development risks typically associated with early-stage cancer therapeutics for the following reasons:

- HOT is selectively taken up and retained in cancer vs. normal cells and its delivery vehicle (COLD) will be given to patients in sub-pharmacological doses, resulting in an improved safety profile compared to standard chemotherapy or radiotherapy.
- HOT does not rely on inhibition or enhancement of a specific pathway; it works by exposing cancer cells to sustained lethal radiation from within.
- To date, the HOT chemotype has shown near-universal cancer-specific retention in more than 50 *in vivo* tumor models, making the molecule potentially effective in numerous cancer types (broad-spectrum) as compared to type-specific therapies.
- We believe we have completed all preclinical safety, pharmacology and toxicology studies required for an NDA including both single-dose and multi-dose studies.
- HOT is a small molecule that is easily characterized and synthesized and is therefore not subject to scale-up and manufacturing risks typically associated with large molecules such as monoclonal antibodies.
- HOT has a new delivery mechanism, but is paired with a proven and effective radioisotope (^{131}I) for therapy.
- HOT can be shipped using traditional freight carriers, such as FedEx, without special handling requirements, thereby significantly reducing the cost and effort in delivering HOT to a patient.

***^{124}I-CLR1404 ("LIGHT"),** labeled with a shorter-lived radioisotope, iodine-124)*

LIGHT is a small-molecule imaging agent that we believe has first-in-class potential in detecting and quantifying cancerous tumors and metastases. LIGHT is comprised of a small quantity of COLD, acting as a cancer-targeted delivery and retention vehicle, and incorporating ^{124}I, a new positron emission tomography (PET) imaging isotope. PET imaging used in conjunction with CT scanning has now become the imaging method of choice in oncology. In studies to date, LIGHT selectively illuminated malignant tumors in 52 of 54 animal models of cancer, demonstrating evidence of broad-spectrum, cancer-selective uptake and retention. We expect investigator-sponsored Phase 1/2 trials of LIGHT as a PET imaging agent to begin in mid-2011, and that the trials will initially include glioma, lung and breast cancers. These human trials, if successful, will serve two important purposes. The first purpose is to provide proof-of-concept for LIGHT itself as a PET imaging agent. We believe LIGHT has the potential to supplant the current "gold standard" agent, 18-fluoro-deoxyglucose (FDG), due to what we believe to be LIGHT's superior cancer-specificity and more favorable logistics of clinical use. The second purpose is to accelerate clinical development of HOT by enabling estimation of efficacious doses of HOT for Phase 2 trials.

Chemically, LIGHT is 18-(p-[^{124}I]iodophenyl) octadecyl phosphocholine, identical to COLD except that the iodine is the radioactive isotope, ^{124}I, which has a radiation half-life of 4 days.

Studies demonstrating the utility of LIGHT for imaging primary tumors and metastases as well as cancer stem cells are described above (Technology Overview).

The current gold standard for PET imaging (FDG, with sales of approximately $500 million annually) helps to detect a variety of tumors, though tumor detection is limited to those known to have increased glucose metabolism. However, unlike LIGHT, FDG is not selective for tumors and has limited spectrum. FDG localizes in certain normal tissue such as heart, kidney and brain tissues that also have high glucose metabolism. FDG is also known to localize in inflammatory sites. Other major limitations to the use of FDG are found in pelvic imaging due to the high renal (kidney) clearance of the compound. These characteristics of FDG, therefore, decrease its diagnostic specificity for certain malignancies.

We compared LIGHT and FDG side by side (24 hours apart) in the same tumor-bearing mouse that was also treated with carageenan to induce inflammation. As expected, FDG demonstrated significant uptake into the inflammatory lesion and organs such as heart and bladder, but not into the tumors. LIGHT, on the other hand, showed no uptake into the inflammatory lesion and organs, yet clear and demonstrable uptake into the tumors.

Additionally, the physical half-life of only 110 minutes for fluorine-18 labeled agents, such as FDG, severely limits their delivery range. ^{124}I has a four-day half-life that permits worldwide distribution of LIGHT from one manufacturing location. Additionally, the longer half-life affords a longer imaging window of up to seven days.

Investigator sponsored Phase 1/2 trials of LIGHT aimed at demonstrating and quantifying selective uptake and retention in human solid tumors are expected to begin in mid- 2011. Initial indications will include glioma, lung and breast cancers, with extension to other cancer types to follow.

COLD, HOT and LIGHT are alkylphospholipids ("APLs") that interact with certain types of lipid bilayers and, as a result, whose molecular targets are located at cellular membranes. Importantly, the core chemical structure shared across all three products provides selective targeting of cancer cells in preference to normal cells. COLD was deliberately designed to contain iodine (in the form of the stable, non-radioactive isotope, ^{127}I), thus enabling additional, distinct products differing only with respect to the form of iodine they contain – HOT contains short-lived radioactive ^{131}I and LIGHT contains even more short-lived ^{124}I. As a result, three cancer-targeted product profiles have been generated from a single chemical structure — a chemo-therapeutic agent (COLD), a radio-therapeutic agent (HOT) and a diagnostic/imaging agent (LIGHT).

Using a fluorescent-labeled analog of COLD (CLR1501 or "GLOW1"), selective uptake and retention has been demonstrated in cancer cells *in vitro*. Twenty-four hours after treatment, a variety of human tumor cell types (melanoma, colorectal, uterine, pancreatic, ovarian, glioblastoma) show strong staining with GLOW1 while normal cells (e.g., skin cells, fibroblasts) do not. Significantly, uptake/retention was also seen in cancer stem cells which are known to be relatively resistant to both chemotherapy and radiation and may therefore contribute to eventual relapse of disease following conventional chemotherapy.

Tumor targeting has also been demonstrated *in vivo*. For example, mice without intact immune systems, and inoculated with Panc-1 (pancreatic carcinoma), were injected with CLR1502 ("GLOW2", a fluorescent-labeled analog of COLD that is active in the near-infrared range) 24 and 96 hours prior to imaging. *In vivo* optical imaging showed pronounced accumulation of GLOW2 in tumors versus non-target organs and tissues. Similarly, PET imaging of tumor-bearing animals (colon, glioma, triple negative breast and pancreatic tumor xenograft models) administered the imaging agent LIGHT clearly shows selective uptake and retention by both primary tumors and metastases, including cancer stem cells. Furthermore, PET/CT analysis following co-injection of HOT (for therapy) and LIGHT (for imaging) revealed time-dependent tumor shrinkage and disappearance (over 9 days) in a cancer xenograft model.

The basis for selective tumor targeting of our compounds lies in differences between the plasma membranes of cancer cells as compared to those of most normal cells. Specifically, cancer cell membranes are highly enriched in "lipid rafts". Lipid rafts are specialized regions of the membrane phospholipid bilayer that contain high concentrations of cholesterol and sphingolipids and are abundant in cell surface and intracellular signaling molecules. Lipid rafts are central to the activity of our compounds in two ways:

1. Lipid rafts are portals of entry for APLs such as COLD, HOT and LIGHT. The marked selectivity of our compounds for cancer cells versus non-cancer cells is due to the fact that cancer cells have far more lipid rafts. In addition to accumulating in lipid rafts, COLD, HOT and LIGHT are transported into the cytoplasm, where they distribute to organelle membranes (mitochondria, ER, lysosomes) but not the nucleus.

2. Lipid rafts also regulate signaling-based cell functions including apoptosis and cell proliferation, and COLD disrupts this regulation. For example, one key signaling pathway that is regulated by interactions with lipid rafts and phospholipids is the phosphatidylinosotol 3-kinase (PI3K)/Akt pathway. Akt (a serine/threonine protein kinase) is activated in lipid raft regions via phosphorylation by PI-dependent kinases and goes on to phosphorylate anti-apoptotic proteins (e.g., Bcl-xL and FLIP) resulting in their inactivation and, thus, promotion of tumor cell survival. COLD pharmacologically inhibits the activation of Akt. In cancer cells, Akt inhibition is associated with induction of apoptosis and decreased cell proliferation/survival.

In contrast to COLD, which is administered at doses sufficient to exert pharmacological activity versus tumor cell survival signaling pathways, HOT and LIGHT contain only a small, non-pharmacological amount of COLD as a vehicle to selectively deliver radiation (in the form of ^{131}iodine in HOT) sufficient to kill cancer cells or an imaging agent (^{124}iodine in LIGHT) to tumor cells.

Legacy Pipeline Products

NOV-002 and NOV-205 are both proprietary formulations of oxidized glutathione (GSSG). NOV-002 is a formulation of GSSG in a 1000:1 molar ratio with cisplatin, which increases the bioavailability of GSSG *in vivo*. NOV-205 is a formulation of GSSG in a 1:1 molar ratio with inosine, a known anti-inflammatory agent.

In some clinical trials conducted to date, relative to standard chemotherapy alone, administration of NOV-002 in combination with standard chemotherapy has resulted in both increased efficacy (longer survival or improved anti-tumor response) and mitigation of chemotherapy-induced toxicity (e.g., hematological toxicity). Non-clinical studies suggest that this clinical profile may be due to multiple effects exerted on both tumor cells and normal cells resulting from the modulation of the cellular oxidation/reduction redox state. These results were not demonstrated in our Phase 3 trial in advanced NSCLC in combination with paclitaxel and carboplatin.

Studies published between 2005 and 2009 (Free Radical Research, June 2005; Current Opinion on Pharmacology, 2007; Free Radical Biology and Medicine, 2007; and Trends in Biochemical Sciences, 2009) have demonstrated that the glutathione system is not only involved in cell detoxification (via reduced glutathione) but is also an important regulator of protein and cell function (via GSSG). An increasing number of cell processes and proteins have been shown to be regulated by their redox environment. Specifically, under oxidative conditions, or simply in the presence of GSSG, they undergo a structural change termed glutathionylation whereby a molecule of glutathione is covalently attached to reactive thiol groups in the protein. Glutathionylation modulates protein function, either increasing or decreasing it, and as a reversible modification serves as a regulatory mechanism analogous to protein phosphorylation/dephosphorylation.

In vitro and *in vivo* experiments had shown:

- When added to cells, NOV-002 results in generation of a mild and transient oxidative signal at the cell surface and intracellularly, glutathionylation of redox-sensitive proteins and a range of biochemical/molecular effects that are dependent on cell type and status, leading to alteration of cell functions.
- In tumor cells, redox modulation by NOV-002 has been shown to decrease the rate of tumor cell proliferation. For example, in a human ovarian tumor cell line (SKOV3), NOV-002 induced an intracellular oxidative signal (as evidenced by generation of reactive oxygen species), increased levels of active (i.e., phosphorylated) c-Jun N-terminal kinases (a component of cell signaling pathways regulating proliferation) and decreased the rate of tumor cell proliferation. This was also accompanied by increased tumor cell apoptosis.

- Also in tumor cells, NOV-002 decreased signaling through a redox-regulated pathway known to control cell migration, invasiveness and metastasis and inhibited invasiveness of a variety of human tumor cell types.
- In animal tumor models, NOV-002 has been shown to increase anti-tumor immune responsiveness and to inhibit tumor growth and enhance survival when combined with chemotherapy.
    - In a mouse model of colon cancer, NOV-002 significantly increased anti-tumor response and survival when combined with chemotherapy (cyclophosphamide).
    - In a mouse model of melanoma where animals were treated with a form of immunotherapy (adoptive T-cell transfer) together with chemotherapy (cyclophosphamide), the addition of NOV-002 significantly reduced the rate of tumor growth and increased survival.
    - In a mouse ovarian cancer model, animals treated with NOV-002 alone showed a significantly increased tumor-specific cellular immune response (interferon gamma production) compared to control mice treated with a saline vehicle.
- In contrast to these suppressive effects on tumors, similar redox modulation, protein glutathionylation and cell signaling pathway effects from NOV-002 treatment resulted in increased proliferation in myeloid lineage cells such as HL-60 cells. Furthermore, *in vivo* , NOV-002 treatment of chemosuppressed mice (using cyclophosphamide) led to increased total bone marrow cell number and proliferation of multi-lineage bone marrow progenitor cells (i.e., progenitor cells for white cells, red cells and platelets).

NOV-205 and NOV-002 have in common GSSG as an active pharmaceutical ingredient. Clinical and non-clinical results indicate that NOV-205 also possesses immunomodulatory activity, and in animal models of chemical- and viral-induced hepatic injury, NOV-205 increased survival. In addition, based on literature reports, the inosine component of NOV-205 is believed to contribute anti-inflammatory activity to its pharmacological profile.

Although these pre-clinical findings with NOV-002 and NOV-205 demonstrated favorable biological signals in cell and animal models, there can be no assurance that pre-clinical findings are predictive of clinical trial results. While some promising pre-clinical findings may have been supported in Phase 2 trials conducted to date, they were not supported in our recently concluded Phase 3 clinical trial with NOV-002.

NOV-002

NOV-002 is an injectable small-molecule compound based on a proprietary formulation of oxidized glutathione, or "GSSG" in a 1000:1 ratio of GSSG with cisplatin, which improves the bioavailability of NOV-002 *in vivo* . NOV-002 is believed to act as a chemopotentiator and a chemoprotectant by regulating redox-sensitive cell signaling pathways. NOV-002 has been administered to approximately 1,000 cancer patients in clinical trials. NOV-002 has an extensive safety database and has been shown to be well-tolerated. Moreover, NOV-002 can be distinguished from other pharmaceuticals on the market or in development because, in several clinical trials, NOV-002 displayed a unique profile of safety, potentiation of chemotherapy (increased survival rates and/or better anti-tumor effects) and improved recovery from chemotherapy toxicity. This profile was not observed in the recently concluded Phase 3 trial in NSCLC. Based on the totality of available clinical trial results, NOV-002 does not appear to be chemotherapy or tumor specific, though it may prove to be more effective in some solid tumor indications than others and/or in combination with certain chemotherapies across these indications. NOV-002 was being developed for use in combination with standard of care chemotherapies for the treatment of solid tumors. Further development of NOV-002 is suspended for all indications pending further evaluation.

NOV-002 in NSCLC

We announced in February 2010 that the primary endpoint of improvement in overall survival was not met in our pivotal Phase 3 trial of NOV-002 in advanced NSCLC. Following evaluation of the detailed trial data, we announced in March 2010 that the secondary endpoints also were not met in the trial. Adding NOV-002 to paclitaxel and carboplatin chemotherapy was not statistically or meaningfully different in terms of efficacy-related endpoints or recovery from chemotherapy toxicity versus chemotherapy alone. NOV-002 was safe, as it did not add to the overall toxicity of chemotherapy. Detailed results of this Phase 3 trial were presented at the 2010 annual meeting of the American Society of Clinical Oncology in June 2010.

This randomized, controlled, open-label Phase 3 trial was conducted under a Special Protocol Assessment and Fast Track designation, enrolled 903 patients with stage IIIb/IV NSCLC, and included all histological subtypes. The trial, conducted across approximately 100 clinical sites in 12 countries, evaluated NOV-002 in combination with first-line paclitaxel and carboplatin chemotherapy (in 452 patients) versus paclitaxel and carboplatin alone. The primary efficacy endpoint of the trial was improvement in overall survival. The secondary endpoints included progression-free survival, response rate and duration of response, recovery from chemotherapy-induced myelosuppression, determination of immunomodulation, quality of life and safety. Based on the results from the Phase 3 trial, we have determined to discontinue development of NOV-002 for NSCLC in combination with first-line paclitaxel and carboplatin chemotherapy.

We commenced the Phase 3 trial in November 2006 following three previously conducted Phase 2 trials (two conducted in Russia and one conducted by us in the U.S.) that had demonstrated clinical activity and safety of NOV-002 in combination with first-line chemotherapy in advanced NSCLC.

Advanced NSCLC is an indication which is very difficult to treat. Platinum-based chemotherapy regimens are standard first-line treatment for advanced NSCLC patients who are subject to serious chemotherapy-induced adverse effects. According to results of 12 Phase 3 clinical trials published from 2001-2008, the one-year survival rate for patients receiving paclitaxel and carboplatin first-line therapy was approximately 40%, the weighted average for median survival was 9.7 months and the objective tumor response (defined as greater than 30% tumor shrinkage) rate was about 27%. Overall, fewer than 5% of advanced NSCLC patients survive five years following diagnosis. Improving on the standard of care in unselected advanced NSCLC remains challenging and elusive. Approximately 20 Phase 3 first-line trials have failed in NSCLC, including some drugs that are on the market for other cancer indications. The compounds that went into these Phase 3 trials had promising Phase 2 results. Furthermore, the two compounds that did demonstrate a statistically significant improvement in survival in advanced NSCLC when added to first-line chemotherapy, did not succeed when combined with other first-line chemotherapy agents.

NOV-002 in Neoadjuvant Treatment of Breast Cancer

We were developing NOV-002 to treat early-stage breast cancer in combination with chemotherapy. Breast cancer remains a serious public health concern throughout the world. According to the American Cancer Society, approximately 209,000 women in the U.S. were expected to be diagnosed with breast cancer in 2010, and approximately 40,000 were expected to die from the disease. Neoadjuvant or preoperative systemic chemotherapy is commonly employed in patients with locally advanced stage-III breast cancer and in some patients with stage-II tumors. Administration of neoadjuvant chemotherapy reduces tumor size, thus enabling breast conservation surgery in patients who otherwise would require a mastectomy. Furthermore, several studies have shown that pathologic complete response (pCR) following neoadjuvant chemotherapy is associated with a significantly higher probability of long-term survival. However, only a small fraction of patients with HER-2 negative breast cancer achieve a pCR with standard chemotherapy.

A U.S. Phase 2 trial to evaluate the ability of NOV-002 to enhance the effectiveness of such chemotherapy while diminishing side-effects commenced in June 2007 at the Medical University of South Carolina (MUSC) Hollings Cancer Center. The trial was completed during 2010 at the Braman Family Breast Cancer Institute at the Sylvester Comprehensive Care Center University of Miami Miller School of Medicine (Sylvester). Alberto Montero, MD, Assistant Professor of Medicine at Sylvester, was the Principal Investigator. The primary objective of this open-label, single-arm trial was to determine if preoperative administration of NOV-002 in combination with eight cycles of chemotherapy (four of doxorubicin and cyclophosphamide followed by four of docetaxel) results in an appreciably higher pCR rate than expected with this same chemotherapeutic regimen alone. According to the Simon two-stage trial design, if four or more pCRs were observed in the first stage of the trial (19 women), enrollment would continue into the second stage, for a total of 46 women. This first-stage hurdle was met.

On July 12, 2010, we announced the 12th pathologic complete response (pCR), which is the minimum number of pCRs (39%) required in order for NOV-002 to be declared active, in the first 31 patients who completed chemotherapy and underwent surgery. The historical control pCR rate is in the range of 10-20%. Furthermore, NOV-002 was associated with decreased hematologic toxicities and with decreased use of growth factors, such as Ethropoiesis-Stimulating Agents, which are potentially harmful, relative to historical experience. The trial results were presented at the AACR Breast Cancer Symposium in San Antonio, TX, in December 2010.

NOV-002 in Chemotherapy (Platinum)-Resistant Ovarian Cancer

We were developing NOV-002 to treat platinum-resistant ovarian cancer. According to the American Cancer Society, approximately 22,000 U.S. women were expected to be diagnosed with ovarian cancer in 2010 and 14,000 women are expected to die from it. There is a lack of effective treatment, particularly in the case of patients who are chemotherapy refractory (those who do not respond to chemotherapy) or resistant (those who relapse shortly after receiving chemotherapy).

First-line chemotherapy treatment is typically the same in ovarian cancer as in NSCLC, i.e., carboplatin and paclitaxel chemotherapy in combination. Doxorubicin and topotecan alternate as second- and third-line chemotherapy treatments.

Refractory/resistant ovarian cancer patients have a very poor prognosis because they face inadequate therapeutic options. Once a woman's ovarian cancer is defined as platinum resistant, the chance of having a partial or complete response to further platinum therapy is typically less than 10%, according to an article by A. Berkenblit in the June 2005 issue of the *Journal of Reproductive Medicine*.

In a single-arm, U.S. Phase 2 chemotherapy-resistant ovarian cancer trial at the Massachusetts General Hospital and Dana-Farber Cancer Institute from July 2006 through May 2008, NOV-002 (plus carboplatin) slowed progression of the disease in 60% of evaluable patients (9 out of 15 women). The median progression-free survival was 15.4 weeks, almost double the historical control of 8 weeks. These results were presented at the American Society of Clinical Oncology in May 2008.

NOV-002 - Summary of Clinical Experience in Russia

Glutoxim® (the tradename for NOV-002 in Russia) is approved in Russia for general medicinal usage as an immunostimulant in combination with chemotherapy and antimicrobial therapy, and specifically for indications such as tuberculosis and psoriasis. Efficacy and excellent safety have been demonstrated in trials with 390 patients in Russia across numerous types of cancer including NSCLC, breast cancer, ovarian cancer, colorectal cancer and pancreatic cancer. Since the Russian Ministry of Health approval in 1998, it is estimated that Glutoxim® has been administered to over 10,000 patients. The Russian non-clinical and clinical data set, which includes clinical safety and efficacy data, extensive animal toxicology studies and a comprehensive chemistry and manufacturing package, was accepted by the FDA as the basis of an IND in 2000.

NOV-205

NOV-205 in Chronic Hepatitis C

NOV-205 is a unique, injectable, small-molecule proprietary formulation of oxidized glutathione in a 1:1 molar ratio with inosine. NOV-205 was approved in Russia by the Ministry of Health in 2001 as a monotherapy for the treatment of hepatitis B and C. Previously, NOV-205 demonstrated clinical activity (reduced viral load and improved liver function) and safety as monotherapy for treatment of hepatitis B and C in a total of 178 patients from Russia.

On the basis of the clinical and pre-clinical data package underlying Russian approval of NOV-205, in combination with U.S. chemistry and manufacturing information, we filed an IND with the FDA for NOV-205 as a monotherapy in chronic hepatitis C in March 2006. The FDA accepted our IND in April 2006, and a U.S. Phase 1b trial in patients who previously failed treatment with pegylated interferon plus ribavirin commenced in September 2006 and was completed in December 2007. Based on favorable safety results of that trial, in March 2010 we initiated a multi-center U.S. Phase 2 trial evaluating NOV-205 as monotherapy in up to 40 chronic hepatitis C genotype 1 patients who previously failed treatment with pegylated interferon plus ribavirin. Safety was established in twenty patients receiving either 30mg or 60mg of NOV-205 daily for 49 days; however, no viral load reduction was observed. Due to NOV-205's lack of clinical activity as a monotherapy and our limited financial resources, we are currently not planning any further development of NOV-205.

Manufacturing

Post-Acquisition

We manufacture HOT and COLD at our current Good Manufacturing Practices (cGMP) compliant radiopharmaceutical manufacturing facility in Madison, WI. This facility, consisting of approximately 19,500 square feet, contains offices, laboratories, a radiopharmaceutical research lab, a cGMP radiopharmaceutical manufacturing suite and a cGMP analytical laboratory for product release. Our manufacturing facility holds a State of Wisconsin Department of Health Services Radioactive Materials License which authorizes the use and possession of radioactive material for both manufacturing and distribution activities. This license establishes a possession limit of 30 Curies of iodine-131. The facility also holds a State of Wisconsin DHS Radioactive Materials License which authorizes the use and possession of radioactive materials by Cellectar for research and development. The Research and development license permits the use and possession of iodine-125, iodine-131 (1 Curie) and iodine-124 (100 millicuries). LIGHT is manufactured by our collaborator, University of Wisconsin at Madison. The drug substance is identical for all three products. It is a dry powder produced via a six-step synthetic scheme. The release specifications for drug substance have been established and validated. The impurity levels at small scale are very low suggesting that larger scale production should be feasible. We have also demonstrated 24-month stability for the drug substance in desiccated and refrigerated form. Our laboratories are well equipped with the appropriate equipment for manufacturing pilot and small-scale batches to cGMP. We believe we have adequate capacity for any Phase II study of HOT and the potential for larger scale build-out for larger Phase III studies. We are exploring scaling up production capacity of COLD, via contract manufacturers or at our facility, to support an IND filing and clinical trials. All investigational drug substance and product intended for human use during clinical studies will be manufactured according to ICH guidelines, FDA requirements (CFR part 211) and cGMP.

Pre-Acquisition

Our proprietary manufacturing process for oxidized glutathione-based products is well-established, simple and scalable. We used U.S. and Canadian contract manufacturing facilities that are registered with the FDA to support our U.S. development efforts. We do not plan to build manufacturing capability over the next several years. To the extent we require the manufacture of these products, we would continue to employ contract manufacturers. The active pharmaceutical ingredient of NOV-002 have been manufactured in the U.S. in compliance with current Good Manufacturing Practices in a single, synthetic step and then filled, finished and packaged most recently at Hyaluron (Burlington, MA) as a sterile, filtered, aseptically-processed solution for intravenous and subcutaneous use. NOV-002 clinical trial material (vials and syringes containing the active pharmaceutical ingredient and solution) has successfully completed 36-month stability studies.

We have most recently manufactured NOV-205 clinical trial material at Lyophilization Services of New England (Manchester, NH) in compliance with current Good Manufacturing Practices in a single, synthetic step and then filled, finished and packaged into glass vials as a sterile, filtered, aseptically-processed solution for subcutaneous use.

Sales and Marketing

Outside of the U.S., we sought to commercialize NOV-002 through partnerships with pharmaceutical companies that have development capabilities along with commercial expertise and infrastructure. In February 2009, we entered into a collaboration with Mundipharma under which we granted Mundipharma exclusive rights to develop, manufacture and commercialize NOV-002 in Europe (other than the Russian Territory), Asia (other than the Chinese Territory) and Australia. In December 2007 we entered into a collaboration agreement with Lee's Pharm under which we granted Lee's Pharm exclusive rights to develop, manufacture and commercialize NOV-002 for cancer and NOV-205 for hepatitis in the Chinese Territory.

COLD, HOT and LIGHT have not been partnered to date.

Should we obtain regulatory approval for any of our products for any indication, we plan to pursue and evaluate all available options to launch and commercialize them. These options presently include, but are not limited to, building our own salesforce, utilizing a contract sales organization or entering into a partnering arrangement with a pharmaceutical company with strong commercial expertise and infrastructure in the U.S.

Intellectual Property

We have established a broad intellectual property rights portfolio around our cancer-targeting alkylphospholipid technology platform including COLD, HOT and LIGHT.

Our proprietary rights include patents and patent applications that are either owned by us or exclusively licensed to us by the University of Michigan (the "Michigan patents"). COLD, HOT and LIGHT are all covered by Michigan patents that provide compound (composition of matter) coverage in the US and Canada and expire in 2016. Our patents and applications cover methods of use, composition and method of manufacture related to COLD, HOT and LIGHT. Many of these patents and applications are filed worldwide. These will generally expire between 2025 and 2030 unless extended.

In particular, HOT is covered by three additional series of our patents and applications aside from the Michigan compound patents. The first is directed to a method of use for cancer therapy which has been extensively filed throughout the world including but not limited to Europe, Asia (most notably Japan, South Korea, China and India) as well as Latin America (Brazil and Mexico). These will expire in most jurisdictions in 2025. The second application is specifically directed to HOT as a composition and is pending in the U.S. and will be filed/nationalized in foreign countries in 2012. These patents, once issued, would expire in most jurisdictions in 2030. Lastly, an application directed to cancer stem cell therapy is pending in the U.S. and will be filed/nationalized in foreign countries in 2011 and is expected to expire in 2030. Some of these resulting patents may be extendable on a country-by-country basis.

COLD is covered by two additional series of pending applications separate from the Michigan compound patents. The first application is directed to a method of using COLD for cancer therapy and will be filed/nationalized in foreign countries in 2012. These patents, once issued, would expire in 2030. The second is directed to the use of COLD for cancer stem cell therapy and is pending in the U.S. This application will be filed/nationalized in foreign countries in 2011. All of these patents, once issued, are expected to expire in 2030. Some of these resultant patents may be extendable on a country-by-country basis.

Separate from any patent protection and following product approval by regulatory authorities, data exclusivity may be available for HOT and COLD for up to 10 years on a country-by-country basis (up to 5 years in the US).

LIGHT is covered by the Michigan compound patents as well as two of our U.S. patents, one of which is directed to its use for virtual colonoscopy (expiring 2029) and one of which is directed to its use for *in vitro* diagnostics (expiring 2028). LIGHT is also covered by pending US and European patent applications directed to its use for *in vivo* diagnostics and once issued should expire in 2025. Lastly, the use of LIGHT for diagnostics purposes with cancer stem cells is pending in the U.S. and will be filed/nationalized in foreign countries in 2011. These patents are expected to expire in 2030.

In addition to the above noted patents/applications directed to HOT, COLD and LIGHT, we have proprietary rights in other patents/applications directed to different forms of alkylphospholipids and methods of manufacturing of alkylphospholipids.

We also own all intellectual property rights worldwide (excluding the Russian Territory) related to both of our clinical-stage compounds, i.e., NOV-002 and NOV-205, and other pre-clinical compounds based on oxidized glutathione. We have six issued patents in the U.S. We also have two issued patents in Europe and one in Japan. Overall, we have filed more than 30 patent applications worldwide related to compounds based on oxidized glutathione.

Issued composition of matter patents cover proprietary formulations of oxidized glutathione that do not expire until 2019, and these patents include methods of manufacture for oxidized glutathione formulated with various metals. Claims further include treatment of cancer, hematologic, immunologic and infectious diseases and other medical conditions. Furthermore, issued patents that are valid until 2016 cover methods of use for oxidized glutathione (+/- formulation enhancers) for simulation of cytokine and hematopoietic factors, and for treatment of cancer, hematologic, immunologic and infectious diseases.

Licenses / Collaborations

Novelos has entered into a collaboration agreement granting Mundipharma exclusive rights to develop, manufacture and commercialize NOV-002 in Europe (other than the Russian Territory), Asia (other than the Chinese Territory) and Australia. Both of our clinical-stage compounds, NOV-002 and NOV-205, have been licensed to Lee's Pharm for exclusive development, manufacture and commercialization in the Chinese Territory. Under a securities purchase agreement dated August 25, 2009 (the "August 2009 Purchase Agreement"), we granted Purdue Pharma, L.P. ("Purdue") a right of first refusal with respect to bona fide offers received from third parties to obtain NOV-002 Rights (as defined in the August 2009 Purchase Agreement) in the U.S.. The right of first refusal terminates upon business combinations, as defined in the August 2009 Purchase Agreement. We expect that the negative results of our Phase 3 trial in advanced NSCLC will adversely affect development and commercialization of NOV-002 under the collaboration agreements with Mundipharma and Lee's Pharm.

Employees

As of April 11, 2011 we had 12 employees, 8 of whom were employees of Cellectar prior to the Acquisition. We believe our relationships with our employees are good.

Regulation

The manufacturing and marketing of our compounds and our related research and development activities are subject to regulation for safety, efficacy and quality by numerous governmental authorities in the U.S. and other countries. We anticipate that these regulations will apply separately to each of our compounds.

In the U.S., pharmaceuticals are subject to rigorous federal regulation and, to a lesser extent, state regulation. The Federal Food, Drug and Cosmetic Act and other federal and state statutes and regulations govern, among other things, the testing, manufacture, safety, efficacy, labeling, storage, recordkeeping, approval, advertising and promotion of our pharmaceuticals.

The steps required before a pharmaceutical agent may be marketed in the U.S. include:

- Pre-clinical laboratory tests, *in vivo* pre-clinical studies, and formulation studies;
- The submission to the FDA of an IND for human clinical testing, which must become effective before human clinical trials can commence;
- Adequate and well-controlled human clinical trials to establish the safety and efficacy of the product;
- The submission of a New Drug Application ("NDA") or Biologic Drug License Application to the FDA; and
- FDA approval of the NDA or Biologic Drug License.

In addition to obtaining FDA approval for each product, each product manufacturing facility must be registered with and approved by the FDA. Manufacturing facilities are subject to biennial inspections by the FDA and must comply with the FDA's Good Manufacturing Practices for products, drugs and devices.

Whether or not FDA approval has been obtained, approval of a product by regulatory authorities in foreign countries must be obtained prior to the commencement of commercial sales of the pharmaceutical in such countries. The requirements governing the conduct of clinical trials and drug approvals vary widely from country to country, and the time required for approval may be longer or shorter than that required for FDA approval.

Item 1A. Risk Factors

We will require additional capital in order to continue our operations beyond the fourth quarter of 2011.

We expect that we will continue to generate operating losses for the foreseeable future. At December 31, 2010, our cash balance was $2,373,000. Following the Acquisition, on April 8, 2011, we completed a private placement of common stock and warrants for gross proceeds of $5,135,000. We believe our cash on hand, including the proceeds from the April private placement, is adequate to fund operations into the fourth quarter of 2011. Our ability to execute our operating plan beyond that time depends on our ability to obtain additional funding via the sale of equity and/or debt securities, a strategic transaction or otherwise. We plan to actively pursue financing alternatives, but there can be no assurance that we will obtain the necessary funding.

Our five largest stockholders own approximately 54% of our outstanding common stock, which limits the influence of other shareholders.

After completion of the Acquisition and private placement, 54% of our outstanding common stock is controlled by our five largest shareholders, all of whom are former shareholders of Cellectar. The interests of these stockholders may differ from those of other stockholders. These stockholders will likely continue to have the ability to significantly affect the outcome of all corporate actions requiring stockholder approval, including the following actions:

- the election of directors;
- the amendment of charter documents; and
- the approval of certain mergers and other significant corporate transactions, including a sale of substantially all of our assets.

A class action lawsuit has been filed against Novelos and its chief executive officer, which could divert management's attention and harm our business.

A purported class action complaint was filed on March 5, 2010 in the U.S. District Court for the District of Massachusetts by an alleged shareholder on behalf of himself and all others who purchased or otherwise acquired Novelos common stock in the period between December 14, 2009 and February 24, 2010, against Novelos and its President and Chief Executive Officer, Harry S. Palmin. The complaint claims that the defendants violated Section 10(b) of the Securities Exchange Act of 1934, as amended, and Rule 10b-5 promulgated thereunder in connection with alleged disclosures related to the Phase 3 Trial. Novelos has moved to dismiss the action, and the plaintiffs have opposed this motion. We believe the allegations are without merit and intend to defend vigorously against the allegations. However, this type of litigation often is expensive and diverts management's attention and resources, whether or not the claims are ultimately successful, and this could adversely affect our business.

We may have difficulty raising additional capital for our future operations in the longer term.

We currently generate insignificant revenue from sales or licensing of products. We do not know when this will change. We have expended and expect to continue to expend substantial funds on the research, development and clinical and pre-clinical testing of our drug compounds. We will require additional funds to conduct research and development, establish and conduct clinical and pre-clinical trials, establish commercial-scale manufacturing arrangements and provide for the marketing and distribution of our products. Additional funds may not be available on acceptable terms, if at all. If adequate funding is not available to us, we may have to delay, reduce the scope of or eliminate one or more of our research or development programs or product launches or marketing efforts, which may materially harm our business, financial condition and results of operations.

Our capital requirements and our ability to meet them depend on many factors, including:

- the number of potential products and technologies in development;

- continued progress and cost of our research and development programs;
- progress with pre-clinical studies and clinical trials;
- the time and costs involved in obtaining regulatory clearance;
- costs involved in preparing, filing, prosecuting, maintaining and enforcing patent claims;
- costs of developing sales, marketing and distribution channels and our ability to sell our drugs;
- costs involved in establishing manufacturing capabilities for clinical trial and commercial quantities of our drugs;
- competing technological and market developments;
- market acceptance of our products;
- costs for recruiting and retaining management, employees and consultants;
- costs for educating physicians regarding the application and use of our products;
- our status as a Bulletin Board-listed company and the prospects for our stock being listed on a national exchange;
- uncertainty and economic instability resulting from terrorist acts and other acts of violence or war; and
- the condition of capital markets and the economy generally, both in the U.S. and globally.

We may consume available resources more rapidly than currently anticipated, resulting in the need for additional funding sooner than expected. We may seek to raise any necessary additional funds through the issuance of warrants, equity or debt financings or executing collaborative arrangements with corporate partners or other sources, which may be dilutive to existing stockholders or have a material effect on our current or future business prospects. In addition, in the event that additional funds are obtained through arrangements with collaborative partners or other sources, we may have to relinquish economic and/or proprietary rights to some of our technologies or products under development that we would otherwise seek to develop or commercialize by ourselves. If adequate funds are not available, we may be required to significantly reduce or refocus our development efforts with regard to our drug compounds.

The integration of Novelos and Cellectar may be costly and difficult.

The successful integration of independent businesses or assets can be a complex, costly and time-consuming process. The difficulties of integrating Novelos and Cellectar include, among others:

- consolidating research and development operations;
- preserving important research and development, manufacturing and supply, and other relationships;
- minimizing the diversion of management's attention from ongoing business concerns;
- coordinating geographically separate organizations; and
- optimizing the functioning of a newly constituted Board of Directors.

We may not accomplish the integration of Novelos and Cellectar smoothly or successfully. The diversion of the attention of our management from current operations to integration efforts and any difficulties encountered in combining operations could prevent the combined company from realizing the full benefits anticipated to result from the Acquisition and may adversely affect the combined business. Additionally, the costs associated with the integration of Novelos and Cellectar may be significant. To the extent that we incur integration costs that are not anticipated, these unexpected costs could adversely impact our liquidity and force us to seek additional funding sooner than would otherwise be necessary.

The independent registered public accounting firms for Novelos and Cellectar each have expressed doubts about the respective ability of each company to continue as going concerns, which may hinder our ability to obtain future financing.

Our financial statements as of December 31, 2010 were prepared under the assumption that we will continue as a going concern for the next twelve months. The independent registered public accounting firm that audited our 2010 financial statements, in their report, included an explanatory paragraph referring to our recurring losses from operations and expressing substantial doubt in our ability to continue as a going concern without additional capital becoming available. Our financial statements do not include any adjustments that might result from the outcome of this uncertainty. Our ability to continue as a going concern depends on our ability to obtain additional equity or debt financing, attain further operating efficiencies, reduce expenditures, and, ultimately, to generate revenue.

Although Novelos is the legal acquiror in the Acquisition, due to the significant post-acquisition ownership of the former Cellectar shareholders, Cellectar is the acquiror for accounting purposes. Accordingly, in periodic filings for periods ended after the date of the Acquisition, the historical financial statements of Novelos will be replaced with those of Cellectar. The independent registered public accounting firm that audited Cellectar's 2009 financial statements, in their report, included an explanatory paragraph referring to their recurring losses from operations and expressing substantial doubt in their ability to continue as a going concern without additional capital becoming available. We anticipate that independent registered public accounting firm's report on the 2010 Cellectar financial statements will include a similar explanatory paragraph.

The failure to complete development of our therapeutic technology, to obtain government approvals, including required FDA approvals, or to comply with ongoing governmental regulations could prevent, delay or limit introduction or sale of proposed products and result in failure to achieve revenues or maintain our ongoing business.

Our research and development activities and the manufacture and marketing of our intended products are subject to extensive regulation for safety, efficacy and quality by numerous government authorities in the U.S. and abroad. Before receiving clearance to market our proposed products by the U.S. Food and Drug Administration ("FDA"), we will have to demonstrate that our products are safe and effective for the patient population for the diseases that are to be treated. Clinical trials, manufacturing and marketing of drugs are subject to the rigorous testing and approval process of the FDA and equivalent foreign regulatory authorities. The Federal Food, Drug and Cosmetic Act and other federal, state and foreign statutes and regulations govern and influence the testing, manufacturing, labeling, advertising, distribution and promotion of drugs and medical devices. As a result, clinical trials and regulatory approval can take many years to accomplish and require the expenditure of substantial financial, managerial and other resources.

In order to be commercially viable, we must successfully research, develop, obtain regulatory approval for, manufacture, introduce, market and distribute our technologies. This includes meeting a number of critical developmental milestones including:

- demonstrating benefit from delivery of each specific drug for specific medical indications;
- demonstrating through pre-clinical and clinical trials that each drug is safe and effective; and
- demonstrating that we have established viable Good Manufacturing Practices capable of potential scale-up.

The timeframe necessary to achieve these developmental milestones may be long and uncertain, and we may not successfully complete these milestones for any of our intended products in development.

In addition to the risks previously discussed, our technology is subject to developmental risks that include the following:

- uncertainties arising from the rapidly growing scientific aspects of drug therapies and potential treatments;
- uncertainties arising as a result of the broad array of alternative potential treatments related to cancer and other diseases; and
- anticipated expense and time believed to be associated with the development and regulatory approval of treatments for cancer and other diseases.

In order to conduct the clinical trials that are necessary to obtain approval by the FDA to market a product, it is necessary to receive clearance from the FDA to conduct such clinical trials. The FDA can halt clinical trials at any time for safety reasons or because we or our clinical investigators do not follow the FDA's requirements for conducting clinical trials. If we are unable to receive clearance to conduct clinical trials for a product, or the trials are halted by the FDA, we will not be able to achieve any revenue from such product in the U.S. as it is illegal to sell any drug for use in humans in the U.S. without FDA approval.

Data obtained from clinical trials are susceptible to varying interpretations, which could delay, limit or prevent regulatory clearances.

Data obtained from pre-clinical studies and clinical trials do not necessarily predict the results that will be obtained from later pre-clinical studies and clinical trials. Moreover, pre-clinical and clinical data are susceptible to varying interpretations, which could delay, limit or prevent regulatory approval. A number of companies in the pharmaceutical industry have suffered significant setbacks in advanced clinical trials, even after promising results in earlier trials. The failure to adequately demonstrate the safety and effectiveness of an intended product under development could delay or prevent regulatory clearance of the potential drug, which would result in delays to commercialization and could materially harm our business. Our clinical trials may not demonstrate sufficient levels of safety and efficacy necessary to obtain the requisite regulatory approvals for our drugs, and our proposed drugs may not be approved for marketing.

We may encounter delays or rejections based on additional government regulation from future legislation or administrative action or changes in FDA policy during the period of development, clinical trials and FDA regulatory review. We may encounter similar delays in foreign countries. Sales of our products outside the U.S. would be subject to foreign regulatory approvals that vary from country to country. The time required to obtain approvals from foreign countries may be shorter or longer than that required for FDA approval, and requirements for foreign licensing may differ from FDA requirements. We may be unable to obtain requisite approvals from the FDA or foreign regulatory authorities, and even if obtained, such approvals may not be on a timely basis, or they may not cover the uses that we request.

Even if we do ultimately receive FDA approval for any of our products, these products will be subject to extensive ongoing regulation, including regulations governing manufacturing, labeling, packaging, testing, dispensing, prescription and procurement quotas, record keeping, reporting, handling, shipment and disposal of any such drug. Failure to obtain and maintain required registrations or to comply with any applicable regulations could further delay or preclude development and commercialization of our drugs and subject us to enforcement action.

Our drugs or technology may not gain FDA approval in clinical trials or be effective as a therapeutic agent, which could adversely affect our business and prospects.

In order to obtain regulatory approvals, we must demonstrate that each drug is safe and effective for use in humans and functions as a therapeutic against the effects of a disease or other physiological response. While we experienced positive preliminary results in an earlier stage trial in the U.S., there can be no assurance that we can demonstrate that these products are safe or effective in additional advanced clinical trials. We are also not able to give assurances that the positive results of certain of the preclinical tests already conducted can be repeated or that further testing will support our applications for regulatory approval. As a result, our drug and technology research program may be curtailed, redirected or eliminated at any time. If this occurs, it could increase the costs associated with our development activities, which may necessitate seeking additional funding beyond our current budget expectations, and we may have to cease our operations entirely.

There is no guarantee that we will ever generate substantial revenue or become profitable even if one or more of our drugs are approved for commercialization.

We expect to incur operating losses over the next several years as we continue to incur costs for research and development and clinical trials. Our ability to generate revenue and achieve profitability depends on our ability, alone or with others, to complete the development of, obtain required regulatory approvals for and manufacture, market and sell our proposed products. Development is costly and requires significant investment. In addition, if we choose to license or obtain the assignment of rights to additional drugs, the license fees for such drugs may increase our costs.

To date, we have not generated any revenue from the commercial sale of our proposed products or any drugs and do not expect to receive any such revenue in the near future. Our primary activity to date has been research and development. A substantial portion of the research results and observations on which we rely were performed by third parties at those parties' sole or shared cost and expense. We cannot be certain as to when or whether commercialization and marketing of our proposed products in development will occur, and we do not expect to generate sufficient revenues, from proposed product sales or otherwise, to cover our expenses or achieve profitability in the near future.

We rely on research and manufacturing facilities at various universities, hospitals, contract research organizations and contract manufacturers for a portion of our research, development, and manufacturing. In the event we lose access to those facilities, our ability to gain FDA approval and commercialization of our drug delivery technology and products could be delayed or impaired.

At the present time, we have limited research, development or manufacturing capabilities within our facilities. Our manufacturing facility in Madison, WI has adequate capacity to supply drug product for Phase 2 studies of HOT, but we will need to expand for larger Phase 3 studies. We are exploring scaling up production capacity of COLD, via contract manufacturers or at our facility, to support an IND filing and clinical trials. LIGHT is manufactured by our collaborator, University of Wisconsin at Madison. Therefore, we rely and expect to continue to rely, to some extent, on contracting with third parties to use their facilities to conduct research, development and manufacturing. The limited facilities of our own in which to conduct research, development and manufacturing may delay or impair our ability to gain FDA approval and commercialization of our drug delivery technology and products.

We may rely on third-party contract research organizations, service providers and suppliers to support development and clinical testing of our products. Failure of any of these contractors to provide the required services in a timely manner or on commercially reasonable terms could materially delay the development and approval of our products, increase our expenses and materially harm our business, financial condition and results of operations.

We believe that we have a good working relationship with our contractors. However, should the situation change, we may be required to relocate these activities on short notice, and we do not currently have access to alternate facilities to which we could relocate our research, development and/or manufacturing activities. The cost and time to establish or locate an alternate research, development and/or manufacturing facility to develop our technology would be substantial and would delay obtaining FDA approval and commercializing our products.

We are exposed to product, clinical and preclinical liability risks that could create a substantial financial burden should we be sued.

Our business exposes us to potential product liability and other liability risks that are inherent in the testing, manufacturing and marketing of pharmaceutical products. In addition, the use, in our clinical trials, of pharmaceutical products that we or our current or potential collaborators may develop and then subsequently sell may cause us to bear a portion of or all product liability risks. While we carry an insurance policy covering up to $5,000,000 per occurrence and $5,000,000 in the aggregate of liability incurred in connection with such claims should they arise, there can be no assurance that our insurance will be adequate to cover all situations. Moreover, there can be no assurance that such insurance, or additional insurance, if required, will be available in the future or, if available, will be available on commercially reasonable terms. Furthermore, our current and potential partners with whom we have collaborative agreements or our future licensees may not be willing to indemnify us against these types of liabilities and may not themselves be sufficiently insured or have a net worth sufficient to satisfy any product liability claims. A successful product liability claim or series of claims brought against us could have a material adverse effect on our business, financial condition and results of operations.

Acceptance of our products in the marketplace is uncertain and failure to achieve market acceptance will prevent or delay our ability to generate revenues.

Our future financial performance will depend, at least in part, on the introduction and customer acceptance of our proposed products. Even if approved for marketing by the necessary regulatory authorities, our products may not achieve market acceptance. The degree of market acceptance will depend on a number of factors including:

- receiving regulatory clearance of marketing claims for the uses that we are developing;
- establishing and demonstrating the advantages, safety and efficacy of our technologies;
- pricing and reimbursement policies of government and third-party payers such as insurance companies, health maintenance organizations and other health plan administrators;
- our ability to attract corporate partners, including pharmaceutical companies, to assist in commercializing our intended products; and
- our ability to market our products.

Physicians, patients, payers or the medical community in general may be unwilling to accept, use or recommend any of our products. If we are unable to obtain regulatory approval or commercialize and market our proposed products as planned, we may not achieve any market acceptance or generate revenue.

We may face litigation from third parties who claim that our products infringe on their intellectual property rights, particularly because there is often substantial uncertainty about the validity and breadth of medical patents.

We may be exposed to future litigation by third parties based on claims that our technologies, products or activities infringe on the intellectual property rights of others or that we have misappropriated the trade secrets of others. This risk is exacerbated by the fact that the validity and breadth of claims covered in medical technology patents and the breadth and scope of trade-secret protection involve complex legal and factual questions for which important legal principles are unresolved. Any litigation or claims against us, whether or not valid, could result in substantial costs, could place a significant strain on our financial and managerial resources and could harm our reputation. Most of our license agreements would likely require that we pay the costs associated with defending this type of litigation. In addition, intellectual property litigation or claims could force us to do one or more of the following:

- cease selling, incorporating or using any of our technologies and/or products that incorporate the challenged intellectual property, which would adversely affect our ability to generate revenue;
- obtain a license from the holder of the infringed intellectual property right, which license may be costly or may not be available on reasonable terms, if at all; or
- redesign our products, which would be costly and time-consuming.

If we are unable to protect or enforce our rights to intellectual property adequately or to secure rights to third-party patents, we may lose valuable rights, experience reduced market share, assuming any, or incur costly litigation to protect our intellectual property rights.

Our ability to obtain licenses to patents, maintain trade secret protection and operate without infringing the proprietary rights of others will be important to commercializing any products under development. Therefore, any disruption in access to the technology could substantially delay the development of our technology.

The patent positions of biotechnology and pharmaceutical companies, such as ours, that involve licensing agreements, are frequently uncertain and involve complex legal and factual questions. In addition, the coverage claimed in a patent application can be significantly reduced before the patent is issued or in subsequent legal proceedings. Consequently, our patent applications and any issued and licensed patents may not provide protection against competitive technologies or may be held invalid if challenged or circumvented. Our competitors may also independently develop products similar to ours or design around or otherwise circumvent patents issued or licensed to us. In addition, the laws of some foreign countries may not protect our proprietary rights to the same extent as U.S. law.

We also rely on trade secrets, technical know-how and continuing technological innovation to develop and maintain our competitive position. Although we generally require our employees, consultants, advisors and collaborators to execute appropriate confidentiality and assignment-of-inventions agreements, our competitors may independently develop substantially equivalent proprietary information and techniques, reverse engineer our information and techniques, or otherwise gain access to our proprietary technology. We may be unable to meaningfully protect our rights in trade secrets, technical know-how and other non-patented technology.

We may have to resort to litigation to protect our rights for certain intellectual property, or to determine their scope, validity or enforceability. Enforcing or defending our rights is expensive, could cause diversion of our resources and may not prove successful. Any failure to enforce or protect our rights could cause us to lose the ability to exclude others from using our technology to develop or sell competing products.

The use of hazardous materials, including radioactive materials, in our research and development imposes certain compliance costs on us and may subject us to liability for claims arising from the use or misuse of these materials.

Our research and development, manufacturing and administration of our drugs involves the controlled use of hazardous materials, including chemicals and radioactive materials, such as radioactive isotopes. We are subject to federal, state and local laws and regulations governing the storage, use and disposal of these materials and some waste products. We believe that our safety procedures for the storage, use and disposal of these materials comply with the standards prescribed by federal, state and local regulations. However, we cannot completely eliminate the risk of accidental contamination or injury from these materials. If there were to be an accident, we could be held liable for any damages that result, which could exceed our financial resources. We currently maintain insurance coverage for injuries resulting from the hazardous materials we use; however, future claims may exceed the amount of our coverage. Also, we do not have insurance coverage for pollution cleanup and removal. Currently the costs of complying with federal, state and local regulations are not significant, and consist primarily of waste disposal expenses. However, they could become expensive, and current or future environmental regulations may impair our research, development, production and commercialization efforts.

We have limited commercial manufacturing experience. Even if our products are approved for manufacture and sale by applicable regulatory authorities, we may not be able to manufacture sufficient quantities at an acceptable cost, and our contract manufacturers could experience shut-downs or delays.

We remain in the research and development and clinical and pre-clinical trial phase of product commercialization. Accordingly, if our products are approved for commercial sale, we will need to establish the capability to commercially manufacture our products in accordance with FDA and other regulatory requirements. We have limited experience in establishing, supervising and conducting commercial manufacturing. If we fail to adequately establish, supervise and conduct all aspects of the manufacturing processes, we may not be able to commercialize our products.

We presently plan to rely on third-party collaborators or contractors to manufacture some of our products. This may expose us to the risks of not being able to directly oversee the production and quality of the manufacturing process. Furthermore, these contractors, whether foreign or domestic, may experience regulatory compliance difficulties, mechanical shutdowns, employee strikes or other unforeseeable acts that may delay production.

Due to our limited marketing, sales and distribution experience, we may be unsuccessful in our efforts to sell our products, enter into relationships with third parties or develop a direct sales organization.

We have not established marketing, sales or distribution capabilities for our proposed products. Until such time as our products are further along in the development process, we will not devote any meaningful time and resources to this effort. At the appropriate time, we intend to develop our own sales and marketing capabilities or enter into agreements with third parties to sell our products.

We have limited experience in developing, training or managing a sales force. If we choose to establish a direct sales force, we may incur substantial additional expenses in developing, training and managing such an organization. We may be unable to build a sales force on a cost-effective basis or at all. Any such direct marketing and sales efforts may prove to be unsuccessful. In addition, we will compete with many other companies that currently have extensive marketing and sales operations. Our marketing and sales efforts may be unable to compete against these other companies. We may be unable to establish a sufficient sales and marketing organization on a timely basis, if at all.

If we choose to enter into agreements with third parties to sell our products, we may be unable to establish or maintain third-party relationships on a commercially reasonable basis, if at all. In addition, these third parties may have similar or more established relationships with our competitors.

We may be unable to engage qualified distributors. Even if engaged, these distributors may:

- fail to adequately market our products;
- fail to satisfy financial or contractual obligations to us;
- offer, design, manufacture or promote competing products; or
- cease operations with little or no notice.

If we fail to develop sales, marketing and distribution channels, we would experience delays in product sales and incur increased costs, which would harm our financial results.

If we are unable to convince physicians of the benefits of our intended products, we may incur delays or additional expense in our attempt to establish market acceptance.

Achieving broad use of our products may require physicians to be informed regarding these products and their intended benefits. The time and cost of such an educational process may be substantial. Inability to successfully carry out this physician education process may adversely affect market acceptance of our products. We may be unable to timely educate physicians regarding our intended products in sufficient numbers to achieve our marketing plans or to achieve product acceptance. Any delay in physician education may materially delay or reduce demand for our products. In addition, we may expend significant funds towards physician education before any acceptance or demand for our products is created, if at all.

The market for our products is rapidly changing and competitive, and new therapeutics, new drugs and new treatments that may be developed by others could impair our ability to maintain and grow our business and remain competitive.

The pharmaceutical and biotechnology industries are subject to rapid and substantial technological change. Developments by others may render our technologies and intended products noncompetitive or obsolete, or we may be unable to keep pace with technological developments or other market factors. Technological competition from pharmaceutical and biotechnology companies, universities, governmental entities and others diversifying into the field is intense and is expected to increase. Most of these entities have significantly greater research and development capabilities and budgets than we do, as well as substantially more marketing, manufacturing, financial and managerial resources. These entities represent significant competition for us. Acquisitions of, or investments in, competing pharmaceutical or biotechnology companies by large corporations could increase our competitors' financial, marketing, manufacturing and other resources.

We operate with limited day-to-day business management, serve as a vehicle to hold certain technology for possible future exploration, and have been and will continue to be engaged in the development of new drugs and therapeutic technologies. As a result, our resources are limited and we may experience management, operational or technical challenges inherent in such activities and novel technologies. Competitors have developed or are in the process of developing technologies that are, or in the future may be, the basis for competition. Some of these technologies may accomplish therapeutic effects similar to those of our technology, but through different means. Our competitors may develop drugs and drug delivery technologies that are more effective than our intended products and, therefore, present a serious competitive threat to us.

The potential widespread acceptance of therapies that are alternatives to ours may limit market acceptance of our products even if they are commercialized. Many of our targeted diseases and conditions can also be treated by other medication or drug delivery technologies. These treatments may be widely accepted in medical communities and have a longer history of use. The established use of these competitive drugs may limit the potential for our technologies and products to receive widespread acceptance if commercialized.

If users of our products are unable to obtain adequate reimbursement from third-party payers, or if new healthcare reform measures are adopted, it could hinder or prevent our product candidates' commercial success.

The continuing efforts of government and insurance companies, health maintenance organizations and other payers of healthcare costs to contain or reduce costs of health care may adversely affect our ability to generate future revenues and achieve profitability, including by limiting the future revenues and profitability of our potential customers, suppliers and collaborative partners. For example, in certain foreign markets, pricing or profitability of prescription pharmaceuticals is subject to government control. The U.S. government and other governments have shown significant interest in pursuing healthcare reform. Any government-adopted reform measures could adversely affect the pricing of healthcare products and services in the U.S. or internationally and the amount of reimbursement available from governmental agencies or other third-party payers. The continuing efforts of the U.S. and foreign governments, insurance companies, managed care organizations and other payers of healthcare services to contain or reduce health care costs may adversely affect our ability to set prices for our products, should we be successful in commercializing them, and this would negatively affect our ability to generate revenues and achieve and maintain profitability.

New laws, regulations and judicial decisions, or new interpretations of existing laws, regulations and decisions, that relate to healthcare availability, methods of delivery or payment for healthcare products and services, or sales, marketing or pricing of healthcare products and services, also may limit our potential revenue and may require us to revise our research and development programs. The pricing and reimbursement environment may change in the future and become more challenging for several reasons, including policies advanced by the current or future executive administrations in the U.S., new healthcare legislation or fiscal challenges faced by government health administration authorities. Specifically, in both the U.S. and some foreign jurisdictions, there have been a number of legislative and regulatory proposals to change the healthcare system in ways that could affect our ability to sell our products profitably. In the U.S., changes in federal healthcare policy were passed into law in 2010 and are being considered by Congress again this year. Some of these proposed reforms could result in reduced reimbursement rates for our product candidates, which would adversely affect our business strategy, operations and financial results.

Our ability to commercialize our products will depend in part on the extent to which appropriate reimbursement levels for the cost of our products and related treatment are obtained by governmental authorities, private health insurers and other organizations, such as health maintenance organizations (HMOs). Third-party payers are increasingly challenging the prices charged for medical drugs and services. Also, the trend toward managed health care in the U.S. and the concurrent growth of organizations such as HMOs that could control or significantly influence the purchase of healthcare services and drugs, as well as legislative proposals to reform health care or change government insurance programs, may all result in lower prices for or rejection of our drugs. The cost containment measures that healthcare payers and providers are instituting and the effect of any healthcare reform could materially harm our ability to operate profitably.

We depend on key personnel who may terminate their employment with us at any time, and our success will depend on our ability to hire additional qualified personnel.

Our success will depend to a significant degree on the continued services of our key management and advisors. There can be no assurance that these individuals will continue to provide service to us. Furthermore, as a result of the decline in stock price following the announcement of the negative results of our Phase 3 Trial, many of the stock options held by key employees and advisors have exercise prices in excess of current market prices, thus significantly diminishing their incentive effect. We may be required to restructure stock compensation arrangements in order to retain key management and advisors. In addition, our success may depend on our ability to attract and retain other highly skilled personnel. We may be unable to recruit such personnel on a timely basis, if at all. Our management and other employees may voluntarily terminate their employment with us at any time. The loss of services of key personnel, or the inability to attract and retain additional qualified personnel, could result in delays in development or approval of our products, loss of sales and diversion of management resources.

Compliance with changing corporate governance and public disclosure regulations may result in additional expense.

Keeping abreast of, and in compliance with, changing laws, regulations and standards relating to corporate governance, public disclosure and internal controls, including new SEC rules and regulations and, in the event we seek and are approved for listing on a registered national securities exchange, the stock exchange rules, will require an increased amount of management attention and external resources. We intend to continue to invest all resources reasonably necessary to comply with evolving standards, which may result in increased general and administrative expense and a diversion of management time and attention from revenue-generating activities to compliance activities.

In the time that our common stock has traded, its stock price has experienced price fluctuations.

There can be no assurance that the market price for our common stock will remain at its current level and a decrease in the market price could result in substantial losses for investors. The market price of our common stock may be significantly affected by one or more of the following factors:

- announcements or press releases relating to the biopharmaceutical sector or to our own business or prospects;
- regulatory, legislative, or other developments affecting us or the healthcare industry generally;
- sales by holders of restricted securities pursuant to effective registration statements or exemptions from registration; and
- market conditions specific to biopharmaceutical companies, the healthcare industry and the stock market generally.

There may be a limited public market for our securities; we presently fail to qualify for listing on any national securities exchanges.

Our common stock currently does not meet the requirements for initial listing on a registered stock exchange. Trading in our common stock continues to be conducted on the electronic bulletin board in the over-the-counter market and in what are commonly referred to as “pink sheets.” As a result, an investor may find it difficult to dispose of or to obtain accurate quotations as to the market value of our common stock, and our common stock may be less attractive for margin loans, for investment by financial institutions, as consideration in future capital raising transactions or other purposes.

Our common stock constitutes a “penny stock” under SEC rules, which may make it more difficult to resell shares of our common stock.

Our common stock constitutes a “penny stock” under applicable SEC rules. These rules impose additional sales practice requirements on broker-dealers that recommend the purchase or sale of penny stocks to persons other than those who qualify as “established customers” or “accredited investors.” For example, broker-dealers must determine the appropriateness for non-qualifying persons of investments in penny stocks and make special disclosures concerning the risks of investments in penny stocks.

Many brokerage firms will discourage or refrain from recommending investments in penny stocks. Most institutional investors will not invest in penny stocks. In addition, many individual investors will not invest in penny stocks due, among other reasons, to the increased financial risk generally associated with these investments. For these reasons, the fact that our common stock is a penny stock may limit the market for our common stock and, consequently, the liquidity of an investment in our common stock. We can give no assurance at what time, if ever, our common stock will cease to be a “penny stock.”

Our common stock could be further diluted as the result of the issuance of additional shares of common stock, convertible securities, warrants or options.

In the past, we have issued common stock, convertible securities, such as convertible preferred stock, and warrants in order to raise money. We have also issued options and warrants as compensation for services and incentive compensation for our employees and directors. We have shares of common stock reserved for issuance upon the conversion and exercise of these securities and may increase the shares reserved for these purposes in the future. Our issuance of additional common stock, convertible securities, options and warrants could affect the rights of our stockholders, could reduce the market price of our common stock or could result in adjustments to conversion or exercise prices of outstanding preferred stock and warrants (resulting in these securities becoming convertible into or exercisable for, as the case may be, a greater number of shares of our common stock), or could obligate us to issue additional shares of common stock to certain of our stockholders.

Item 2. Properties

We lease our executive office in Newton, Massachusetts. Our office consists of approximately 2,000 square feet and is rented for approximately $5,300 per month. This lease may be terminated by either party with one month notice. We anticipate that an extension on the lease will be available on terms that are acceptable to us.

We lease office, laboratory and manufacturing space in Madison, WI. The space consists of approximately 19,500 square feet and is rented for approximately $12,500 per month. The lease may be renewed for three-year periods with an increase of 3% in annual rent. We anticipate extending the lease to September 14, 2013.

We believe that our present facilities are adequate to meet our current needs. If new or additional space is required, we believe that adequate facilities are available at competitive prices.

Item 3. Legal Proceedings

A purported class action complaint was filed on March 5, 2010 in the U.S. District Court for the District of Massachusetts by an alleged shareholder of Novelos, on behalf of himself and all others who purchased or otherwise acquired our common stock in the period between December 14, 2009 and February 24, 2010, against Novelos and our President and Chief Executive Officer, Harry S. Palmin. On October 1, 2010, the court appointed lead plaintiffs (Boris Urman and Ramona Mc Donald) and appointed lead plaintiffs' counsel. On October 22, 2010, an amended complaint was filed. The amended complaint claims that we violated Section 10(b) of the Securities Exchange Act of 1934, as amended, and Rule 10b-5 promulgated thereunder in connection with alleged disclosures related to the Phase 3 clinical trial for NOV-002 in non-small cell lung cancer ("NSCLC") (the "Phase 3 Trial"). On December 6, 2010, we filed a motion to dismiss the complaint with prejudice. On January 20, 2011, the plaintiffs filed their opposition to our motion to dismiss and on March 3, 2011, we filed our response to their opposition. Our motion to dismiss remains pending. We believe the allegations are without merit and intend to defend vigorously against the allegations.

On June 28, 2010, we received a letter from counsel to ZAO BAM and ZAO BAM Research Laboratories (collectively, "BAM") alleging that we modified the chemical composition of NOV-002 without prior notice to or approval from BAM, constituting a material breach of a technology and assignment agreement we had entered into with BAM on June 20, 2000 (the "June 2000 Agreement"). The letter references our amendment, submitted to the FDA on August 30, 2005, to our investigational new drug application dated August 1999 as the basis for BAM's claims and demands the transfer of all intellectual property rights concerning NOV-002 to BAM. Mark Balazovsky, a director of Novelos from June 1996 until November 2006 and a shareholder of Novelos through at least June 25, 2010, is, to our knowledge, still the general director and principal shareholder of ZAO BAM. On September 24, 2010, we filed a complaint in Suffolk Superior Court seeking a declaratory judgment by the court that the June 2000 Agreement has been replaced by a subsequent agreement between the parties dated April 1, 2005 (the "April 2005 Agreement"), that the Company's obligations to BAM are governed solely by the April 2005 Agreement and that the obligations of the June 2000 agreement have been performed and fully satisfied. On November 29, 2010, BAM answered our complaint, denying the material allegations and stating its affirmative defenses and certain counterclaims. On January 14, 2011, we responded to the counterclaims, denying BAM's material allegations and stating our affirmative defenses. We believe the counterclaims are without merit and intend to defend vigorously against them.

PART II

Item 4. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

MARKET FOR COMMON EQUITY

Market Information

Our common stock has been quoted on the OTC Bulletin Board under the symbol "NVLT" since June 14, 2005. For twenty trading days following the Reverse Split, it will trade under the symbol "NVLTD". The following table provides, for the periods indicated, the high and low bid prices for our common stock. These over-the-counter market quotations reflect inter-dealer prices, without retail mark-up, mark-down or commission, and may not represent actual transactions.

Fiscal Year 2009	High	Low
First Quarter	$ 91.80	$ 45.90
Second Quarter	137.70	52.02
Third Quarter	149.94	87.21
Fourth Quarter	443.70	99.45

Fiscal Year 2010	High	Low
First Quarter	$ 466.65	$ 26.01
Second Quarter	42.84	15.30
Third Quarter	22.95	7.65
Fourth Quarter	9.18	3.06

The above share prices have been adjusted to reflect the 1-for-153 reverse split of our common stock completed April 8, 2011.

On April 8, 2011, following the Acquisition and April private placement, there were 234 holders of record of our common stock. This number does not include stockholders for whom shares were held in a "nominee" or "street" name.

We have not declared or paid any cash dividends on our common stock and do not anticipate declaring or paying any cash dividends in the foreseeable future. We currently expect to retain future earnings, if any, for the development of our business. During 2010, a total of approximately $635,000 in dividends was converted into shares of common stock in connection with the conversion of the associated shares of preferred stock. On November 30, 2010, all outstanding shares of preferred stock and all rights, preferences and privileges associated therewith (including but not limited to accrued but unpaid dividends thereon totaling approximately $4,476,000) and any rights of the holder to liquidated damages under agreements to register our capital stock, were exchanged for an aggregate of 340,935,801 shares of common stock (before giving effect to the 1-for-153 reverse split of our common stock).

Our transfer agent and registrar is American Stock Transfer and Trust Company, 59 Maiden Lane, New York, NY 10038.

Item 5. Management's Discussion and Analysis of Financial Condition and Results of Operations

Transaction with Cellectar

On April 8, 2011, we entered into a business combination with Cellectar (the "Acquisition"). Immediately prior to the Acquisition, we completed a 1-for-153 reverse split of our common stock (the "Reverse Split"). We then issued 17,001,596 shares of our common stock to the former shareholders of Cellectar as consideration for the Acquisition, constituting approximately 85% of our outstanding common stock after giving effect to the Acquisition. Upon the closing of the Acquisition, we completed the private placement of 6,846,537 shares of our common stock and warrants to purchase an additional 6,846,537 shares of our common stock (in each case after giving effect to the Reverse Split). As a result of the Acquisition, we are implementing a revised business plan focused on the development of the Cellectar compounds. The Company will conduct its operations from Cellectar's headquarters in Madison, WI and the Company's executive offices will remain in Newton, MA. Further development of Novelos' other compounds (NOV-002 and NOV-205) has been suspended pending further evaluation.

Overview

Prior to the Acquisition, we had been developing oxidized glutathione-based compounds for the treatment of cancer, including NOV-002, an injectable small-molecule compound based on a proprietary formulation of oxidized glutathione that we had been developing for use in combination with standard of care chemotherapies for the treatment of solid tumors, and NOV-205, a hepatoprotective agent with immunomodulating and anti-inflammatory properties. Following the Acquisition, development of NOV-002 and NOV-205 has been suspended.

As a result of the Acquisition, we are now developing novel drugs for the treatment and diagnosis of cancer based on the cancer-targeting technologies of Cellectar: CLR1401 ("COLD"), ^{131}I-CLR1404 ("HOT", a radiolabeled compound) and ^{124}I-CLR1404 ("LIGHT", labeled with a shorter-lived radioisotope, iodine-124).

COLD is a cancer-targeted chemotherapy that inhibits the phosphatidylinosotol 3-kinase (PI3K)/Akt survival pathway, which is overexpressed in many types of cancer. As a result, COLD selectively inhibits Akt activity, induces caspase-mediated apoptosis and inhibits cell proliferation in cancer cells versus normal cells. We believe COLD has the potential to be best-in-class versus other Akt inhibitors in development due to a) cancer cell/cancer stem cell targeting, resulting in cancer-selective inhibition of Akt and cell proliferation or b) suitability for intravenous administration which offers the prospect of greater systemic exposure and superior efficacy.

^{131}I-CLR1404 ("HOT", a radiolabeled compound) is a small-molecule, broad-spectrum, cancer-targeted radiopharmaceutical that we believe has first-in-class potential. HOT is comprised of a small quantity of COLD, acting as a cancer-targeted delivery and retention vehicle, and incorporating a cytotoxic dose of radiotherapy (in the form of iodine-131, a radioisotope that is already in common use to treat thyroid and other cancer types). It is this "intracellular radiation" mechanism of cancer cell killing that imbues HOT with broad-spectrum anti-cancer activity.

^{124}I-CLR1404 ("LIGHT", labeled with a shorter-lived radioisotope, iodine-124) is a small-molecule imaging agent that we believe has first-in-class potential in detecting and quantifying cancerous tumors and metastases. LIGHT is comprised of a small quantity of COLD, acting as a cancer-targeted delivery and retention vehicle, and incorporating ^{124}I, a new positron emission tomography (PET) imaging isotope. PET imaging used in conjunction with CT scanning has now become the imaging method of choice in oncology.

We believe these compounds are selectively taken up and retained in cancer cells (including cancer stem cells) versus normal cells. We believe our compounds directly kill cancer cells while minimizing harm to normal cells, offering the potential for a paradigm shift in cancer therapy – efficacy versus all three major drivers of mortality in cancer: primary tumors, metastases and stem cell-based relapse.

More specifically, we believe our technology enables targeted delivery to cancer cells of apoptosis-inducing Akt inhibition or, when a radioactive molecule is attached, of radiation sufficient to kill cancer cells. Other labeled variations of our compounds provide imaging agents for an accurate diagnosis of cancer, including metastases, and can also objectively measure therapeutic success. Together, this platform is capable of yielding multiple, distinct oncology product opportunities which enable us to "find, treat and follow" cancer anywhere in the body in a novel, highly selective way.

Results of Operations

Revenue. Revenue consists of the amortization of license fees received in connection with partner agreements.

Research and development expense. Research and development expense consists of costs incurred in identifying, developing and testing product candidates, which primarily consist of salaries and related expenses for personnel, fees paid to professional service providers for independent monitoring and analysis of our clinical trials, costs of contract research and manufacturing and costs to secure intellectual property. Prior to the Acquisition, we had been developing two proprietary compounds, NOV-002 and NOV-205. To date, most of our research and development costs have been associated with our NOV-002 compound. Following the Acquisition, development of these compounds has been suspended.

General and administrative expense. General and administrative expense consists primarily of salaries and other related costs for personnel in executive, finance and administrative functions. Other costs include facility costs, insurance, costs for public and investor relations, directors' fees and professional fees for legal and accounting services.

Years Ended December 31, 2010 and 2009

Revenue. During each of the years ended December 31, 2010 and 2009, we recognized $33,000 in license fees in connection with our collaboration agreement with Lee's Pharm.

Research and Development. Research and development expense for the year ended December 31, 2010 was $2,998,000, compared to $8,080,000 for the year ended December 31, 2009. The $5,082,000, or 63%, decrease in research and development expense was due to a combination of factors. In February 2010, we completed our Phase 3 trial in NSCLC. Following the completion of that trial, contract research costs related to the trial decreased $3,647,000 during 2010 as compared to 2009. This reduction in Phase 3 clinical research costs includes the effect of a $772,000 reduction in the accrual of estimated amounts owed to two large vendors, following negotiated payment settlements during 2010. Consulting costs related to preclinical and manufacturing work decreased by $1,198,000 in 2010 compared to 2009. In anticipation of the results of our Phase 3 clinical trial of NOV-002 in advanced NSCLC, announced in February 2010, we increased certain preclinical research and manufacturing activities in late 2009 in preparation of a possible filing of a new drug application during 2010. Stock-based compensation also decreased $467,000 as a result of the decline in our stock price following the Phase 3 trial results. Salaries and overhead costs decreased by $191,000 as a result of efforts to contain costs. These decreases were partially offset by a $421,000 increase in clinical development costs for NOV-205 as a result of the commencement, in March 2010, of a Phase 2 trial evaluating NOV-205 in chronic hepatitis patients.

General and Administrative. General and administrative expense for the year ended December 31, 2010 was $2,486,000 compared to $2,182,000 in the year ended December 31, 2009. The $304,000, or 14%, increase is due to a number of factors. First, professional fees increased by $255,000 principally due to increased corporate legal costs relating to the resale and registration of our securities and litigation-related costs. Overhead costs increased by $108,000 principally resulting from an increase in liability insurance premium costs. These increases were offset in part by a $59,000 decrease in stock-based compensation as a result of the decline in our stock price following the Phase 3 trial results.

Grant income. Qualifying therapeutic discovery projects, among others, include those designed to treat or prevent diseases or conditions by conducting pre-clinical or clinical activities for the purpose of securing FDA approval of a product. We received a cash grant during 2010 of approximately $245,000 from the U.S. Internal Revenue Service as a qualifying therapeutic discovery project credit pursuant to Patient Protection and Affordable Care Act. This grant has been recorded as a component of other income. During the year ended December 31, 2009, we recognized $63,000 in grant income related to a grant received from the U.S. Department of Health and Human Services. The related costs are included as a component of research and development expense in that period.

Gain (Loss) on Derivative Warrants. We recorded a gain on derivative warrants of $8,118,000 during the year ended December 31, 2010 and recorded a loss on derivative warrants of $12,114,000 in the year ended December 31, 2009. This amount represents the change in fair value, during the respective periods, of outstanding warrants which contain "down-round" anti-dilution provisions whereby the number of shares for which the warrants are exercisable and/or the exercise price of the warrants is subject to change in the event of certain issuances of stock at prices below the then-effective exercise prices of the warrants. The large decrease in the amount of the liability during 2010 is a result of the significant drop in our stock price following the announcement of negative Phase 3 Trial results on February 24, 2010. This gain is not taxable; accordingly, no tax provision has been recorded.

Liquidated Damages. During the year ended December 31, 2010, we had accrued $819,000 in estimated liquidated damages as a result of our failure to file, on a timely basis, a registration statement covering the resale of shares of common stock, and the shares of common stock underlying warrants, sold pursuant to the August 2009 purchase agreement with Purdue Pharma, L.P. However, in November 2010, all of our outstanding registration obligations were eliminated as part of an exchange of all shares of outstanding preferred stock for shares of common stock (see below and Note 6), the damages were settled and, accordingly, this accrual was reclassified to additional paid-in capital and is reflected as such at December 31, 2010.

Preferred Stock Dividends. During the years ended December 31, 2010 and 2009, we accrued $2,208,000 and $3,296,000, respectively, in dividends accumulating on our Series C, D and E preferred stock. No dividends were paid during those periods. On November 30, 2010, all shares of Series E Preferred Stock and Series C Preferred Stock, and all rights, preferences and privileges associated therewith (including but not limited to any accrued but unpaid dividends thereon) and any rights of the holder to liquidated damages under agreements to register the Company's capital stock, were exchanged for an aggregate of 340,935,801 shares of common stock. As a result of the exchange, all of the liquidation preference applicable to the preferred stock, approximately $27,337,000 (including dividends of $4,476,000) as of November 30, 2010, was eliminated and the accumulated dividends were reclassified to additional paid-in capital. On February 11, 2009, all shares of Series D preferred stock and accrued dividends thereon totaling $1,597,000 (including $202,000 that accrued during 2009 prior to the exchange) were exchanged for approximately 445.5 shares of Series E preferred stock.

During the year ended December 31, 2010 we recorded deemed dividends on preferred stock totaling $12,541,000. This amount includes a deemed dividend of $11,955,000 recorded in connection with the exchange of preferred stock for common stock on November 30, 2010 and represents the fair value at the date of issuance of the common shares issued in the exchange in excess of the common shares that would have been issuable had the preferred stock been converted in accordance with its terms. The deemed dividends recorded in 2010 also include $586,000 recorded in connection with the financing that occurred in July 2010 representing the fair value attributed to warrants that were issued to preferred stockholders in exchange for their consent for the July 2010 direct offering of common stock.

During the year ended December 31, 2009, we recorded deemed dividends on preferred stock totaling $714,000. This amount was recorded in connection with the financing that occurred in February 2009 and represents the value attributed to the modification of certain warrants less the net adjustment required to record the newly issued shares of Series E preferred stock at fair value.

Liquidity and Capital Resources

We have financed our operations since inception primarily via the sale of equity securities. In this period, we raised capital aggregating approximately $80 million, of which approximately $39 million was originally issued as preferred stock. On November 30, 2010, all of our outstanding preferred stock was converted into shares of common stock pursuant to an exchange agreement with each of the former holders of our preferred stock. As of December 31, 2010, we had approximately $2,373,000 in cash and equivalents.

During the year ended December 31, 2010, approximately $7,804,000 in cash was used in operations. During this period we reported $2,095,000 in net income. However, this included the following non-cash items: a $8,118,000 gain on derivative warrants, $337,000 in stock-based compensation and $35,000 in depreciation and amortization expense. In addition, we had accrued $819,000 in estimated liquidated damages for registration rights penalties during the year ended December 31, 2010, which was settled without any cash payment in the fourth quarter of such year in connection with an exchange of preferred stock for common stock. After adjustment for these non-cash items, we used $2,979,000 in cash for the payment of accounts payable and accrued liabilities. Other changes in working capital provided cash of $6,100.

During the year ended December 31, 2010, we received net proceeds of $1,249,000 from the sale of our common stock and warrants and received $159,000 upon the exercise of stock options.

On February 24, 2010, we announced that our Phase 3 clinical trial for NOV-002 in NSCLC (the "Phase 3 Trial") did not meet its primary endpoint of a statistically significant increase in median overall survival. On March 18, 2010, we announced that the secondary endpoints had also not been met in the Phase 3 Trial and that we had discontinued development of NOV-002 for NSCLC in combination with first-line paclitaxel and carboplatin chemotherapy.

On April 8, 2011, we entered into a business combination with Cellectar, Inc. ("Cellectar"), a privately held Wisconsin corporation that designed and developed products to detect, treat and monitor a wide variety of human cancers (the "Acquisition"). Immediately prior to the Acquisition, we completed a 1-for-153 reverse split of our common stock (the "Reverse Split"). We then issued 17,001,596 shares of our common stock to the former shareholders of Cellectar as consideration for the Acquisition, constituting approximately 85% of our outstanding common stock after giving effect to the Acquisition. Upon the closing of the Acquisition, we completed the private placement of 6,846,537 shares of our common stock and warrants to purchase an additional 6,846,537 shares of our common stock (in each case after giving effect to the Reverse Split) for gross proceeds of approximately $5,135,000. We paid cash advisory and placement agent fees in the aggregate amount of $650,000 in connection with these transactions. . As a result of the Acquisition, we are implementing a revised business plan focused on the development of the Cellectar compounds. Further development of Novelos' other compounds (NOV-002 and NOV-205) has been suspended pending further evaluation.

We expect that we will continue to generate operating losses for the foreseeable future. At December 31, 2010, our cash balance was $2,373,000. We believe our cash on hand, including the proceeds from the April private placement, is adequate to fund operations into the fourth quarter of 2011. Our ability to execute our operating plan beyond the fourth quarter of 2011 depends on our ability to obtain additional funding via the sale of equity and/or debt securities, a strategic transaction or otherwise. We plan to actively pursue financing alternatives, but there can be no assurance that we will obtain the necessary funding.

Critical Accounting Policies

The preparation of financial statements and related disclosures in conformity with accounting principles generally accepted in the U.S., or GAAP, requires management to make certain estimates, judgments and assumptions that affect the reported amounts of assets and liabilities as of the date of the financial statements, as well as the reported amounts of revenues and expenses during the periods presented. Actual results could differ from those estimates. We review these estimates and assumptions periodically and reflect the effects of revisions in the period that they are determined to be necessary.

We believe that the following accounting policies reflect our more significant judgments and estimates used in the preparation of our financial statements.

Accrued Liabilities. As part of the process of preparing financial statements, we are required to estimate accrued liabilities. This process involves identifying services that have been performed on our behalf, and estimating the level of service performed and the associated cost incurred for such service as of each balance sheet date in our financial statements. Examples of estimated expenses which we accrue include: contract service fees such as amounts paid to clinical research organizations and investigators in conjunction with clinical trials; fees paid to contract manufacturers in conjunction with the production of clinical materials; and professional service fees, such as for lawyers and accountants. In connection with such service fees, our estimates are most affected by our understanding of the status and timing of services provided relative to the actual levels of services incurred by such service providers. The majority of our service providers invoice us monthly in arrears for services performed. In the event that we do not identify certain costs that have begun to be incurred, or we over- or underestimate the level of services performed or the costs of such services, our reported expenses for such period would be too high or too low. The date on which certain services commence, the level of services performed on or before a given date and the cost of such services are often determined based on subjective judgments. We make these judgments based on the facts and circumstances known to us in accordance with GAAP.

Stock-based Compensation. We account for stock-based compensation in accordance with FASB ASC Topic 740, *Compensation, Stock Compensation* which requires measurement of the cost of employee services received in exchange for an award of equity instruments based on the grant-date fair value of the award. That cost is recognized over the period during which an employee is required to provide service in exchange for the award, the requisite service period (usually the vesting period). We account for transactions in which services are received from non-employees in exchange for equity instruments based on the fair value of such services received or of the equity instruments issued, whichever is more reliably measured, in accordance with the guidance of FASB ASC Topic 740 and FASB ASC Topic 505, *Equity*.

Accounting for equity instruments granted or sold by us under accounting guidance requires fair-value estimates of the equity instrument granted or sold. If our estimates of the fair value of these equity instruments are too high or too low, our expenses may be over- or understated. For equity instruments granted or sold in exchange for the receipt of goods or services, we estimate the fair value of the equity instruments based on consideration of factors that we deem to be relevant at that time.

Derivative Warrants. Starting January 1, 2009, certain warrants to purchase common stock that do not meet the requirements for classification as equity, in accordance with the Derivatives and Hedging Topic of the FASB ASC, are now classified as liabilities on our balance sheet. In such instances, net-cash settlement is assumed for financial reporting purposes, even when the terms of the underlying contracts do not provide for a net-cash settlement. These warrants are considered derivative instruments as the agreements contain “down-round” provisions whereby the number of shares for which the warrants are exercisable and/or the exercise price of the warrants is subject to change in the event of certain issuances of stock at prices below the then-effective exercise price of the warrants. The primary underlying risk exposure pertaining to the warrants is the change in fair value of the underlying common stock. Such financial instruments are initially recorded at fair value, or relative fair value when issued with other instruments, with subsequent changes in fair value recorded as a component of gain or loss on derivatives in each reporting period.

The fair value of the outstanding derivative warrants is estimated as of a reporting date. The Company uses valuation methods and assumptions that consider among others the fair value of the underlying stock, risk-free interest rate, volatility, expected life and dividend rates in estimating fair value for the warrants considered to be derivative instruments. We estimate volatility based on an average of our historical volatility and volatility estimates of publicly held drug development companies with similar market capitalizations. If our estimates of the fair value of these derivative warrants are too high or too low, our expenses may be over- or understated.

ITEM 6. FINANCIAL STATEMENTS

FINANCIAL STATEMENTS
INDEX TO FINANCIAL STATEMENTS FOR NOVELOS THERAPEUTICS, INC.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Stockholders and Board of Directors
Novelos Therapeutics, Inc.
Newton, Massachusetts

We have audited the accompanying balance sheets of Novelos Therapeutics, Inc. as of December 31, 2010 and 2009 and the related statements of operations, redeemable preferred stock and stockholders' equity (deficiency), and cash flows for the years then ended. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free of material misstatement. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. Our audit included consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion. An audit also includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of Novelos Therapeutics, Inc. as of December 31, 2010 and 2009 and the results of its operations, changes in redeemable preferred stock and stockholders' equity (deficiency), and cash flows for the years then ended in conformity with accounting principles generally accepted in the United States.

The accompanying financial statements have been prepared assuming that the Company will continue as a going concern. As discussed in Note 1 to the financial statements, the Company has generated insignificant revenues and has incurred continuing losses in the development of its products. These factors raise substantial doubt about the Company's ability to continue as a going concern. Management's plans in this regard are described in Note 1. The financial statements do not include any adjustments that might result from the outcome of this uncertainty.

/s/ Stowe & Degon LLC

Westborough, Massachusetts
April 11, 2011

NOVELOS THERAPEUTICS, INC.
BALANCE SHEETS

	December 31, 2010	December 31, 2009
ASSETS		
CURRENT ASSETS:		
Cash and equivalents	$ 2,372,951	$ 8,769,529
Prepaid expenses and other current assets	63,526	102,923
Total current assets	2,436,477	8,872,452
FIXED ASSETS, NET	8,755	44,097
DEPOSITS	15,350	15,350
TOTAL ASSETS	$ 2,460,582	$ 8,931,899
LIABILITIES, REDEEMABLE PREFERRED STOCK AND STOCKHOLDERS' DEFICIENCY		
CURRENT LIABILITIES:		
Accounts payable and accrued liabilities	$ 565,723	$ 3,299,217
Accrued compensation	—	245,711
Accrued dividends	—	2,902,963
Derivative liability (see Note 2)	288,250	10,486,594
Deferred revenue – current	33,333	33,333
Total current liabilities	887,306	16,967,818
DEFERRED REVENUE – NONCURRENT	366,667	400,000
COMMITMENTS AND CONTINGENCIES		
REDEEMABLE PREFERRED STOCK:		
Series E convertible preferred stock, $0.00001 par value; 735 shares designated, 0 and 548.26078125 shares issued and outstanding at December 31, 2010 and 2009, respectively (see Note 6)	—	18,459,619
STOCKHOLDERS' EQUITY (DEFICIENCY):		
Preferred Stock, $0.00001 par value; 7,000 shares authorized: Series C 8% cumulative convertible preferred stock; 272 shares designated; 0 and 204 issued and outstanding at December 31, 2010 and 2009, respectively	—	—
Common stock, $0.00001 par value; 750,000,000 shares authorized; 452,866,983 and 69,658,002 shares issued and outstanding at December 31, 2010 and 2009, respectively	4,529	697
Additional paid-in capital	75,178,776	49,175,853
Accumulated deficit	(73,976,696)	(76,072,088)
Total stockholders' equity (deficiency)	1,206,609	(26,895,538)
TOTAL LIABILITIES, REDEEMABLE PREFERRED STOCK AND STOCKHOLDERS' EQUITY (DEFICIENCY)	$ 2,460,582	$ 8,931,899

See report of independent registered public accounting firm and notes to financial statements.

Share totals do not give pro forma effect to the 1-for-153 reverse split of our common stock completed on April 8, 2011.

NOVELOS THERAPEUTICS, INC.
STATEMENTS OF OPERATIONS

	Year Ended December 31,	
	2010	**2009**
REVENUES	$ 33,334	$ 33,334
COSTS AND EXPENSES:		
Research and development	2,997,984	8,080,242
General and administrative	2,486,032	2,182,253
Total costs and expenses	5,484,016	10,262,495
LOSS FROM OPERATIONS	(5,450,682)	(10,229,161)
OTHER INCOME (EXPENSE):		
Interest income	2,421	1,013
Grant income	244,479	62,980
Gain (loss) on derivative warrants (see Note 2)	8,118,174	(12,114,371)
Liquidated damages (see Note 6)	(819,000)	—
Miscellaneous	—	6,233
Total other income (expense)	7,546,074	(12,044,145)
NET INCOME (LOSS)	2,095,392	(22,273,306)
PREFERRED STOCK DIVIDENDS	(2,207,827)	(3,296,289)
PREFERRED STOCK DEEMED DIVIDENDS	(12,541,201)	(714,031)
NET LOSS ATTRIBUTABLE TO COMMON STOCKHOLDERS	$ (12,653,636)	$ (26,283,626)
BASIC AND DILUTED NET LOSS ATTRIBUTABLE TO COMMON STOCKHOLDERS PER COMMON SHARE	$ (0.10)	$ (0.53)
SHARES USED IN COMPUTING BASIC AND DILUTED NET LOSS ATTRIBUTABLE TO COMMON STOCKHOLDERS PER COMMON SHARE	126,061,735	49,910,010

See report of independent registered public accounting firm and notes to financial statements.

Share totals and share-based calculations do not give pro forma effect to the 1-for-153 reverse split of our common stock completed on April 8, 2011.

NOVELOS THERAPEUTICS, INC.
STATEMENTS OF REDEEMABLE PREFERRED STOCK AND STOCKHOLDERS' EQUITY (DEFICIENCY)

	REDEEMABLE PREFERRED STOCK Series D and E Convertible Preferred Stock		Common Stock		Series C Cumulative Convertible Preferred Stock		Additional Paid-in Capital	Accumulated Deficit	Total Stockholders' Equity (Deficiency)
	Shares	Amount	Shares	Par Amount	Shares	Par Amount			
BALANCE AT JANUARY 1, 2009	413.5	$ 13,904,100	43,975,656	$ 440	272	$ —	$ 40,204,112	$ (59,693,153)	$ (19,488,601)
Reclassification of warrants to derivative liability (see Note 2)	—	—	—	—	—	—	(6,893,316)	5,894,371	(998,945)
Conversion of Series C convertible preferred stock and accumulated dividends into common stock	—	—	1,538,837	15	(68)	—	184,231	—	184,246
Conversion of Series E convertible preferred stock and accumulated dividends into common stock	(97.18209375)	(3,213,056)	7,939,008	79	—	—	3,514,235	—	3,514,314
Cashless exercise of warrants	—	—	483,829	5	—	—	1,000,957	—	1,000,962
Issuance of common stock in exchange for warrants	—	—	2,084,308	21	—	—	1,625,739	—	1,625,760
Issuance of common stock and warrants in a private placement, net of issuance costs of $61,116	—	—	13,636,364	137	—	—	8,938,747	—	8,938,884
Compensation expense associated with options issued to employees	—	—	—	—	—	—	437,066	—	437,066
Compensation expense associated with options issued to non-employees	—	—	—	—	—	—	427,271	—	427,271
Issuance of Series E redeemable convertible preferred stock and warrants, net of issuance costs of $795,469	200	6,297,323	—	—	—	—	2,907,208	—	2,907,208
Issuance of Series E redeemable convertible preferred stock in payment of accumulated dividends	31.942875	1,597,144	—	—	—	—	—	—	—
Adjustment to record the carrying value of Series E redeemable convertible preferred stock at fair value on the date of sale	—	(125,892)	—	—	—	—	125,892	—	125,892
Fair value of the extension of expiration date of warrants	—	—	—	—	—	—	839,923	—	839,923
Accretion of deemed dividend associated with the extension of expiration date of warrants	—	—	—	—	—	—	(839,923)	—	(839,923)
Dividends accrued on preferred stock	—	—	—	—	—	—	(3,296,289)	—	(3,296,289)
Net loss	—	—	—	—	—	—	—	(22,273,306)	(22,273,306)
BALANCE AT DECEMBER 31, 2009	548.26078125	18,459,619	69,658,002	697	204	—	49,175,853	(76,072,088)	(26,895,538)
Exercise of stock options	—	—	916,667	9	—	—	158,558	—	158,567
Conversion of Series E convertible preferred stock and accumulated dividends into common stock	(139.99673625)	(4,689,593)	11,745,779	117	—	—	5,324,401	—	5,324,518
Cashless exercise of warrants	—	—	8,182,158	82	—	—	2,584,315	—	2,584,397
Compensation expense associated with options issued to employees	—	—	—	—	—	—	586,321	—	586,321
Compensation expense (benefit) associated with options issued to non-employees	—	—	—	—	—	—	(249,023)	—	(249,023)
Issuance of common stock and warrants in a public offering (net of issuance costs of $250,862)	—	—	21,428,576	214	—	—	744,697	—	744,911
Fair value of warrants issued to preferred shareholders	—	—	—	—	—	—	586,050	—	586,050
Accretion of deemed dividend associated with the issuance of warrants to preferred stockholders	—	—	—	—	—	—	(586,050)	—	(586,050)
Exchange of preferred stock and dividends for common stock	(408.264045)	(13,770,026)	340,935,801	3,410	(204)	—	19,061,481	—	19,064,891
Fair value of incremental shares issued to preferred stockholders in connection with exchange of preferred stock for common stock	—	—	—	—	—	—	11,955,151	—	11,955,151
Accretion of deemed dividend associated with the incremental shares of common stock issued in connection with the exchange of preferred stock	—	—	—	—	—	—	(11,955,151)	—	(11.955,151)
Dividends accrued on preferred stock	—	—	—	—	—	—	(2,207,827)	—	(2,207,827)
Net income	—	—	—	—	—	—	—	2,095,392	2,095,392
BALANCE AT DECEMBER 31, 2010	—	$ —	452,866,983	$ 4,529	—	$ —	$ 75,178,776	$ (73,976,696)	$ 1,206,609

See report of independent registered public accounting firm and notes to financial statements.

Share totals do not give pro forma effect to the 1-for-153 reverse split of our common stock completed on April 8, 2011.

NOVELOS THERAPEUTICS, INC.
STATEMENTS OF CASH FLOWS

	Year Ended December 31,	
	2010	**2009**
CASH FLOWS FROM OPERATING ACTIVITIES:		
Net income (loss)	$ 2,095,392	$ (22,273,306)
Adjustments to reconcile net income (loss) to cash used in operating activities:		
Depreciation and amortization	35,342	32,354
Stock-based compensation	337,298	864,337
(Gain) loss on derivative warrants	(8,118,174)	12,114,371
Non-cash settlement of liquidated damages	819,000	—
Changes in:		
Prepaid expenses and other current assets	39,397	26,862
Accounts payable and accrued liabilities	(2,733,494)	(1,354,695)
Accrued compensation	(245,711)	5,072
Deferred revenue	(33,333)	(33,333)
Cash used in operating activities	(7,804,283)	(10,618,338)
CASH FLOWS FROM INVESTING ACTIVITIES:		
Purchases of fixed assets	—	(18,000)
Cash used in investing activities	—	(18,000)
CASH FLOWS FROM FINANCING ACTIVITIES:		
Proceeds from issuance of common stock, net	1,249,138	8,938,884
Proceeds from issuance of Series E convertible preferred stock and warrants, net	—	9,204,531
Proceeds from exercise of stock options	158,567	—
Cash provided by financing activities	1,407,705	18,143,415
INCREASE (DECREASE) IN CASH AND EQUIVALENTS	(6,396,578)	7,507,077
CASH AND EQUIVALENTS AT BEGINNING OF YEAR	8,769,529	1,262,452
CASH AND EQUIVALENTS AT END OF YEAR	$ 2,372,951	$ 8,769,529
SUPPLEMENTAL DISCLOSURES OF NON-CASH FINANCING ACTIVITIES		
Dividends accumulated on shares of Series E preferred stock exchanged for or converted into shares of common stock	$ 5,110,790	$ 1,898,402
Dividends accumulated on shares of Series C preferred stock converted into shares of common stock	$ —	$ 184,246
Fair value of derivative warrants upon adoption of new accounting principle	$ —	$ 998,945
Fair value of common stock issued in exchange for tender of derivative warrants	$ —	$ 1,625,760
Fair value of derivative warrants upon cashless exercise	$ 2,584,397	$ 1,000,962
Exchange of Series D for Series E preferred stock	$ —	$ 13,904,100
Relative fair value of warrants issued to stockholders	$ 504,227	$ 4,835,727

See report of independent registered public accounting firm and notes to financial statements.

1. NATURE OF BUSINESS, ORGANIZATION AND GOING CONCERN

Novelos Therapeutics, Inc. (“Novelos” or the ”Company”) is a biopharmaceutical company developing compounds for the treatment of cancer.

On April 8, 2011, the Company entered into a business combination with Cellectar, Inc. (“Cellectar”), a privately held Wisconsin corporation that designed and developed products to detect, treat and monitor a wide variety of human cancers (the “Acquisition”, see Note 12). Immediately prior to the Acquisition, the Company completed a 1-for-153 reverse split of its common stock (the “Reverse Split”). The Copmany then issued 17,001,596 shares of its common stock to the former shareholders of Cellectar as consideration for the Acquisition, constituting approximately 85% of Novelos’ outstanding common stock after giving effect to the Acquisition. Upon the closing of the Acquisition, the Company completed the private placement of 6,846,537 shares of its common stock and warrants to purchase an additional 6,846,537 shares of its common stock (in each case after giving effect to the Reverse Split) for gross proceeds of approximately $5,135,000. As a result of the Acquisition, the Company is implementing a revised business plan focused on the development of the Cellectar compounds. Development of Novelos’ other compounds (NOV-002 and NOV-205) has been suspended.

The Company is subject to a number of risks similar to those of other small biopharmaceutical companies. Principal among these risks are dependence on key individuals, competition from substitute products and larger companies, the successful development and marketing of its products in a highly regulated environment and the need to obtain additional financing necessary to fund future operations.

On February 24, 2010, the Company announced that its Phase 3 clinical trial for NOV-002 in non-small cell lung cancer (the “Phase 3 Trial”) did not meet its primary endpoint of a statistically significant increase in median overall survival. Following evaluation of the detailed trial data, on March 18, 2010, the Company announced that the secondary endpoints had also not been met in the Phase 3 Trial and that it had discontinued development of NOV-002 for NSCLC in combination with first-line paclitaxel and carboplatin chemotherapy.

These financial statements have been prepared on the basis that the Company will continue as a going concern. The Company has generated insignificant revenues and has incurred operating losses since inception in devoting substantially all of its efforts toward research and development. The Company expects that it will continue to generate operating losses for the foreseeable future. The Company believes that its cash on hand at December 31, 2010, plus the proceeds from the private placement completed in connection with the Acquisition, is adequate to fund operations into the fourth quarter of 2011. The Company’s ability to execute its operating plan beyond the fourth quarter of 2011 depends on its ability to obtain additional funding via the sale of equity and/or debt securities, a strategic transaction or otherwise. The Company plans to continue to actively pursue financing alternatives, but there can be no assurance that it will obtain the necessary funding.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

The accompanying financial statements reflect the application of certain accounting policies, as described in this note and elsewhere in the accompanying notes to the financial statements.

Use of Estimates — The preparation of financial statements in conformity with accounting principles generally accepted in the United States requires the Company’s management to make estimates and judgments that may affect the reported amounts of assets, liabilities, revenue and expenses and disclosure of contingent assets and liabilities. On an on-going basis, the Company’s management evaluates its estimates including those related to unbilled research and development costs, valuation of derivatives and share-based compensation. The Company bases its estimates on historical experience and on various other assumptions that are believed to be reasonable, the results of which form the basis for making judgments about the carrying values of assets and liabilities. Actual results may differ from those estimates under different assumptions or conditions. Changes in estimates are reflected in reported results in the period in which they become known.

Cash Equivalents — The Company considers all short-term investments purchased with original maturities of three months or less to be cash equivalents.

Fixed Assets — Property and equipment are stated at cost. Depreciation on property and equipment is provided using the straight-line method over the estimated useful lives of the assets, which range from three to five years. Leasehold improvements are depreciated over the lesser of the estimated useful lives of the assets or the remaining lease term.

Impairment of Long-Lived Assets — Whenever events or circumstances change, the Company assesses whether there has been an impairment in the value of long-lived assets by determining whether projected undiscounted cash flows generated by the applicable asset exceed its net book value as of the assessment date. There were no impairments of the Company's assets at the end of each period presented.

Stock-Based Compensation — The Company accounts for employee stock-based compensation in accordance with the guidance of FASB ASC Topic 718, *Compensation – Stock Compensation* which requires all share-based payments to employees, including grants of employee stock options, to be recognized in the financial statements based on their fair values. The Company accounts for non-employee stock-based compensation in accordance with the guidance of FASB ASC Topic 505, *Equity* which requires that companies recognize compensation expense based on the estimated fair value of options granted to non-employees over their vesting period, which is generally the period during which services are rendered by such non-employees.

Revenue Recognition — Revenue is recognized when persuasive evidence of an arrangement exists, the price is fixed and determinable, delivery has occurred, and there is reasonable assurance of collection. Upfront payments received in connection with technology license or collaboration agreements are recognized over the estimated term of the related agreement. The Company has not yet received milestone or royalty payments in connection with license or collaboration agreements.

Research and Development — Research and development costs are expensed as incurred.

Income Taxes — The Company uses the liability method of accounting for income taxes. Under this method, deferred tax assets and liabilities are determined based on temporary differences between the financial statement and tax basis of assets and liabilities and net operating loss and credit carryforwards using enacted tax rates in effect for the year in which the differences are expected to reverse. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in income in the period that includes the enactment date. Valuation allowances are established when it is more likely than not that some portion of the deferred tax assets will not be realized. Tax positions taken or expected to be taken in the course of preparing the Company's tax returns are required to be evaluated to determine whether the tax positions are "more likely than not" of being sustained by the applicable tax authority. Tax positions deemed not to meet a more-likely-than-not threshold would be recorded as tax expense in the current year. There were no uncertain tax positions that require accrual or disclosure to the financial statements as of December 31, 2010 and 2009.

Comprehensive Income (Loss) — The Company had no components of comprehensive income other than net income (loss) in all of the periods presented.

Fair Value of Financial Instruments — The guidance under FASB ASC Topic 825, *Financial Instruments* , requires disclosure of the fair value of certain financial instruments. The Company's financial instruments consist of cash equivalents, accounts payable, accrued expenses and redeemable preferred stock. The estimated fair value of the redeemable preferred stock, determined on an as-converted basis including conversion of accumulated unpaid dividends, was $114,780,000 at December 31, 2009. The estimated fair value of the remaining financial instruments approximates their carrying value due to their short-term nature.

Concentration of Credit Risk — Financial instruments that subject the Company to credit risk consist of cash and equivalents on deposit with financial institutions. The Company's excess cash is on deposit in an overnight investment account that is fully collateralized by government-backed obligations.

Derivative Instruments — The Company generally does not use derivative instruments to hedge exposures to cash flow or market risks; however, starting January 1, 2009, certain warrants to purchase common stock that do not meet the requirements for classification as equity, in accordance with the Derivatives and Hedging Topic of the FASB ASC, are classified as liabilities. In such instances, net-cash settlement is assumed for financial reporting purposes, even when the terms of the underlying contracts do not provide for a net-cash settlement. These warrants are considered derivative instruments as the agreements contain "down-round" provisions whereby the number of shares for which the warrants are exercisable and/or the exercise price of the warrants is subject to change in the event of certain issuances of stock at prices below the then-effective exercise price of the warrants. The number of such warrants was 14,003,319 at January 1, 2009, 7,418,893 at December 31, 2009 and 21,207,625 at December 31, 2010. The primary underlying risk exposure pertaining to the warrants is the change in fair value of the underlying common stock. Such financial instruments are initially recorded at fair value, or relative fair value when issued with other instruments, with subsequent changes in fair value recorded as a component of gain or loss on derivatives in each reporting period. If these instruments subsequently meet the requirements for equity classification, the Company reclassifies the fair value to equity. At December 31, 2010 and 2009, these warrants represent the only outstanding derivative instruments issued or held by the Company. As a result of the significant decline in the Company's stock price following the announcement of the results of the Phase 3 Trial, the Company recorded a gain of approximately $8,118,000 during the year ended December 31, 2010 in connection with the revaluation of the derivative liability balance at December 31, 2010.

New Accounting Pronouncements — In September 2009, the Financial Accounting Standards Board ("FASB") amended the accounting standards related to revenue recognition for arrangements with multiple deliverables and arrangements that include software elements ("new accounting principles"). The new accounting principles permit prospective or retrospective adoption, and the Company elected prospective adoption at the beginning of the first quarter of 2010. The adoption of the standard in 2010 had no impact on the Company's financial statements.

In January 2010, the FASB issued ASU No. 2010-06, *Improving Disclosures about Fair Value Measurements*, which requires additional disclosures about the amounts of and reasons for significant transfers in and out of Level 1 and Level 2 fair value measurements. This standard also clarifies existing disclosure requirements related to the level of disaggregation of fair value measurements for each class of assets and liabilities and disclosures about inputs and valuation techniques used to measure fair value for both recurring and non-recurring Level 2 and Level 3 measurements. Since this new accounting standard only required additional disclosure, the adoption of the standard in the first quarter of 2010 did not impact the Company's financial statements. Additionally, effective for interim and annual periods beginning after December 15, 2010, this standard will require additional disclosure and require an entity to present disaggregated information about activity in Level 3 fair value measurements on a gross basis, rather than one net amount.

Adoption of New Accounting Principle — Effective January 1, 2009, the Company adopted the guidance of FASB ASC 815-40-15, *Derivatives and Hedging* , which establishes a framework for determining whether certain freestanding and embedded instruments are indexed to a company's own stock for purposes of evaluation of the accounting for such instruments under existing accounting literature. As a result of this adoption, certain warrants that were previously determined to be indexed to the Company's common stock upon issuance were determined not to be indexed to the Company's common stock because they include "down-round" anti-dilution provisions whereby the number of shares for which the warrants are exercisable and/or the exercise price of the warrants is subject to change in the event of certain issuances of stock at prices below the then-effective exercise price of the warrants. The fair value of the warrants at the dates of issuance totaling $6,893,000 was initially recorded as a component of additional paid-in capital. Upon adoption of this guidance on January 1, 2009, the Company recorded a derivative liability of $999,000, a decrease to the opening balance of additional paid-in capital of approximately $6,893,000 and recorded a decrease to accumulated deficit totaling approximately $5,894,000, representing the decrease in the fair value of the warrants from the date of issuance to December 31, 2008. The increase in fair value of the warrants of approximately $12,114,000 during the year ended December 31, 2009 and the decrease in fair value of the warrants of $8,118,000 during the year ended December 31, 2010 have been included as a component of other income (expense) in the accompanying statement of operations. Certain of the warrants that had been recorded as a derivative liability were exchanged or exercised for shares of the Company's common stock during the years ended December 31, 2010 and 2009. See Note 6 for a description of those transactions. The fair value of the warrants of $288,000 and $10,487,000 at December 31, 2010 and 2009 is included as a current liability in the accompanying balance sheet as of that date.

Reclassifications — Certain prior year amounts have been reclassified to conform to the current year presentation.

3. FIXED ASSETS

Fixed assets consisted of the following at December 31:

	2010	2009
Office and computer equipment	$ 61,907	$ 73,261
Computer software	43,896	43,896
Leasehold improvements	4,095	4,095
Total fixed assets	109,898	121,252
Less accumulated depreciation and amortization	(101,143)	(77,155)
Fixed assets, net	**$** 8,755	**$** 44,097

4. FAIR VALUES OF ASSETS AND LIABILITIES

In accordance with Fair Value Measurements and Disclosures Topic of the FASB ASC, the Company groups its financial assets and financial liabilities generally measured at fair value in three levels, based on the markets in which the assets and liabilities are traded and the reliability of the assumptions used to determine fair value.

- Level 1: Input prices quoted in an active market for identical financial assets or liabilities.
- Level 2: Inputs other than prices quoted in Level 1, such as prices quoted for similar financial assets and liabilities in active markets, prices for identical assets and liabilities in markets that are not active or other inputs that are observable or can be corroborated by observable market data.
- Level 3: Input prices that are significant to the fair value of the financial assets or liabilities which are not observable or supported by an active market.

Assets and liabilities measured at fair value on a recurring basis are summarized below:

	December 31, 2010			
	Level 1	Level 2	Level 3	Fair Value
Liabilities:				
Warrants	$ -	$ 288,250	$ -	$ 288,250

	December 31, 2009			
	Level 1	Level 2	Level 3	Fair Value
Liabilities:				
Warrants	$ -	$ 10,487,000	$ -	$ 10,487,000

The Company uses valuation methods and assumptions that consider among others the fair value of the underlying stock, risk-free interest rate, volatility, expected life and dividend rates in estimating fair value for the warrants considered to be derivative instruments. Assumptions used are generally consistent with those disclosed for stock-based compensation (see Note 7).

5. COLLABORATION AGREEMENTS

2007 Collaboration Agreement with Lee's Pharmaceutical (HK) Ltd.

In December 2007 the Company entered into a Collaboration Agreement with Lee's Pharmaceutical (HK) Ltd. ("Lee's Pharm"). Pursuant to this agreement, Lee's Pharm obtained an exclusive license to develop, manufacture and commercialize NOV-002 and NOV-205 in China, Hong Kong, Taiwan and Macau (the "Chinese Territory"). The Company has suspended further development of NOV-205; however, this suspension may not impact the development strategy of Lee's Pharm. Under the terms of the agreement the Company received a license fee of $500,000 in March 2008 and is entitled to receive up to $1,700,000 in future milestone payments upon the completion of development and marketing milestones by Lee's Pharm. This initial $500,000 payment received is being amortized over the estimated term of this agreement, 15 years. Accordingly, $33,000 of license revenue was recognized in each of the years ended December 31, 2010 and 2009.

The Lee's Pharm agreement provides that the Company receive royalty payments of 20-25% of net sales of NOV-002 in the Chinese Territory and receive royalty payments of 12-15% of net sales of NOV-205 in the Chinese Territory. Lee's Pharm is obligated to reimburse the Company for the manufacturing cost of pharmaceutical products provided to Lee's Pharm in connection with the agreement. Lee's Pharm has committed to spend a minimum amount on development in the first four years of the agreement. The agreement expires upon the expiration of the last patent covering any of the licensed products, or twelve years from the date of the first commercial sale in China, whichever occurs later.

2009 Collaboration Agreement with Mundipharma

On February 11, 2009, Novelos entered into a collaboration agreement (the "Collaboration Agreement") with Mundipharma International Corporation Limited ("Mundipharma") to develop, manufacture and commercialize, on an exclusive basis, Licensed Products (as defined in the Collaboration Agreement), which includes the Company's lead compound, NOV-002, in Europe (other than the Russian Territory), Asia (other than the Chinese Territory) and Australia (collectively referred to as the "Mundipharma Territory"). Mundipharma is an independent associated company of Purdue Pharma, L.P. ("Purdue"). The Collaboration Agreement provides for Mundipharma to pay the Company royalties and fixed milestone payments based on sales and commercial launches in the licensed territories.

For countries in which patents are held, the Collaboration Agreement expires on a country-by-country basis within the Mundipharma Territory on the earlier of (1) expiration of the last applicable Novelos patent within the country or (2) the determination that any patents within the country are invalid, obvious or otherwise unenforceable. For countries in which no patents are held, the Collaboration Agreement expires the earlier of 15 years from its effective date or upon generic product competition in the country resulting in a 20% drop in Mundipharma's market share. Novelos may terminate the Collaboration Agreement upon breach or default by Mundipharma. Mundipharma may terminate the Collaboration Agreement upon breach or default, filing of voluntary or involuntary bankruptcy by Novelos, the termination of certain agreements with companies associated with the originators of the licensed technology, or 30-day notice for no reason. If any regulatory approval within the Mundipharma Territory is suspended as a result of issues related to the safety of the Licensed Products, then Mundipharma's obligations under the Collaboration Agreement will be suspended until the regulatory approval is reinstated. If that reinstatement does not occur within 12 months of the suspension, then Mundipharma may terminate the Collaboration Agreement.

Concurrently with the execution of the Collaboration Agreement, Novelos completed a private placement of Series E preferred stock and common stock purchase warrants to Purdue.

The Company expects that the negative results of its Phase 3 Trial will adversely affect development and commercialization of NOV-002 under the collaboration agreements with Lee's Pharm and Mundipharma.

6. STOCKHOLDERS' DEFICIENCY

Reverse Stock Split

None of the disclosures in these financial statements and notes have been adjusted to give effect to the Reverse Split described in Notes 1 and 12.

Exchange of Outstanding Preferred Stock for Common Stock

On November 30, 2010, the Company entered into an Exchange Agreement with each of the holders of its Series E convertible preferred stock (the "Series E Preferred Stock") and Series C convertible preferred stock (the "Series C Preferred Stock") pursuant to which each such holder exchanged all of the holder's shares of Series E Preferred Stock or Series C Preferred Stock, as applicable, and all rights, preferences and privileges associated therewith (including but not limited to any accrued but unpaid dividends thereon) and any rights of the holder to liquidated damages under agreements to register the Company's capital stock, for an aggregate of 340,935,801 shares of common stock, representing 75.3% of the Company's common stock outstanding effective immediately following the exchange. As a result of the exchange, all of the liquidation preference applicable to the preferred stock, approximately $27,337,000 as of November 30, 2010, was eliminated. Furthermore, future dividends totaling $2,327,000 annually were eliminated, special voting rights applicable to the preferred stock are no longer applicable, and the former holders of Series E Preferred Stock have released any rights to require the registration of shares of the Company's common stock for resale under the Securities Act. The effective price per share at which the common stock was issued in connection with the exchange (based on the aggregate liquidation preference of all of the preferred stock divided by the total number of shares of common stock issued in exchange for such preferred stock) was approximately $0.08. The market price of the Company's common stock as of the last trading day immediately preceding the exchange was $0.04.

The exchange was accounted for as a recapitalization and the carrying value of the Series E Preferred Stock of $13,770,000, accumulated dividends totaling $4,476,000 and estimated liquidated damages of $819,000 for failure to timely file a resale registration statement (see "Registration Rights" below) were reclassified to additional paid-in-capital as of the date of the exchange. If the preferred stock had been converted according to its terms, the holders would have received a total of 42,057,026 shares of common stock. At the date of issuance the fair market value totaling $11,955,151 of the additional 298,878,775 shares issued in the exchange has been recorded as a deemed dividend to preferred stockholders in the year ended December 31, 2010.

Issuance of Series C Preferred Stock

During 2007, the Company issued 272 shares of Series C Preferred Stock in exchange for all 3,264 shares of Series A preferred stock, originally issued in 2005. The Series C Preferred Stock was initially convertible at $1.00 per share into 3,264,000 shares of common stock. In connection with the sale of Series D preferred stock in 2008, the conversion price of the Series C Preferred Stock was reduced to $0.65 per share, according to its terms.

Terms of the Series C Preferred Stock

The Series C Preferred Stock had an annual dividend rate of 8% until October 1, 2008 and 20% thereafter. The dividends were payable quarterly. Such dividends were to be paid only after all outstanding dividends on the Series D Preferred Stock (with respect to the current fiscal year and all prior fiscal years) had been paid to the holders of the Series D Preferred Stock. No dividends were paid on Series C Preferred Stock during 2009 and 2010. The conversion price was subject to adjustment for stock dividends, stock splits or similar capital reorganizations and upon the occurrence of certain dilutive issuances of securities. The Series C Preferred Stock did not have voting rights and was redeemable only at the option of the Company upon 30 days' notice at a 20% premium plus any accrued but unpaid dividends. In the event of any voluntary or involuntary liquidation, dissolution or winding up of the Company's affairs, the Series C Preferred Stock would have been treated as senior to Novelos common stock. After all required payments were made to holders of Series E Preferred Stock, the holders of Series C Preferred Stock would have been entitled to receive first, $12,000 per share and all accrued and unpaid dividends. If, upon any winding up of the Company's affairs, the Company's remaining assets available to pay the holders of Series C Preferred Stock were not sufficient to permit the payment in full, then all of the Company's assets would have been distributed to the holders of Series C Preferred Stock (and any remaining holders of Series E Preferred Stock as may be required) on a pro rata basis.

Conversions of Series C Preferred Stock

During the year ended December 31, 2009, 68 shares of the Company's Series C Preferred Stock, having an aggregate stated value of $816,000, and accumulated dividends thereon of $184,000 were converted into shares of the Company's common stock, leaving 204 shares of Series C Preferred Stock outstanding which were convertible into 3,766,153 shares of common stock as of December 31, 2009. During 2010, all shares of Series C Preferred Stock were exchanged for shares of common stock (see "Exchange of Outstanding Preferred Stock for Common Stock" above).

Series E Preferred Stock Private Placement

Sale of Series E Preferred Stock to Purdue

Concurrently with the execution of the Collaboration Agreement on February 11, 2009, Novelos sold to Purdue 200 shares of a newly created series of the Company's preferred stock, designated "Series E Convertible Preferred Stock," par value $0.00001 per share (the "Series E Preferred Stock"), and a warrant (the "Series E Warrant") to purchase 9,230,769 shares of Novelos common stock for an aggregate purchase price of $10,000,000 (the "Series E Financing").

The Series E Warrant is exercisable for an aggregate of 9,230,769 shares of Novelos common stock at an exercise price of $0.65 per share. The warrant expires on December 31, 2015. The warrant exercise price and/or the common stock issuable pursuant to such warrant are subject to adjustment for stock dividends, stock splits or similar capital reorganizations so that the rights of the warrant holder after such event will be equivalent to the rights of the warrant holder prior to such event.

Exchange of Series D Preferred Stock for Series E Preferred Stock

The Company also entered into an exchange agreement with the holders (the "Series D Investors") of the Company's Series D preferred stock, issued during 2008, under which all 413.5 outstanding shares of Series D preferred stock and accumulated but unpaid dividends thereon totaling $1,597,144 were exchanged for 445.442875 shares of Series E Preferred Stock. The rights and preferences of the Series E Preferred Stock were substantially the same as the Series D preferred stock. In addition, the Series D Investors waived liquidated damages through the date of the exchange as a result of the Company's failure to file a registration statement covering the shares of common stock underlying the Series D preferred stock and warrants not otherwise registered. In connection with the execution of this exchange agreement, warrants held by the Series D Investors to purchase a total of 11,865,381 shares of the Company's common stock were amended to extend the expiration of the warrants to December 31, 2015 (from April 11, 2013) and to remove a forced exercise provision.

Terms of Series E Preferred Stock

The shares of Series E Preferred Stock had a stated value of $50,000 per share and were convertible into shares of common stock at any time after issuance at the option of the holder at $0.65 per share of common. If there was an effective registration statement covering the shares of common stock underlying the Series E Preferred Stock and the VWAP, as defined in the Series E Certificate of Designations, of Novelos common stock exceeded $2.00 for 20 consecutive trading days, then the outstanding shares of Series E Preferred Stock would automatically convert into common stock at the conversion price then in effect. The conversion price was subject to adjustment for stock dividends, stock splits or similar capital reorganizations.

The Series E Preferred Stock has an annual dividend rate of 9%, payable semi-annually on June 30 and December 31. Such dividends were payable in cash, in shares of Series E Preferred Stock or in registered shares of Novelos common stock at the Company's option, subject to certain conditions. The Company has not paid any cash dividends on Series E Preferred Stock.

The terms of the Series E Preferred Stock provided that for as long as any shares of Series E Preferred Stock remained outstanding, Novelos was prohibited without the prior consent of holders of a majority of the outstanding shares of Series E preferred stock (including in such majority the Xmark Funds and Purdue) from (i) paying dividends to its common stockholders, (ii) amending its certificate of incorporation or by-laws, (iii) issuing any equity security or any security convertible into or exercisable for any equity security at a price of $0.65 or less or with rights senior to the Series E Preferred Stock (except for certain exempted issuances), (iv) increasing the number of shares of Series E Preferred Stock or issuing any additional shares of Series E Preferred Stock, (v) selling or otherwise granting rights with respect to all or substantially all of its assets (or in the case of licensing, any material intellectual property) or the Company's business and/or entering into a merger or consolidation with another company unless Novelos would be the surviving corporation, the Series E Preferred Stock would remain outstanding, there would be no changes to the rights and preferences of the Series E Preferred Stock and there would not be created any new class of capital stock senior to the Series E Preferred Stock, (vi) redeeming or repurchasing any capital stock other than the Series E Preferred Stock, (vii) incurring any new debt for borrowed money in excess of $500,000 and (viii) changing the number of the Company's directors. As of December 31, 2010, no shares of Series E preferred stock remained outstanding, and accordingly, none of these restrictions applied. See "Exchange of Outstanding Preferred Stock for Common Stock" above.

Advisor Fees

Ferghana Partners, Inc. ("Ferghana"), a New York consulting firm, received a cash fee for their services in connection with the negotiation and execution of the Collaboration Agreement equal to $700,000 (or seven percent (7%) of the gross proceeds to the Company resulting from the sale of Series E Preferred Stock and common stock purchase warrants to Purdue in connection with the Collaboration Agreement). Novelos is also obligated to pay Ferghana six percent (6%) of all payments to Novelos by Mundipharma under the Collaboration Agreement other than royalties on net sales.

Accounting Treatment of Series E Financing

The terms of the Series E Preferred Stock contained provisions that required redemption in circumstances that were beyond the Company's control, such as the acquisition of more than 50% of our outstanding stock by any person or entity. Therefore, the shares were recorded as redeemable preferred stock outside of permanent equity in the balance sheet as of December 31, 2009. The gross proceeds of $10,000,000 received in conjunction with the Series E Financing were allocated on a relative fair value basis between the Series E Preferred Stock and the warrants. The relative fair value of the warrants issued to investors of $2,907,000 (determined using the Black-Scholes option pricing model, estimated volatility of 80%, a risk-free interest rate of 2.17% and a term equal to the term of the warrant) was recorded as additional paid-in capital while the relative fair value of the Series E Preferred Stock of $7,093,000 was recorded as temporary equity. The carrying value of the Series E Preferred Stock was immediately adjusted to its fair value of $7,385,000 based on the fair value of the as-converted common stock. The difference of $292,000 represents a beneficial conversion feature and was recorded as a deemed dividend to preferred stockholders. Issuance costs related to the Series E Financing of $795,000 were netted against temporary equity. The Series E Preferred Stock that was issued in payment of dividends was initially recorded in temporary equity at the value of the dividends that had accrued totaling $1,597,000. This amount was then adjusted to the fair value of $1,179,000 based on the fair value of the as-converted common stock. The difference of $418,000 was recorded as an offset to the deemed dividends recorded. The Series E Preferred Stock that was issued in exchange for outstanding shares of Series D preferred stock was recorded at $13,904,000, the carrying value of the shares of Series D preferred stock as of the date of the exchange.

As a result of the modification to the warrants to extend their expiration by approximately 32 months that occurred in connection with the exchange of all outstanding shares of Series D preferred stock for shares of Series E Preferred Stock, in the year ended December 31, 2009, a deemed dividend of $840,000 was recorded. This amount represented the incremental fair value of the warrants immediately before and after modification using the Black-Scholes option pricing model, volatility of 80%, discount rates of 1.54% and 2.17% and the remaining warrant term.

Conversions of Series E Preferred Stock

During the year ended December 31, 2009, 97.18209375 shares of the Company's Series E Preferred Stock, having an aggregate stated value of $4,859,000 and accumulated dividends thereon of $301,000, were converted into 7,939,008 shares of common stock. The associated carrying value of the converted shares totaling approximately $3,213,000 was reclassified to permanent equity from temporary equity. During the year ended December 31, 2010, 140 shares of the Company's Series E Preferred Stock, having an aggregate stated value of $7,000,000, and accumulated dividends thereon totaling $635,000, were converted into 11,745,779 shares of common stock. The associated carrying value of the converted shares totaling approximately $4,690,000 was reclassified to permanent equity from temporary equity. In November 2010, all outstanding shares of Series E Preferred Stock were exchanged for shares of common stock. See "Exchange of Preferred Stock" below.

August 2009 Common Stock Private Placement

Securities Purchase Agreement

On August 25, 2009, the Company entered into the August 2009 Purchase Agreement with Purdue to sell 13,636,364 shares of its common stock, $0.00001 par value and warrants to purchase 4,772,728 shares of its common stock at an exercise price of $0.66 per share, expiring December 31, 2015, for an aggregate purchase price of $9,000,000 (the "August 2009 Private Placement"). Concurrent with the execution and delivery of the August 2009 Purchase Agreement, the Company sold Purdue 5,303,030 shares of its common stock and a warrant to purchase 1,856,062 shares of its common stock at $0.66 per share for approximately $3,500,000 (the "Initial Closing"). On November 10, 2009, the Company completed the final closing under the August 2009 Purchase Agreement and sold Purdue 8,333,334 shares of Novelos common stock and warrants to purchase 2,916,668 shares of Novelos common stock for gross proceeds of $5,500,000. Issuance costs associated with the transactions totaled $61,000 and such amount was recorded as a reduction of additional paid-in capital.

Pursuant to the August 2009 Purchase Agreement, Purdue acquired a right of first refusal (the "Right of First Refusal") with respect to bona fide offers for the license or other acquisition of NOV-002 Rights (as defined in the August 2009 Purchase Agreement) in the U.S. (the "U.S. License") received from third parties and approved by the Company's board of directors. Under the Right of First Refusal, Novelos will be required to communicate to Purdue the terms of any such third-party offers received and Purdue will have 30 days to enter into a definitive agreement with Novelos on substantially similar terms that provide no lesser economic benefit to Novelos as provided in the third-party offer. The Right of First Refusal terminates upon business combinations, as defined in the August 2009 Purchase Agreement. Novelos has separately entered into letter agreements with Mundipharma and its independent associated company providing for a conditional exclusive right to negotiate for, and a conditional right of first refusal with respect to, NOV-002 Rights for Latin America, Mexico and Canada.

Pursuant to the August 2009 Purchase Agreement, Purdue has the right to either designate one member to Novelos' Board or designate an observer to attend all meetings of the Board and committees thereof and to have access to all information made available to members of the Board. This right lasts until the later of such time as Purdue or its independent associated companies no longer hold at least one-half of the common stock purchased pursuant to the August 2009 Purchase Agreement and no longer hold at least one-half of the Series E Preferred Stock issued to them on February 11, 2009. The right to designate a Board observer had previously been granted in connection with the financing that occurred on February 11, 2009 and Purdue appointed such an observer in February 2009. Purdue also has the right to participate in future equity financings in proportion to their pro rata ownership of common stock.

Common Stock Purchase Warrant

The common stock purchase warrants have an exercise price of $0.66 per share and expire on December 31, 2015. The warrant exercise price and/or the number of shares of common stock issuable pursuant to such warrant will be subject to adjustment for stock dividends, stock splits or similar capital reorganizations so that the rights of the warrant holders after such event will be equivalent to the rights of warrant holders prior to such event. The relative fair value of the warrants issued to Purdue totaled $1,929,000 and was recorded as a component of additional paid-in capital. The fair value of the warrants was determined based on the market value of the Company's common stock on the dates of issuance using the Black-Scholes method of valuation, estimated volatility of 90%, risk-free interest rates ranging from 2.02% to 2.7% and a term equal to the term of the warrant.

Registration Rights

As part of the August 2009 Private Placement, the Company entered into a registration rights agreement with Purdue (the "Purdue Registration Agreement"). The Purdue Registration Agreement required the Company to have filed with the SEC no later than May 17, 2010, a registration statement covering the resale of all the shares of common stock issued pursuant to the August 2009 purchase agreement and all shares of common stock issuable upon exercise of the warrants issued pursuant to the August 2009 purchase agreement. The registration rights agreement provided for liquidated damages equal to 1.5% per month (pro-rated on a daily basis for any period of less than a full month) of the aggregate purchase price of the common stock until the delinquent registration statement is filed. The Company did not file the registration statement and accrued $819,000 as a component of other income (expense) during the year ended December 31, 2010, representing management's best estimate of the probable total liquidated damages that may be settled. In connection with the exchange of their shares of Series E Preferred Stock for common stock on November 30, 2010, Purdue released the Company from any requirement to register shares of its common stock for resale and forfeited any rights to receive liquidated damages pursuant to any registration agreements. The accrued liquidated damages were settled in connection with the exchange and, accordingly, the amount that had been accrued was reclassified to additional paid-in capital.

July 2010 Registered Offering

On July 27, 2010, pursuant to securities purchase agreements entered into with institutional investors on July 21, 2010, the Company completed the sale, in an offering registered under the Securities Act of 1933, as amended, of an aggregate of 21,428,576 shares of its common stock and five-year warrants to purchase up to an aggregate of 16,071,434 shares of its common stock at an exercise price of $0.07 per share, for gross proceeds of $1,500,000 and net proceeds of $1,249,000 after deducting transaction costs. The warrant exercise price is subject to adjustment in certain circumstances and therefore, the relative fair value of the warrants at the date of issuance, $504,000, has been bifurcated from the proceeds and recorded as a derivative liability. The Company uses valuation methods and assumptions that consider among others the fair value of the underlying stock, risk-free interest rate, volatility, expected life and dividend rates in estimating fair value for the warrants considered to be derivative instruments. The assumptions used to value these warrants at the time of issuance are generally consistent with those disclosed for stock-based compensation (see Note 7).

Since the securities in this financing were issued at a price less than $0.66 per share, the Company obtained the consent of its preferred stockholders pursuant to a consent and waiver dated July 6, 2010, as amended on July 21, 2010. In connection with obtaining this consent, the Company issued five-year warrants (the "Incentive Warrants") to its preferred stockholders for the purchase of up to an aggregate of 16,071,434 shares of common stock at an exercise price of $0.105 per share. No adjustments to the conversion price of the preferred stock or warrants held by preferred stockholders were made in connection with the financing. The fair value of the Incentive Warrants at date of issuance, $586,000, is reflected as a deemed dividend to the preferred stockholders on the statement of operations. The Company used valuation methods and assumptions that consider among others the fair value of the underlying stock, risk-free interest rate, volatility, expected life and dividend rates in estimating fair value of the Incentive Warrants. The assumptions used to value these warrants are generally consistent with those disclosed for stock-based compensation (see Note 7).

The financing resulted in adjustments to certain warrants pursuant to their terms. Warrants issued in 2005 that were exercisable for 243,476 shares at an exercise price of $0.65 per share as of immediately prior to the transaction became exercisable for 2,260,845 shares at an exercise price of $0.07 per share, and warrants issued in 2006 that were exercisable for 4,557,461 shares at an exercise price of $1.72 per share as of immediately prior to the transaction became exercisable for 5,136,191 shares at an exercise price of $1.53 per share. The 2005 warrants expired unexercised on August 9, 2010, and the 2006 warrants will expire in March 2011.

Common Stock Warrants — The following table summarizes information with regard to outstanding warrants as of December 31, 2010, issued in connection with equity and debt financings since 2005.

Offering	Outstanding (as adjusted)	Exercise Price (as adjusted)	Expiration Date
2006 Issuance of Common Stock	5,136,191	$ 1.53	March 7, 2011
Series B Preferred Stock – placement agents	825,000	$ 1.25	May 2, 2012
Series C Exchange	1,250,000	$ 1.25	May 2, 2012
Series E Preferred Stock	9,230,769	$ 0.65	December 31, 2015
August 2009 Private Placement	4,772,730	$ 0.66	December 31, 2015
July 2010 Direct Offering (1)	16,071,434	$ 0.07	July 27, 2015
Preferred Incentive Warrants	16,071,434	$ 0.105	July 27, 2015
Total	53,357,558		

(1) The exercise price of these warrants was adjusted in connection with the private placement completed on April 8, 2011. See Note 12.

During the year ended December 31, 2010, warrants to purchase 2,260,845 shares of common stock at $0.07 and 909,090 shares of common stock at $0.65 expired unexercised. On March 7, 2011, warrants to purchase 5,136,191 shares of common stock at $1.53 expired unexercised.

During the year ended December 31, 2010, 8,182,158 shares of the Company's common stock were issued upon the cashless exercise of warrants to purchase 13,732,580 shares of the Company's common stock. The Company reclassified $2,584,000 from derivative liability to additional paid-in capital upon the exercise of warrants. The following is a summary of the exercises:

Original private placement	Shares of Common Stock Issued	Warrants Exercised	Exercise Price
2005 Bridge Financing	314,982	400,000	$ 0.625
2005 Issuance of Common Stock – placement agents	226,544	317,350	$ 0.65
2006 Issuance of Common Stock	366,492	991,516	$ 1.72
Series B Preferred Stock – purchasers	4,545,447	7,500,000	$ 0.65
Series B Preferred Stock – placement agents	35,106	75,000	$ 1.25
Series D Preferred Stock	2,645,685	4,365,381	$ 0.65
Series C Exchange	47,902	83,333	$ 1.25
Total	8,182,158	13,732,580	

During the year ended December 31, 2009, a total of 483,829 shares of the Company's common stock were issued upon the cashless exercise of warrants to purchase 1,067,385 shares of common stock. The Company reclassified a total of $1,001,000 from derivative liability to additional paid-in capital upon the exercise of warrants. The following is a summary of the exercises:

Original private placement	Shares of Common Stock Issued	Warrants Exercised	Exercise Price
2005 Bridge Financing	218,648	320,000	$ 0.625
2005 Common Stock	200,504	485,317	$ 0.65
Series A Preferred Stock	38,223	60,606	$ 0.65
2006 Issuance of Common Stock	26,454	201,462	$ 1.72
Total	483,829	1,067,385	

On August 21, 2009, the Company entered into exchange agreements with certain accredited investors who held warrants, issued in the 2006 private placement, to purchase 6,947,728 shares of its common stock. Pursuant to the exchange agreements, an aggregate of 2,084,308 shares of the Company's common stock with a fair value of $1,626,000 were issued in exchange for these warrants. The holders agreed not to transfer or dispose of the shares of common stock before February 18, 2010. The warrants had been recorded as a derivative liability on the Company's balance sheet at their estimated fair value of $1,109,000 at the date of exchange. The difference of $517,000 between the estimated fair value of the warrants at the date of exchange and the common stock issued to settle the derivative liability has been included as a component of the loss on derivative warrants for the year ended December 31, 2009. Following the exchange, warrants expiring on March 7, 2011 to purchase a total of 5,432,120 shares of common stock at $1.82 per share remained outstanding. Following the final closing of the August 2009 Private Placement, described above, the number of these outstanding warrants was increased to 5,750,439 and the exercise price was reduced to $1.72, as a result of anti-dilution provisions in the warrants.

Authorized and Reserved Shares — On October 18, 2010 the Company's stockholders approved an amendment to the certificate of incorporation to increase the total number of authorized shares of the Company's common stock from 225,000,000 to 750,000,000. On April 8, 2011, the Company completed the Reverse Split described in Note 12, and amended the certificate of incorporation to decrease the total number of authorized shares to 150,000,000 from 750,000,000.

The following shares were reserved for future issuance upon exercise of stock options or warrants or conversion of preferred stock as of the dates indicated:

	December 31,	
	2010	**2009**
2000 Stock Option Plan	44,621	56,047
2006 Stock Incentive Plan	5,870,000	6,710,000
Options issued outside of formalized plans	1,617,111	2,453,778
Warrants	53,357,558	35,521,106
Preferred stock	—	50,406,149
Total shares reserved for future issuance	60,889,290	95,147,080

7. STOCK-BASED COMPENSATION

Reverse Stock Split

None of the disclosures in these financial statements and notes have been adjusted to give effect to the Reverse Split described in Notes 1 and 12.

The Company's stock-based compensation plans are summarized below:

2000 Stock Option Plan. As of December 31, 2010, there are options to purchase 44,621 shares of the Company's common stock outstanding under a stock option plan established in August 2000 (the "2000 Plan"). There will be no further grants made under the 2000 Plan. Options generally vested annually over three years and expire on the tenth anniversary of the grant date. No options were granted or exercised under the 2000 Plan during 2009. During 2010, options to purchase 10,000 shares of common stock under the 2000 Plan were exercised and options to purchase 1,426 shares of common stock were canceled.

2006 Stock Incentive Plan. On May 1, 2006, the Company's board of directors adopted, and on July 21, 2006 the Company's stockholders approved, the 2006 Stock Incentive Plan (the "2006 Plan"). A total of 10,000,000 shares of common stock are reserved for issuance under the 2006 Plan for grants of incentive or nonqualified stock options, rights to purchase restricted and unrestricted shares of common stock, stock appreciation rights and performance share grants. A committee of the board of directors determines exercise prices, vesting periods and any performance requirements on the date of grant, subject to the provisions of the 2006 Plan. Options are granted at or above the fair market value of the common stock at the grant date and expire on the tenth anniversary of the grant date. Vesting periods are generally two to three years. In the year ended December 31, 2009, stock options for the purchase of 1,940,000 shares of common stock were granted under the 2006 Plan. During the year ended December 31, 2010, options to purchase 220,000 shares of common stock were exercised and options to purchase 600,000 shares of common stock were canceled. As of December 31, 2010 and December 31, 2009, 3,910,000 and 3,290,000 shares remain available for grant under the 2006 Plan. Options granted pursuant to the 2006 Plan generally will become fully vested upon a termination event occurring within one year following a change in control, as defined. A termination event is defined as either termination of employment or services other than for cause or constructive termination of employees or consultants resulting from a significant reduction in either the nature or scope of duties and responsibilities, a reduction in compensation or a required relocation.

Other Stock Option Activity. During 2005 and 2004, the Company issued options to purchase a total of 2,653,778 shares of common stock to employees, directors and consultants outside of any formalized plan. These options are exercisable within a ten-year period from the date of grant, and vest at various intervals with all options being fully vested within two to three years of the grant date. The options are not transferable except by will or domestic relations order. The option price per share is not less than the fair market value of the shares on the date of the grant. During the year ended December 31, 2010, options to purchase 686,667 shares of common stock were exercised and options to purchase 150,000 shares of common stock were canceled.

Accounting for Stock-Based Compensation

The Company accounts for employee stock-based compensation in accordance with the guidance of FASB ASC Topic 718, *Compensation – Stock Compensation* which requires all share-based payments to employees, including grants of employee stock options, to be recognized in the financial statements based on their fair values. The Company accounts for non-employee stock-based compensation in accordance with the guidance of FASB ASC Topic 505, *Equity* which requires that companies recognize compensation expense based on the estimated fair value of options granted to non-employees over their vesting period, which is generally the period during which services are rendered by such non-employees.

The following table summarizes amounts charged to expense for stock-based compensation related to employee and director stock option grants and stock-based compensation recorded in connection with stock options and restricted stock awards granted to non-employee consultants:

	Year Ended December 31,	
	2010	**2009**
Employee and director stock option grants:		
Research and development	$ 230,101	$ 148,030
General and administrative	356,220	289,036
	586,321	437,066
Non-employee consultant stock option grants and restricted stock awards:		
Research and development	(220,969)	328,614
General and administrative	(28,054)	98,657
	(249,023)	427,271
Total stock-based compensation	$ 337,298	$ 864,337

On December 31, 2009, the expiration of options held by a former employee was extended until January 31, 2010 and incremental stock-based compensation expense for non-employees of $15,000 was recorded in connection with the one-month extension.

In January 2009, the Company modified the terms of options to purchase 40,000 shares of common stock held by two employees to vest all unvested options and to extend the expiration dates of the options. The modification was made in connection with the termination of the two employees to reduce costs. During the year ended December 31, 2009, incremental stock-based compensation expense of $8,000 was recorded in connection with the modification of the option terms.

Determining Fair Value

Valuation and amortization method. The fair value of each stock award is estimated on the grant date using the Black-Scholes option-pricing model. The estimated fair value of employee stock options is amortized to expense using the straight-line method over the vesting period.

Volatility. The Company estimates volatility based on an average of (1) the Company's historical volatility since its common stock has been publicly traded and (2) review of volatility estimates of publicly held drug development companies with similar market capitalizations.

Risk-free interest rate. The risk-free interest rate is based on the U.S. Treasury yield curve in effect at the time of grant commensurate with the expected term assumption.

Expected term. The expected term of stock options granted is based on the Company's estimate of when options will be exercised in the future as there have been limited stock option exercises to date. The expected term is generally applied to one group as a whole as the Company does not expect substantially different exercise or post-vesting termination behavior within its population of option holders.

Forfeitures. The Company records stock-based compensation expense only for those awards that are expected to vest. FASB ASC Topic 718 requires forfeitures to be estimated at the time of grant and revised, if necessary, in subsequent periods if actual forfeitures differ from those estimates. The term "forfeitures" is distinct from "cancellations" or "expirations" and represents only the unvested portion of the surrendered option. The Company has applied an annual forfeiture rate of 0% to all unvested options as of December 31, 2010 as the Company has experienced very few forfeitures to date and believes that there is insufficient history to develop an accurate estimate of future forfeitures. This analysis will be re-evaluated semi-annually and the forfeiture rate will be adjusted as necessary. Ultimately, the actual expense recognized over the vesting period will be for only those shares that vest.

The following table summarizes weighted average values and assumptions used for options granted to employees, directors and consultants in the periods indicated:

	Year Ended December 31, 2009
Volatility	90%
Weighted-average volatility	90%
Risk-free interest rate	2.12%
Expected life (years)	5
Dividend	0%
Weighted-average exercise price	$ 0.75
Weighted-average grant-date fair value	$ 0.53

There were no stock option grants during the year ended December 31, 2010.

Stock Option Activity

A summary of stock option activity under the 2000 Plan, the 2006 Plan and outside of any formalized plan is as follows:

	Options Outstanding	Weighted Average Exercise Price	Weighted Average Remaining Contracted Term in Years	Aggregate Intrinsic Value
Outstanding at January 1, 2009	7,279,825	$ 0.60	7.9	$ 989,718
Options granted	1,940,000	$ 0.75		
Outstanding at December 31, 2009	9,219,825	$ 0.63	7.5	$ 17,650,255
Options exercised	(916,667)	$ 0.17		$ 663,600
Options canceled	(771,426)	$ 0.91		$ 0
Outstanding at December 31, 2010	7,531,732	$ 0.66	6.9	$ 24,842
Exercisable at December 31, 2010	6,008,384	$ 0.66	6.4	$ 24,842

The aggregate intrinsic value of options outstanding is calculated based on the positive difference between the closing market price of the Company's common stock at the end of the respective period and the exercise price of the underlying options. During the year ended December 31, 2010, the total intrinsic value of options exercised was $663,000 and the total amount of cash received from exercise of these options was $158,600. Shares of common stock issued upon the exercise of options are from authorized but unissued shares.

As of December 31, 2010, there was approximately $647,000 of total unrecognized compensation cost related to unvested stock-based compensation arrangements. Of this total amount, 70% and 30% are expected to be recognized during 2011 and 2012, respectively. The Company expects 1,523,348 in unvested options to vest in the future. The weighted-average grant-date fair value of vested and unvested options outstanding at December 31, 2010 was $0.41 and $0.45, respectively.

8. INCOME TAXES

The Company's deferred tax assets consisted of the following at December 31:

	2010	2009
Net operating loss carryforwards	$ 12,872,000	$ 9,543,000
Research and development expenses	14,180,000	14,906,000
Tax credits	1,711,000	1,563,000
Capital loss carryforward	340,000	340,000
Stock-based compensation	365,000	650,000
Gross deferred tax asset	29,468,000	27,002,000
Valuation allowance	(29,468,000)	(27,002,000)
Net deferred tax asset	$ —	$ —

As of December 31, 2010, the Company had federal and state net operating loss carryforwards of approximately $33,180,000 and $25,812,000 respectively, which expire through 2030. In addition, the Company has federal and state research and development and investment tax credits of approximately $1,382,000 and $449,000, respectively, which expire through 2030. The amount of net operating loss carryforwards which may be utilized annually in future periods may be limited pursuant to Section 382 of the Internal Revenue Code as a result of substantial changes in the Company's ownership that have occurred or that may occur in the future.

The capital loss carryforward relates to the loss recorded in prior years for Novelos' investment in an unrelated company.

Because of the Company's limited operating history, continuing losses and uncertainty associated with the utilization of the net operating loss carryforwards in the future, management has provided a 100% allowance against the Company's gross deferred tax asset. In 2010, the difference between the Company's total statutory tax rate of approximately 40% and its effective tax rate of 0% is due to the nontaxable gain of $8,118,000 on derivative warrants, an increase in the valuation allowance of $2,466,000 and nondeductible liquidated damages accrued of $819,000. In 2009, the difference between the Company's total statutory tax rate of approximately 40% and its effective tax rate of 0% is due equally to the increase in valuation allowance and the reduction in tax loss resulting from the nondeductible loss on derivative warrants.

The Company did not have any unrecognized tax benefits or accrued interest and penalties at any time during the years ended December 31, 2010 and 2009, and does not anticipate having any unrecognized tax benefits over the next twelve months. The Company is subject to audit by the IRS for tax periods commencing January 1, 2007.

9. NET INCOME (LOSS) PER SHARE

Reverse Stock Split

None of the disclosures in these financial statements and notes have been adjusted to give effect to the Reverse Split described in Notes 1 and 12.

Basic net loss per share is computed by dividing net loss attributable to common stockholders by the weighted average number of shares of common stock outstanding during the period. Diluted net income per share is computed by dividing net loss attributable to common stockholders, as adjusted, by the sum of the weighted average number of shares of common stock and the dilutive potential common stock equivalents then outstanding. Potential common stock equivalents consist of stock options, warrants and convertible preferred stock and accumulated dividends. Since the Company has a net loss attributable to common stockholders for the years ended December 31, 2010 and 2009, the inclusion of common stock equivalents in the computation for those periods would be antidilutive. Accordingly, basic and diluted net loss per share is the same for the periods presented.

The following potentially dilutive securities have been excluded from the computation of diluted net income (loss) per share since their inclusion would be antidilutive:

	Year Ended December 31,		
	2010	**2009**	
Stock options	7,661,406	9,219,825	
Warrants	54,609,672	35,521,106	
Conversion of preferred stock	312,442,612	50,406,149	(1)

(1) Includes shares of common stock that may become issuable upon conversion of preferred stock dividends accumulated at the respective date.

10. COMMITMENTS

Property Lease

Effective September 1, 2010, the Company entered into a six-month extension to its lease for office space, at a rate of $5,275 per month, expiring February 28, 2011. Rent expense was $65,000 and $87,000 for the years ended December 31, 2010 and 2009, respectively. Future minimum lease payments under this non-cancelable lease are approximately $10,600 during 2011. After February 28, 2011, the lease may be canceled with 30-day notice by either party.

Royalty Arrangements

The Company is obligated to a Russian company, ZAO BAM, under a royalty and technology transfer agreement. Mark Balazovsky, a director of the Company until November 2006, is the majority shareholder of ZAO BAM. Pursuant to the royalty and technology transfer agreement between the Company and ZAO BAM, the Company is required to make royalty payments of 1.2% of net sales of oxidized glutathione-based products. The Company is also required to pay ZAO BAM $2 million for each new oxidized glutathione-based drug within eighteen months following FDA approval of such drug.

If a royalty is not being paid to ZAO BAM on net sales of oxidized glutathione products, then the Company is required to pay ZAO BAM 3% of all license revenues. If license revenues exceed the Company's cumulative expenditures including, but not limited to, preclinical and clinical studies, testing, FDA and other regulatory agency submission and approval costs, general and administrative costs, and patent expenses, then the Company would be required to pay ZAO BAM an additional 9% of the amount by which license revenues exceed the Company's cumulative expenditures.

As a result of the assignment to Novelos of the exclusive worldwide intellectual property and marketing rights of oxidized glutathione (excluding the Russian Territory), Novelos is obligated to the Oxford Group, Ltd., or its assignees, for future royalties. Simyon Palmin, a founder of Novelos, a director until August 12, 2008 and the father of the Company's president and chief executive officer, is president of Oxford Group, Ltd. Mr. Palmin was also an employee of the Company until September 2008 and performed consulting services through December 2009. Pursuant to the agreement, as revised May 26, 2005, Novelos is required to pay Oxford Group, Ltd., or its assignees, a royalty in the amount of 0.8% of the Company's net sales of oxidized glutathione-based products.

Employment Agreements

The Company entered into an employment agreement with Harry Palmin effective January 1, 2006, whereby he agreed to serve as the Company's president and chief executive officer for an initial term of two years. The agreement is automatically renewed for successive one-year terms unless notice of termination is provided by either party at least 90 days prior to the end of such term. The agreement was renewed most recently for an additional one-year term on January 1, 2011 in accordance with its terms. The agreement provides for an initial salary of $225,000 in 2006, participation in standard benefit programs and an annual cash bonus at the discretion of the compensation committee. The agreement further provides that upon resignation for good reason or termination without cause, both as defined in the agreement, Mr. Palmin will receive his pro rata share of the average of his annual bonus paid during the two fiscal years preceding his termination, his base salary and benefits for 11 months after the date of termination and fifty percent of his unvested stock options will vest. The agreement also contains a non-compete provision, which prohibits Mr. Palmin from competing with the Company for one year after termination of his employment with the Company.

Retention Agreements

On May 14, 2010, the Company entered into retention agreements with each of its four vice-presidents. The agreements provide for the lump-sum payment of six months' base salary and benefits to each such officer following a termination without cause or a resignation with good reason occurring on or before November 14, 2011. The agreements further provide that if the executives remain employed with the Company as of October 1, 2010, they will receive a payment of two months' base salary as a retention bonus on that date. The retention bonus, an aggregate of $140,000, was paid in October 2010 and will be deducted from the severance amounts that may become payable upon a subsequent involuntary termination. Elias Nyberg's employment was terminated on March 10, 2011, without cause, and he received a payment of approximately $83,000 pursuant to the executive retention agreement. The agreements expire November 14, 2011. The total remaining amount that may become payable to the Company's Named Executive Officers pursuant to the retention agreements is approximately $86,000 to Christopher Pazoles. Concurrently with the execution of the retention agreements, the employment agreement between the Company and Christopher Pazoles dated July 15, 2005 was terminated.

On May 14, 2010, the Company also entered into retention agreements with each of its three non-executive employees. The agreements provide for the lump-sum payment of six months' base salary and benefits to each employee following a termination without cause or a resignation with good reason occurring on or before November 14, 2011. The agreements expire November 14, 2011.

11. LITIGATION

A purported class action complaint was filed on March 5, 2010 in the United States District Court for the District of Massachusetts by an alleged shareholder of the Company, on behalf of himself and all others who purchased or otherwise acquired the Company's common stock in the period between December 14, 2009 and February 24, 2010, against the Company and its President and Chief Executive Officer, Harry S. Palmin. On October 1, 2010, the court appointed lead plaintiffs (Boris Urman and Ramona McDonald) and appointed lead plaintiffs' counsel. On October 22, an amended complaint was filed. The amended complaint claims that the Company violated Section 10(b) of the Securities Exchange Act of 1934, as amended, and Rule 10b-5 promulgated thereunder in connection with alleged disclosures related to the Phase 3 clinical trial of NOV-002 for non-small cell lung cancer. On December 6, 2010, the Company filed a motion to dismiss the complaint with prejudice. On January 20, 2011, the plaintiffs filed their opposition to our motion and on March 3, 2011, we filed our response to their opposition. Our motion to dismiss remains pending. The Company believes the allegations are without merit and intends to defend vigorously against the allegations.

On June 28, 2010, the Company received a letter from counsel to ZAO BAM and ZAO BAM Research Laboratories (collectively, "BAM") alleging that the Company modified the chemical composition of NOV-002 without prior notice to or approval from BAM, constituting a material breach of a technology and assignment agreement the Company had entered into with BAM on June 20, 2000 (the "June 2000 Agreement"). The letter references the Company's amendment, submitted to the FDA on August 30, 2005, to its investigational new drug application dated August 1999 as the basis for BAM's claims and demands the transfer of all intellectual property rights concerning NOV-002 to BAM. Mark Balazovsky, a director of Novelos from June 1996 until November 2006 and a shareholder of Novelos through at least June 25, 2010, is, to the Company's knowledge, still the general director and principal shareholder of ZAO BAM. The Company believes the allegations are without merit and intends to defend vigorously against any proceedings that BAM may initiate as to these allegations. On September 24, 2010, the Company filed a complaint in Suffolk Superior Court seeking a declaratory judgment by the court that the June 2000 Agreement has been replaced by a subsequent agreement between the parties dated April 1, 2005 (the "April 2005 Agreement"), that Novelos' obligations to BAM are governed solely by the April 2005 Agreement and that the obligations of the June 2000 agreement have been performed and fully satisfied. On November 29, 2010, BAM answered the complaint, denying the material allegations, and stating its affirmative defenses and certain counterclaims. On January 14, 2011, the Company responded to the counterclaims, denying BAM's material allegations and stating our affirmative defenses. The Company believes the counterclaims are without merit and intends to vigorously defend against them.

12. SUBSEQUENT EVENTS

Merger Agreement

On April 8, 2011, the Company entered into an Agreement and Plan of Merger (the "Merger Agreement") with Cellectar, Inc. ("Cellectar") and Cell Acquisition Corp. (the "Merger Subsidiary"), a wholly owned subsidiary of Novelos, pursuant to which Cellectar was merged into the Merger Subsidiary (the "Acquisition"). As a result of the Acquisition, the Merger Subsidiary, which has been renamed Cellectar, Inc., owns all assets and operates the business previously owned and operated by Cellectar. Prior to the Acquisition, Cellectar was in the business of developing drugs for the treatment and diagnosis of cancer. The Company will continue to develop Cellectar's compounds following the Acquisition.

As consideration for the Acquisition, the former stockholders of Cellectar received aggregate consideration consisting of a number of shares of Novelos common stock constituting, after giving effect to the Acquisition but before giving effect to the concurrent private placement of our securities described below, approximately 85% of the outstanding shares of Novelos common stock. Prior to the Acquisition, the Company amended and restated its certificate of incorporation and in connection therewith, among other things, effected a 1-for-153 reverse split of its common stock (the "Reverse Split"). Immediately following the effectiveness of the Reverse Split, there were approximately 2,959,914 shares of our common stock outstanding, and the Company issued 17,001,596 shares of our common stock to the former stockholders of Cellectar upon the effectiveness of the Acquisition.

Rodman & Renshaw, LLC ("Rodman"), financial advisor to Novelos in connection with the Acquisition, received a cash fee of $250,000 upon the completion of the Acquisition in consideration of their services. XMS Capital Partners, the financial advisor to Cellectar in connection with the Acquisition, received a cash fee of $200,000 upon the completion of the Acquisition in consideration of their services.

Securities Purchase Agreement

Concurrently with the execution of the Merger Agreement, the Company entered into a Securities Purchase Agreement with certain accredited investors under which the Company sold an aggregate of 6,846,537 units, each unit consisting of one share of its common stock and a warrant to purchase one share of its common stock, at a price of $0.75 per unit, for gross proceeds of approximately $5,135,000. The warrants have an exercise price of $0.75 and expire on March 31, 2016. The warrant exercise price and/or the common stock issuable pursuant to such warrant will be subject to adjustment for stock dividends, stock splits or similar capital reorganizations so that the rights of the warrant holders after such event will be equivalent to the rights of warrant holders prior to such event.

The Securities Purchase Agreement includes a requirement that the Company file with the Securities and Exchange Commission ("SEC") no later than October 5, 2011, a registration statement covering the resale of the shares of common stock, and the shares of common stock underlying the warrants, issued pursuant to the Securities Purchase Agreement. The Company is also required to use our commercially reasonable efforts to have the registration statement declared effective by December 4, 2011, and to keep the registration statement continuously effective under the Securities Act of 1933, as amended (the "Securities Act") until the earlier of the date when all the registrable securities covered by the registration statement have been sold or the second anniversary of the closing.

In the event the Company fails to file the registration statement within the timeframe specified by the Securities Purchase Agreement, or if it fails to obtain effectiveness of this registration on or prior to the December 4, 2011 (if there is no review by the SEC) or by January 3, 2012 (if there is review by the SEC) with respect to the maximum number of shares permitted to be registered by the SEC, the Company will be required to pay to the purchasers liquidated damages equal to 1.5% per month (pro-rated on a daily basis for any period of less than a full month) of the aggregate purchase price of the units purchased until the registration statement is filed or declared effective, as applicable. The Company will be allowed to suspend the use of the registration statement for not more than 30 consecutive days, on not more than two occasions, in any 12 month period. The Company has also granted piggy-back registration rights with respect to any shares of common stock that it is required to exclude from the registration statement as a condition of its effectiveness, and has also agreed to file further registration statements with respect to any such shares six months after the effective date of the initial registration statement.

The Company paid to Rodman, the placement agent for the financing, a cash fee equal to $200,000 and warrants to purchase 192,931 shares of its common stock in consideration for their advisory services with respect to the financing pursuant to the placement agency agreement between Rodman and the Company. Rodman is entitled to registration rights with respect to the shares of common stock issuable upon exercise of these warrants. The warrants have the same terms as those issued to the investors in the private placement.

Changes in Directors and Executive Officers

Effective April 8, 2011, prior to the completion of the Acquisition, Michael J. Doyle, Sim Fass and David B. McWilliams resigned from the Company's board of directors and their respective committee appointments.

Effective April 8, 2011, as a condition to the completion of the Acquisition, Jamey P. Weichert, Thomas Rockwell Mackie, John Neis, John E. Niederhuber and Michael F. Tweedle were appointed to the Company's board of directors. Committee assignments have not yet been determined. Jamey P. Weichert, Thomas Rockwell Mackie and John Neis, previously served on the board of directors of Cellectar.

Amendment of Certificate of Incorporation

Effective April 7, 2011 the Company's certificate of incorporation was amended to eliminate the Certificate to Set Forth Designations, Voting Powers, Preferences, Restrictions and Relative Rights of Series C 8% Cumulative Convertible Preferred Stock. There had not been any shares of Series C preferred stock outstanding since December 2010.

Effective April 7, 2011 the Company's certificate of incorporation was amended to eliminate the Certificate of Designations, Preferences and Rights of Series E Convertible Preferred Stock. There had not been any shares of Series E preferred stock outstanding since December 2010.

Prior to the closing of the Acquisition on April 8, 2011, the Company amended and restated its certificate of incorporation in order (a) to effect the reverse split; (b) to reduce the number of shares of our authorized common stock from 750,000,000 to 150,000,000; (c) to eliminate the right of the stockholders to act by written consent; and (d) to classify the board of directors into three classes. Class I directors will stand for re-election at the Company's next annual meeting of stockholders, Class II directors will stand for re-election at the 2012 annual meeting of stockholders, and Class III directors will stand for re-election at the 2013 annual meeting of stockholders. Thomas Rockwell Mackie, James S. Manuso and John Niederhuber serve as Class I directors, Stephen A. Hill, Michael F. Tweedle and John Neis serve as Class II directors, and Harry S. Palmin, Jamey P. Weichert and Howard M. Schneider serve as Class III directors.

ITEM 7. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None.

ITEM 8A. CONTROLS AND PROCEDURES

Management's report on internal control over financial reporting. Our management is responsible for establishing and maintaining adequate internal control over financial reporting as defined in Rule 13a-15(f) of the Securities Exchange Act of 1934, as amended (the "Exchange Act"). Internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that in reasonable detail accurately and fairly reflect the transactions and dispositions of our assets; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that our receipts and expenditures are being made only in accordance with authorizations of our management and directors; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of our assets that could have a material effect on the financial statements.

Under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer, we conducted an evaluation of the effectiveness of our internal control over financial reporting based on criteria established in the *Internal Control—Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission. Management's evaluation included such elements as the design and operating effectiveness of key financial reporting controls, process documentation, accounting policies, and our overall control environment. Based on this evaluation, our management concluded that our internal control over financial reporting was effective as of December 31, 2010. This annual report does not include an attestation report of the Company's independent registered public accounting firm regarding internal control over financial reporting. Management's report was not subject to attestation by the Company's independent registered public accounting firm.

Evaluation of disclosure controls and procedures. Based on our management's evaluation (with the participation of our principal executive officer and principal financial officer), as of the end of the period covered by this report, our principal executive officer and principal financial officer have concluded that our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act) are effective to ensure that information required to be disclosed by us in reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in Securities and Exchange Commission rules and forms.

It should be noted that any system of controls, however well designed and operated, can provide only reasonable, and not absolute, assurance that the objectives of the system are met. In addition, the design of any control system is based in part on certain assumptions about the likelihood of future events. Because of these and other inherent limitations of control systems, there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions, regardless of how remote.

Changes in internal control over financial reporting. Our management, in connection with its evaluation of internal controls (with the participation of our principal executive officer and principal financial officer), did not identify any change in internal control over the financial reporting process that occurred during our fourth fiscal quarter of 2010 that would have materially affected, or would have been reasonably likely to materially affect, our internal control over financial reporting.

ITEM 8B. OTHER INFORMATION

Submission of Matters to Security Holders

On October 18, 2010, we held a special meeting of stockholders. At the meeting, our stockholders approved an amendment to our certificate of incorporation to increase the total number of authorized shares of our common stock by from 225 million shares to 750 million shares. Of 111,931,182 shares of common stock outstanding and entitled to vote at the special meeting, 67,279,781 shares were voted in favor of the proposal and 8,617,627 shares were voted against the proposal, 30,293 shares abstained and there were no broker non-votes. All 408.264045 shares of our Series E convertible preferred stock outstanding and entitled to vote at the special meeting were voted in favor of the proposal. 83,300,087 shares of common stock and shares of Series E convertible preferred stock, voting on an as-converted basis, were voted together, as a single class, in favor of the proposal; 8,612,627 shares were voted against the proposal; 30,293 shares abstained; and there were no broker non-votes. Following the conclusion of the meeting an amendment to our certificate of incorporation effecting the increase in authorized common stock was filed with the Delaware Secretary of State.

Prior to the closing of the Acquisition on April 8, 2011, we amended and restated our certificate of incorporation in order (a) to effect a 1-for-153 reverse split of our common stock; (b) to reduce the number of shares of our authorized common stock from 750,000,000 to 150,000,000; (c) to eliminate the right of the stockholders to act by written consent; and (d) to classify our board of directors into three classes. Class I directors will stand for re-election at our next annual meeting of stockholders, Class II directors will stand for re-election at our 2012 annual meeting of stockholders, and Class III directors will stand for re-election at our 2013 annual meeting of stockholders. Thomas Rockwell Mackie, James S. Manuso and John Niederhuber serve as Class I directors, Stephen A. Hill, Michael F. Tweedle and John Neis serve as Class II directors, and Harry S. Palmin, Jamey P. Weichert and Howard M. Schneider serve as Class III directors. The resolutions of stockholders approving the aforesaid amendments and reverse split were adopted by written consent.

PART III

ITEM 9. DIRECTORS, EXECUTIVE OFFICERS, AND CORPORATE GOVERNANCE

Our current directors and executive officers are:

Name	Age	Position
Stephen A. Hill, B.M. B.Ch., M.A., F.R.C.S.	52	Chairman of the Board
Harry S. Palmin	41	President, Chief Executive Officer and Director
Kimberly A. Hawkins	38	Vice President of Clinical Development
Christopher J. Pazoles, Ph.D.	61	Vice President of Research and Development
Joanne M. Protano	42	Vice President, Chief Financial Officer and Treasurer
Jamey P. Weichert, Ph.D.	54	Chief Scientific Officer and Director
Thomas Rockwell Mackie, Ph.D.	56	Director
James S. Manuso, Ph.D.	62	Director
John Neis	55	Director
John E. Niederhuber, M.D.	72	Director
Howard M. Schneider (1)	67	Director
Michael F. Tweedle, Ph.D.	59	Director

(1) Chairman of the audit committee.

Other than Mr. Schneider continuing in his role as Chairman of the audit committee, committee appointments following the Acquisition have not been determined.

Our executive officers are appointed by, and serve at the discretion of, our board of directors.

Stephen A. Hill. Dr. Hill was elected the chairman of the board of directors of Novelos in September 2007. Dr. Hill has been the President and CEO of 21CB since March 2011. 21CB is a nonprofit initiative of UPMC designed to provide the United States government with a domestic solution for its biodefense and infectious disease biologics portfolio. Dr. Hill served as the President and Chief Executive Officer of Solvay Pharmaceuticals, Inc. since April 2008 until its acquisition by Abbott Laboratories in 2010. Prior to joining Solvay, Dr. Hill had served as ArQule's President and Chief Executive Officer since April 1999. Prior to his tenure at ArQule, Dr. Hill was the Head of Global Drug Development at F. Hoffmann-La Roche Ltd. from 1997 to 1999. Dr. Hill joined Roche in 1989 as Medical Adviser to Roche Products in the United Kingdom. He held several senior positions at Roche, including Medical Director where he was responsible for clinical trials of compounds across a broad range of therapeutic areas, including CNS, HIV, cardiovascular, metabolic and oncology products. Subsequently, he served as Head of International Drug Regulatory Affairs at Roche headquarters in Basel, Switzerland, where he led the regulatory submissions for seven major new chemical entities. Dr. Hill also was a member of Roche's Portfolio Management, Research, Development and Pharmaceutical Division Executive Boards. Prior to Roche, Dr. Hill served seven years with the National Health Service in the United Kingdom in General and Orthopedic Surgery. Dr. Hill is a Fellow of the Royal College of Surgeons of England and holds his scientific and medical degrees from St. Catherine's College at Oxford University. Dr. Hill's extensive experience in a broad range of senior management positions with companies in the life sciences sector make him a highly qualified member of our board of directors.

Harry S. Palmin. Mr. Palmin has served as our president and a director since 1998 and our chief executive officer since January 2005. From 1998 to September 2005, he served as our acting chief financial officer. From 1996 to 1998, he was a vice president at Lehman Brothers and from 1993 to 1996, he was an associate at Morgan Stanley & Co. Mr. Palmin earned a B.A. in economics and business and a M.A. in international economics and finance from the International Business School at Brandeis University. He has also studied at the London School of Economics and the Copenhagen Business School. Mr. Palmin's experience managing the funding and development of our product candidates for 13 years and his knowledge of capital markets are strong qualifications to serve on our board of directors.

Kimberly A. Hawkins. Ms. Hawkins has served as Novelos' vice president of clinical development since November 2010 and served as our director of clinical development since May 2006. She has worked for 17 years in the biopharmaceutical industry managing and overseeing clinical operations for multiple global Phase 1, 2 and 3 clinical studies. From 2001 to 2006, Ms. Hawkins was a senior manager in clinical development at Antigenics, Inc., a cancer biotechnology company where she managed multiple Phase 1 and 2 studies. From 1994 to 2001 she was employed by Genzyme Corporation, Center for Clinical Research Practice where she held the positions of clinical research associate, trainer of good clinical practice and study coordinator. From 1993 to 1994 she held the position of clinical research coordinator at Boston Medical Center. Ms. Hawkins has a B.S. degree in Human Physiology from Boston University and a Masters Degree in Public Health from Boston University School of Public Health.

Christopher J. Pazoles. Dr. Pazoles has served as our vice president of research and development since July 2005. He has 30 years of biopharmaceutical research and development and senior management experience. From May 2004 to June 2005, he held a senior research and development position at the Abbott Bioresearch Center, a division of Abbott Laboratories. From October 2002 to January 2004, he served as chief operating officer and head of research and development at ALS Therapy Development Foundation. From 1994 to October 2002, Dr. Pazoles served as vice president of research for Phytera, Inc. From 1981 to 1994, he served as a researcher and senior manager with Pfizer. Dr. Pazoles holds a Ph.D. in microbiology from the University of Notre Dame.

Joanne M. Protano. Ms. Protano was appointed our vice president, chief financial and accounting officer, and treasurer in December 2007. She has 20 years of finance and senior management experience. She previously held the position of Senior Director of Finance and Controller of the Company from June 2006 to December 2007. From 1996 to 2006, she held various management and senior management positions with Ascential Software, Inc. and predecessor companies including Assistant Controller, Reporting for Ascential Software, Vice President and Chief Financial Officer for the Ascential Software Division of Informix Software, Inc. and Corporate Controller of Ardent Software, Inc. Prior to her tenure in the technology industry, from 1990 to 1996 she was employed by Deloitte and Touche LLP as an audit manager, serving technology and healthcare clients. Ms. Protano received a B.S. in business administration from Bryant College.

Jamey P. Weichert. Dr. Weichert was the primary founder of Cellectar serving as Cellectar's Chairman and Chief Scientific Officer since 2002. He was appointed as the Chief Scientific Officer and a director of the Company at the time of the Acquisition. Dr. Weichert is an Associate Professor of the Departments of Radiology, Medical Physics, Pharmaceutics and member of the Comprehensive Cancer Center at the University of Wisconsin, Madison. He has a bachelors degree in chemistry from the University of Minnesota and a doctorate in medicinal chemistry from the University of Michigan. His research interests include the design, synthesis and evaluation of biomimetic CT and MRI imaging agents and diapeutic radiopharmaceuticals. He has been involved in molecularly targeted imaging agent development his entire professional career and has developed or co-developed several imaging agents nearing clinical trial status. Dr. Weichert serves or has served on the editorial boards of numerous scientific journals and has authored more than 40 peer reviewed publications and 150 abstracts. He also has 20 issued or pending patents related to drug delivery, imaging and contrast agent development. Dr. Weichert's experience founding and managing the development of Cellectar's product candidates and his knowledge of radiation technology are strong qualifications to serve on our board of directors.

Thomas Rockwell Mackie. Dr. Mackie became a director of Novelos at the time of the Acquisition. He served as a director of Cellectar since December 2006. In 1997, he co-founded TomoTherapy Incorporated, a maker of advanced radiation therapy solutions for the treatment of cancer and other diseases and has served as Chairman of its Board of Directors since 1999. Dr. Mackie also served as President of TomoTherapy Inc. from 1997 until 1999 and as Treasurer from 1997 until 2000. Since 1987, Dr. Mackie has been a professor in the departments of Medical Physics and Human Oncology at the University of Wisconsin, where he established the TomoTherapy research program. Dr. Mackie also co-founded Geometrics Corporation (now merged with ADAC Corp.), which developed a radiotherapy treatment planning system. Dr. Mackie currently serves as a director of Shine Medical Technologies and Bioionix Inc. and served on the management committee of Wisconsin Investment Partners from 2006 to 2009. Dr. Mackie has a B.Sc. in Physics from the University of Saskatchewan and a Ph.D. in Physics from the University of Alberta in Edmonton. Dr. Mackie's qualifications to serve on our board of directors include his extensive senior management experience with radiation technology companies.

James S. Manuso. Dr. Manuso has served as one of our directors since August 2007. Since January 2005, Dr. Manuso has served as Chairman, President and Chief Executive Officer of SuperGen, Inc. and has served as a director of SuperGen since February 2001. Dr. Manuso is co-founder and former president and chief executive officer of Galenica Pharmaceuticals, Inc. Dr. Manuso co-founded and was general partner of PrimeTech Partners, a biotechnology venture management partnership, from 1998 to 2002, and Managing General Partner of The Channel Group LLC, an international life sciences corporate advisory firm. He was also president of Manuso, Alexander & Associates, Inc., management consultants and financial advisors to pharmaceutical and biotechnology companies. Dr. Manuso was a vice president and Director of Health Care Planning and Development for The Equitable Companies (now Group Axa), where he also served as Acting Medical Director. He currently serves on the board of privately-held KineMed, Inc. He previously served on the boards of Merrion Pharmaceuticals Ltd. (Dublin, Ireland) Inflazyme Pharmaceuticals, Inc. (Vancouver, Canada), Symbiontics, Inc., (ZyStor, Inc., sold to BioMarin), Quark Biotech, Inc., Galenica Pharmaceuticals, Inc., Supratek Pharma, Inc., and EuroGen, Ltd. (London, UK). Dr. Manuso earned a B.A. in economics and chemistry from New York University, a Ph.D. in experimental psychophysiology from the Graduate Faculty of The New School University, a certificate in health systems management from Harvard Business School, and an executive M.B.A. from Columbia Business School. Dr. Manuso's experience founding, leading and serving as a director for pharmaceutical companies makes him a highly qualified member of our board of directors.

John Neis. Mr. Neis became a director of Novelos at the time of the Acquisition. He served as director of Cellectar since February 2008. Mr. Neis is a Managing Director of Venture Investors LLC and heads the firm's Healthcare practice. He has over 23 years in the venture capital industry and serves on the Board of Directors of companies from formation through initial public offering or sale. Mr. Neis also currently serves on the boards of directors of Virent Energy Systems, Deltanoid Pharmaceuticals, Inviragen, Inc. and Mithridion, Inc. He is a former member of the Boards of Directors of several firms including TomoTherapy, Third Wave Technologies (acquired by Hologic) and NimbleGen Systems (acquired by Roche). Mr. Neis was appointed to the Board of the Wisconsin Technology Council and he also serves on the advisory boards for the Weinert Applied Ventures Program, the University of Wisconsin,Madison Business School and Tandem Press. Mr. Neis has a B.S. in Finance from the University of Utah, and a M.S. in Marketing and Finance from the University of Wisconsin,Madison. He is a Chartered Financial Analyst. Mr. Neis' extensive experience leading emerging companies make him a highly qualified member of our board of directors.

John E. Niederhuber. Dr. Niederhuber became a director of Novelos at the time of the Acquisition. Dr. Niederhuber served as Director of the National Cancer Institute (NCI) from 2005 to 2010. He has also served as NCI's Chief Operating Officer and Deputy Director for Translational and Clinical Sciences. Dr. Niederhuber served as Chair of the National Cancer Advisory Board (NCAB) from 2002 to 2004. In addition to his management and advisory roles, Dr. Niederhuber has remained involved in research, through his laboratory on the National Institutes of Health (NIH) campus. Under his leadership, the Tumor and Stem Cell Biology Section, which is a part of the Cell and Cancer Biology Branch of NCI's Center for Cancer Research, is studying tissue stem cells as the cell-of-origin for cancer. Dr. Niederhuber also holds a clinical appointment on the NIH Clinical Center Medical Staff. As a surgeon, Dr. Niederhuber's clinical emphasis is on gastrointestinal cancer, hepatobiliary (liver, bile duct, and gall bladder) cancer, and breast cancer. He is recognized for his pioneering work in hepatic artery infusion chemotherapy and was the first to demonstrate the feasibility of totally implantable vascular access devices. Dr. Niederhuber is a graduate of Bethany College in West Virginia and the Ohio State University School of Medicine. He was an NIH Academic Trainee in Surgery at the University of Michigan from 1969 to 1970 and was a Visiting Fellow in the Division of Immunology at The Karolinska Institute in Stockholm, Sweden from 1970 to 1971. He completed his training in surgery at the University of Michigan in 1973 and was a member of the faculty of the University of Michigan from 1973 to 1987, being promoted to Professor of Microbiology/Immunology and Professor of Surgery in 1980. During 1986 and 1987, he was Visiting Professor in the Department of Molecular Biology and Genetics at The Johns Hopkins University School of Medicine in Baltimore, MD. Dr. Niederhuber's qualifications to serve on our board of directors include his extensive experience with cancer research.

Howard M. Schneider. Mr. Schneider has served as one of our directors since February 2005. Mr. Schneider is currently retired. From January to December 2003, he served as chief executive officer of Metrosoft, Inc., and had been an advisor to such company from July to December 2002. From May 2000 to May 2001, he served as president of Wofex Brokerage, Inc. and from 1965 to 1999, he served as an executive at Bankers Trust Company holding a variety of positions in the commercial banking and investment banking businesses. Mr. Schneider received a B.A. in economics from Harvard College and a M.B.A. from New York University. Mr. Schneider's extensive senior management experience in the financial sector makes him a highly qualified member of our board of directors.

Michael F. Tweedle. Dr. Tweedle became a director of Novelos at the time of the Acquisition. He is currently Professor and Stefanie Spielman Chair in Cancer Imaging in Radiology and the James Comprehensive Cancer Center of Ohio State University, Director of the Wright Center Molecular Imaging (MI) Agents Laboratory of Ohio State University, and has an adjunct appointment in the Chemistry Department of Ohio State University. Prior to joining Ohio State University, his academic appointments included Adjunct Associate Professor at University of Pennsylvania and the Science Advisory Board of New York University. Dr. Tweedle was the President of Bracco Research USA from 1995 to 2009 where he was the lead scientist and chief executive for creation of new molecular imaging pharmaceuticals. His industrial experience in drug discovery research also includes appointments at Diagnostics Drug Discovery Division at Bristol-Myers Squibb, New England Nuclear, DuPont Pharmaceuticals, and The Squibb Institute for Medical Research. He has invented and led translational development of diagnostic imaging pharmaceuticals for nuclear medicine, one of the first Gd-based MRI agents (ProHanceTM), X ray, Optical and US agents, and a radiotheranostic. In 2005 he won the Harry Fisher Medal. Dr. Tweedle holds a B.A from Knox College, B.A. 1973, a Ph.D. from Rice University Ph.D. and is a Stanford University NRS Fellow. Dr. Tweedle's qualifications to serve on our board of directors include his extensive experience with radiation and cancer research and drug discovery.

Code of Ethics

The board of directors has adopted a Code of Ethics applicable to all of our directors, officers and employees, including our principal executive officer, principal financial officer and principal accounting officer. A copy of the Code of Ethics is available at our website www.novelos.com.

ITEM 10. EXECUTIVE COMPENSATION

Executive Officer Compensation

Summary Compensation: The following table sets forth certain information about the compensation we paid or accrued with respect to our principal executive officer and our two most highly compensated executive officers (other than our chief executive officer) who served as executive officers during the year ended December 31, 2010 and whose annual compensation exceeded $100,000 for that year.

Other annual compensation in the form of perquisites and other personal benefits has been omitted as the aggregate amount of those perquisites and other personal benefits was less than $10,000 for each person listed.

Name and Principal Position	Year	Salary ($)	Bonus ($) (3)	Option Awards ($) (4)	All other compensation ($)	Total ($)
Harry S. Palmin (1)	2010	$ 270,000	$ 0	$ 0	$ 0	$ 270,000
President, Chief Executive Officer	2009	$ 270,000	$ 40,500	$ 131,650	$ 0	$ 442,150
Christopher J. Pazoles (1)	2010	$ 235,000	$ 39,167	$ 0	$ 0	$ 274,167
Vice President of Research and Development	2009	$ 235,000	$ 35,250	$ 105,320	$ 0	$ 375,570
Elias B. Nyberg (1) (2)	2010	$ 225,000	$ 37,500	$ 0	$ 0	$ 262,500
Vice President of Regulatory, Quality and Compliance	2009	$ 225,000	$ 33,750	$ 78,990	$ 0	$ 337,740

(1) There has been no increase to executive base salaries for 2011.
(2) On March 10, 2011, the Company terminated Dr. Nyberg's employment, In connection with that termination, which was without cause, Dr. Nyberg received a payment of approximately $83,000 pursuant to the terms of the executive retention agreement between him and the Company dated May 14, 2010.
(3) Bonus amounts for 2009 were paid in 2010. Bonus amounts for Dr. Pazoles and Dr. Nyberg in 2010 represent retention bonuses paid as of October 1, 2010 pursuant to their respective retention agreements dated May 14, 2010.
(4) The fair value of each stock award was estimated on the grant date using the Black-Scholes option-pricing model. See Note 7 to the financial statements for a description of the assumptions used in estimating the fair value of stock options. There were no option grants during 2010.

Employment Agreements

On January 31, 2006, we entered into an employment agreement with Harry Palmin effective January 1, 2006, whereby he agreed to serve as our president and chief executive officer for an initial term of two years at an annual salary of $225,000. The agreement is automatically renewed for successive one-year terms unless notice of termination is provided by either party at least 90 days prior to the end of such term. The agreement was renewed for an additional one-year term on January 1, 2011 in accordance with its terms. On December 17, 2007, the Board of Directors approved an increase in Mr. Palmin's annual salary to $270,000 effective January 1, 2008. He is eligible to receive an annual cash bonus at the discretion of the compensation committee and he is entitled to participate in our employee fringe benefit plans or programs generally available to our senior executives. The agreement provides that in the event that we terminate Mr. Palmin without cause or he resigns for good reason (as defined below), we will (i) pay Mr. Palmin his pro rata share of the average of his annual bonus paid during the two fiscal years preceding his termination; (ii) pay Mr. Palmin his base salary for 11 months after the date of termination; (iii) continue to provide him benefits for 11 months after the date of termination; and (iv) fifty percent of his unvested stock options will vest. The agreement also contains a non-compete provision, which prohibits Mr. Palmin from competing with us for one year after termination of his employment with us.

"Cause" means (i) gross neglect of duties for which employed; (ii) committing fraud, misappropriation or embezzlement in the performance of duties as our employee; (iii) conviction or guilty or nolo plea of a felony or misdemeanor involving moral turpitude; or (iv) willfully engaging in conduct materially injurious to us or violating a covenant contained in the employment agreement.

"Good Reason" means (i) the failure of our board of directors to elect Mr. Palmin to the offices of president and chief executive officer; (ii) the failure by our stockholders to continue to elect Mr. Palmin to our board of directors; (iii) our failure to pay Mr. Palmin the compensation provided for in the employment agreement, except for across-the-board cuts applicable to all of our officers on an equal percentage basis, provided that such reduction is approved by our board of directors; (iv) relocation of Mr. Palmin's principal place of employment to a location beyond 50 miles of Newton, Massachusetts; (v) a reduction of base salary or material reduction in other benefits or any material change by us to Mr. Palmin's function, duties, authority, or responsibilities, which change would cause Mr. Palmin's position with us to become one of lesser responsibility, importance, or scope; and (vi) our material breach of any of the other provisions of the employment agreement.

On May 14, 2010, Novelos entered into retention agreements with each of its four vice-president executive officers other than its Chief Executive Officer, Harry S. Palmin. The agreements provide for the lump-sum payment of six months' base salary and benefits to each such officer following a termination without cause or a resignation with good reason occurring on or before November 14, 2011. The agreements further provide that if the executives remained employed with us as of October 1, 2010, they would receive a payment of two months' base salary as a retention bonus on that date. The retention bonus, an aggregate of $140,000, was paid in October 2010 and will be deducted from the severance amounts that may become payable upon a subsequent involuntary termination. Elias Nyberg's employment was terminated on March 10, 2011, without cause, and he received a payment of approximately $83,000 pursuant to the executive retention agreement. The agreements expire November 14, 2011. The total remaining amount that may become payable to our Named Executive Officers pursuant to the retention agreements is approximately $86,000 to Christopher Pazoles. Concurrently with the execution of the retention agreements, the employment agreement between the Company and Christopher Pazoles dated July 15, 2005 was terminated.

On May 14, 2010, Novelos also entered into retention agreements with each of its three non-executive employees, including Kimberly Hawkins prior to her appointment as Vice President of Clinical Development. The agreements provide for the lump-sum payment of six months' base salary and benefits to each employee following a termination without cause or a resignation with good reason occurring on or before November 14, 2011. The agreements expire November 14, 2011.

Outstanding Equity Awards at Fiscal Year-End

The following table sets forth certain information regarding stock options held as of December 31, 2010 by the executive officers named in the summary compensation table and does not give effect to the Reverse Split. There were no option grants during 2010.

Name	Individual Grants: Year of Grant	Number of securities underlying unexercised options (#) exercisable)	Number of securities underlying unexercised options (# unexercisable)	Exercise or base price ($/share)	Expiration date
Harry S. Palmin	2009(1)	83,333	166,667	$ 0.75	12/8/2019
	2008(2)	266,667	133,333	0.43	12/15/2018
	2007(2)	200,000	—	0.45	12/17/2017
	2006(2)	150,000	—	0.91	12/11/2016
	2005(3)	250,000	—	0.01	1/31/2015
	2005(3)	150,000	—	0.01	3/31/2015
	2004(4)	330,000	—	0.01	4/1/2014
	2003(5)	7,130	—	0.70	8/1/2013
Christopher J. Pazoles	2009(1)	66,667	133,333	$ 0.75	12/8/2019
	2008(2)	133,334	66,666	0.43	12/15/2018
	2007(2)	125,000	—	0.45	12/17/2017
	2006(2)	100,000	—	0.91	12/11/2016
	2005(6)	100,000	—	0.01	4/8/2015
Elias B. Nyberg	2009(1)	50,000	100,000	$ 0.75	12/8/2019
	2008(2)	66,667	33,333	0.43	12/15/2018
	2008(8)	100,000	—	0.58	4/1/2018

(1) These shares vest quarterly in increments of one-twelfth over three years from the date of grant. The exercise price equals the closing price on the date of grant.
(2) These shares vest annually in increments of one-third over three years from the date of grant. The exercise price equals the closing price on the date of grant.
(3) These shares initially vested over a two-year period. Pursuant to their terms, the shares fully vested upon the completion of a non-bridge loan financing, which occurred in the second quarter of 2005. The exercise price equals the fair market value of our common stock on the date of grant as determined by our board of directors.
(4) These shares initially vested one-third upon grant and one-third annually over the following two years. Pursuant to their terms, one additional year of vesting occurred upon the completion of a non-bridge loan financing, which occurred in the second quarter of 2005. The exercise price equals the fair market value of our common stock on the date of grant as determined by our board of directors.
(5) These shares vest annually in increments of one-third over three years from the date of grant. The exercise price equals the fair market value of our common stock on the date of grant as determined by our board of directors.
(6) These shares vested in increments of one-fourth every six months over two years from the date of grant. The exercise price equals the fair market value of our common stock on the date of grant as determined by our board of directors.
(7) These shares represent the fully vested portion of an option grant made to Mr. Pazoles in consideration of consulting services delivered during 2004. Pursuant to their terms, the shares vested at the completion of the consulting engagement and expire ten years from the date of grant.
(8) These shares were fully vested upon grant. The exercise price equals the closing price on the date of grant.

Options granted pursuant to the 2006 Stock Incentive Plan will become fully vested upon a termination event within one year following a change in control, as defined. A termination event is defined as either termination of employment other than for cause or constructive termination resulting from a significant reduction in either the nature or scope of duties and responsibilities, a reduction in compensation or a required relocation.

Director Compensation

Summary Compensation: The following table sets forth certain information about the compensation we paid or accrued with respect to our directors who served during the year ended December 31, 2010.

Name and Principal Position	Year	Director Fees ($) (3)	Option Awards ($) (4)	All other compensation ($)	Total ($)
Stephen A. Hill, Chairman (1)	2010	$ 39,500	$ —	$ —	$ 39,500
Michael J. Doyle, Director (1)(2)	2010	33,250	—	—	33,250
Sim Fass, Director (1)(2)	2010	32,500	—	—	32,500
James S. Manuso, Director (1)	2010	23,000	—	—	23,000
David B. McWilliams, Director (1)(2)	2010	24,500	—	—	24,500
Howard M. Schneider, Director (1)	2010	39,000	—	—	39,000

(1) As of December 31, 2010, outstanding options to purchase common stock held by directors were as follows: Dr. Hill 350,000; Mr. Doyle 350,000; Dr. Fass 350,000; Dr. Manuso 300,000; Mr. McWilliams 402,778; Mr. Schneider 250,000.
(2) In connection with the Acquisition, Mr. Doyle, Dr. Fass and Mr. McWilliams resigned from the board of directors.
(3) Director fees include all fees earned for director services including quarterly fees, meeting fees and committee chairman fees.
(4) There were no option grants during 2010.

During 2010, we paid our non-employee directors a cash fee of $5,000 per quarter. The non-employee directors also received a fee of $1,500 for any board or committee meeting attended and $750 for each telephonic board or committee meeting in which the director participated. We also paid our chairman an additional annual fee in the amount of $15,000, our non-employee director who serves as the chair of the audit committee an additional annual fee of $10,000 and our non-employee directors who served as the chairman of the compensation and the nominating and corporate governance committees an additional annual fee of $5,000. We reimbursed directors for reasonable out-of-pocket expenses incurred in attending board and committee meetings and undertaking certain matters on our behalf. Directors who are our employees do not receive separate fees for their services as directors. There has been no change to cash fees payable to non-employee directors for 2011.

ITEM 11. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

At the close of business on April 11, 2011, there were 26,808,047 shares of our common stock outstanding. The following table provides information regarding beneficial ownership of our common stock as of April 11, 2011:

- Each person known by us to be the beneficial owner of more than five percent of our common stock;
- Each of our directors;
- Each executive officer named in the summary compensation table; and
- All of our current directors and executive officers as a group.

The address of each executive officer and director is c/o Novelos Therapeutics, Inc., One Gateway Center, Suite 504, Newton, Massachusetts 02458. The persons named in this table have sole voting and investment power with respect to the shares listed, except as otherwise indicated. The inclusion of shares listed as beneficially owned does not constitute an admission of beneficial ownership. Shares included in the "Right to Acquire" column consist of shares that may be purchased through the exercise of options or warrants that are exercisable within 60 days of April 11, 2011. All of the following information gives effect to the 1-for-153 reverse split of our common stock that occurred on April 8, 2011.

Name and Address of Beneficial Owner	Shares Beneficially Owned			
	Outstanding	Right to Acquire	Total	Percentage
Venture Investors LLC (1) (2) University Technology Park 505 S. Rosa Road; Suite 201 Madison, WI 53719	4,534,308	2,000,000	6,534,308	22.7
Jamey P. Weichert (3) c/o Cellectar Inc. 3301 Agriculture Drive Madison, WI 53716	4,706,730	0	4,706,730	17.6
MEG-II Cellectar, LLC (2) (4) 3001 West Beltline Highway, Suite 202 Madison, WI 53713	2,150,401	160,000	2,310,401	8.6
Greenway Properties Inc. (2) 725 Heartland Trail, Suite 102 Madison, WI 53707	1,337,400	1,000,000	1,337,400	8.4
Continuum Investment Limited Partnership (5) P.O. Box 620557 Middleton, WI 53562	1,808,524	0	1,808,524	6.7
Harry S. Palmin (6)	4,190	9,529	13,719	*
Christopher J. Pazoles	0	3,540	3,540	*
Stephen A. Hill	0	2,092	2,092	*
Thomas Rockwell Mackie	116,122	0	116,122	*
James S. Manuso	0	1,765	1,765	*
John Neis (1) (2)	4,534,308	2,000,000	6,534,308	22.7
John E. Neiderhuber	0	0	0	*
Howard M. Schneider	654	1,438	2,092	*
Michael F. Tweedle	0	0	0	*
All directors and officers as a group (12 persons)	9,362,004	2,022,506	11,384,509	39.5

(1) Ownership consists of shares of common stock held by Venture Investors Early Stage Fund IV Limited Partnership and Advantage Capital Wisconsin Partners I, Limited Partnership. VIESF IV GP LLC is the general partner of Venture Investors Early Stage Fund IV Limited Partnership and Venture Investors LLC is the submanager and special limited partner of Advantage Capital Wisconsin Partners I, Limited Partnership. The investment decisions of VIESF IV GP LLC and Venture Investors LLC are made collectively by six managers, including Mr. Neis. Each such manager and Mr. Neis disclaim such beneficial ownership except to the extent of his pecuniary interest therein. The address of Mr. Neis is c/o Venture Investors LLC, 505 South Rosa Road, #201, Madison, Wisconsin 53719.

(2) Shares in the "Right to Acquire" consist of warrants to purchase common stock at a price of $0.75, expiring on March 31, 2016.

(3) Dr. Weichert serves as our Chief Scientific Officer following the Acquisition. The shares beneficially owned by him have been included in the total of directors and officers as a group.

(4) Ownership consists of shares of common stock held by MEG-II Cellectar, LLC and approximately 184,000 shares owned by Bradley L. Hutter. Mr. Hutter is the managing director of Mortenson Equity Management LLC, which is the manager of MEG-II Cellectar, LLC.

(5) Ownership includes shares of common stock held by Cellectar Investor I, LLC. Continuum Investment Limited Partnership is the manager of Cellectar Investor I, LLC.

(6) Ownership of H. Palmin includes shares owned by his wife, Deanna Palmin.

Equity compensation plans

The following table provides information as of December 31, 2010, without giving effect to the Reverse Split, regarding shares authorized for issuance under our equity compensation plans, including individual compensation arrangements.

We have two equity compensation plans approved by our stockholders: the 2000 Stock Option and Incentive Plan and the 2006 Stock Incentive Plan. During 2004 and 2005, we also issued options to our directors and consultants that were not approved by our stockholders. These options are exercisable within a ten-year period from the date of the grant and vest at various intervals with all options being fully vested within three years of the date of grant. The option price per share is not less than the fair market value of our common stock on the date of grant.

Equity compensation plan information

Plan category	Number of shares to be issued upon exercise of outstanding options, warrants and rights (#) (a)	Weighted-average exercise price of outstanding options, warrants and rights ($) (b)	Number of shares remaining available for future issuance under equity compensation plans (excluding shares reflected in column (a)) (#) (c)
Equity compensation plans approved by stockholders	5,914,621	$ 0.66	3,910,000
Equity compensation plans not approved by stockholders	1,617,111	$ 0.66	0
Total	7,531,732	$ 0.66	3,890,000

ITEM 12. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

We are obligated to ZAO BAM, a Russian company engaged in the pharmaceutical business, under a royalty and technology transfer agreement. Mark Balazovsky, a director until November 2006, is the majority shareholder of ZAO BAM. Pursuant to the royalty and technology transfer agreement between Novelos and ZAO BAM, we are required to make royalty payments of 1.2% of net sales of oxidized glutathione-based products. We are also required to pay ZAO BAM $2 million for each new oxidized glutathione-based drug within eighteen months following FDA approval of such drug.

If a royalty is not being paid to ZAO BAM on net sales of oxidized glutathione products, then we are required to pay ZAO BAM 3% of all license revenues. If license revenues exceed our cumulative expenditures including, but not limited to, preclinical and clinical studies, testing, FDA and other regulatory agency submission and approval costs, general and administrative costs, and patent expenses, then we would be required to pay ZAO BAM an additional 9% of the amount by which license revenues exceed our cumulative expenditures. During 2008, we paid ZAO BAM $15,000, which was 3% of the upfront license payment received under the collaboration agreement with Lee's Pharm, described in Note 5 to the financial statements.

On June 28, 2010, we received a letter from counsel to ZAO BAM and ZAO BAM Research Laboratories (collectively, "BAM") alleging that we modified the chemical composition of NOV-002 without prior notice to or approval from BAM, constituting a material breach of a technology and assignment agreement we had entered into with BAM on June 20, 2000 (the "June 2000 Agreement"). The letter references our amendment, submitted to the FDA on August 30, 2005, to our investigational new drug application dated August 1999 as the basis for BAM's claims and demands the transfer of all intellectual property rights concerning NOV-002 to BAM. Mark Balazovsky, a director of Novelos from June 1996 until November 2006 and a shareholder of Novelos through at least June 25, 2010, is, to our knowledge, still the general director and principal shareholder of ZAO BAM. On September 24, 2010, we filed a complaint in Suffolk Superior Court seeking a declaratory judgment by the court that the June 2000 Agreement has been replaced by a subsequent agreement between the parties dated April 1, 2005 (the "April 2005 Agreement"), that the Company's obligations to BAM are governed solely by the April 2005 Agreement and that the obligations of the June 2000 agreement have been performed and fully satisfied. On November 29, 2010, BAM answered our complaint, denying the material allegations and stating its affirmative defenses and certain counterclaims. On January 14, 2011, we responded to the counterclaims, denying BAM's material allegations and stating our affirmative defenses. We believe the counterclaims are without merit and intend to defend vigorously against them.

As a result of the assignment to Novelos of the exclusive worldwide intellectual property and marketing rights of oxidized glutathione (excluding the Russian Territory), Novelos is obligated to the Oxford Group, Ltd., or its assignees, for future royalties. Simyon Palmin, a founder of Novelos, a director until August 15, 2008 and the father of our president and chief executive officer, is president of Oxford Group, Ltd. Mr. Palmin was also an employee of Novelos until September 2008 and performed consulting services to the Company through December 2009. Pursuant to the agreement, as revised May 26, 2005, Novelos is required to pay Oxford Group, Ltd., or its assignees, a royalty in the amount of 0.8% of our net sales of oxidized glutathione-based products.

Director Independence

Other than Howard M. Schneider continuing as the Chair of the Audit Committee, committee appointments following the Acquisition have not yet been determined. Historically, each member of the Audit Committee, the Compensation Committee and the Nominating and Corporate Governance Committee has met the independence requirements of the Nasdaq Stock Market for membership on the committees on which he serves, and we expect that future members of these committees will meet these requirements as well. The board of directors considered the information included in transactions with related parties as outlined above along with other information the board considered relevant, when considering the independence of each director. Neither Harry S. Palmin nor Jamey P. Weichert is an independent director.

ITEM 13. PRINCIPAL ACCOUNTING FEES AND SERVICES

Aggregate fees for professional services by Stowe & Degon LLC for the years ended December 31, 2010 and December 31, 2009 were:

	2010	2009
Audit	$ 81,500	$ 81,500
Audit Related	8,300	5,005
Tax	—	—
All Other	—	—
Total	$ 89,800	$ 86,505

Audit Fees: Audit fees were for professional services rendered for the audit of our annual financial statements, the review of quarterly financial statements and the preparation of statutory and regulatory filings.

Audit-Related Fees: Audit-related fees were for professional services rendered in connection with consents and assistance with review of registration statements filed with the SEC during 2010 and 2009.

Tax Fees: Tax fees consist of fees billed for professional services for tax compliance, tax planning and tax advice. These services include assistance regarding federal, state and international tax compliance and planning, tax audit defense, and mergers and acquisitions. No such services were provided by Stowe & Degon LLC.

All Other Fees: All other fees include assistance with miscellaneous reporting requirements and interpretation of technical issues. No such services were provided by Stowe & Degon LLC.

Policy on Audit Committee Pre-Approval of Audit and Permissible Non-Audit Services of Independent Registered Public Accounting Firm

At present, our audit committee approves each engagement for audit and non-audit services before we engage Stowe & Degon LLC to provide those services.

Our audit committee has not established any pre-approval policies or procedures that would allow our management to engage Stowe & Degon LLC to provide any specified services with only an obligation to notify the audit committee of the engagement for those services. None of the services provided by Stowe & Degon LLC for 2010 or 2009 were obtained in reliance on the waiver of the pre-approval requirement afforded in SEC regulations.

PART IV

ITEM 14. EXHIBITS

			Incorporated by Reference		
Exhibit No.	**Description**	**Filed with this Form 10-K**	**Form**	**Filing Date**	**Exhibit No.**
2.1	Agreement and plan of merger among Common Horizons, Inc., Nove Acquisition, Inc. and Novelos Therapeutics, Inc. dated May 26, 2005		8-K	June 2, 2005	99.2
2.2	Agreement and plan of merger between Common Horizons and Novelos Therapeutics, Inc. dated June 7, 2005		10-QSB	August 15, 2005	2.2
2.3	Agreement and Plan of Merger by and among Novelos Therapeutics, Inc., Cell Acquisition Corp. and Cellectar, Inc. dated April 8, 2011		8-K	April 11, 2011	2.1
3.1	Second Amended and Restated Certificate of Incorporation		8-K	April 11, 2011	3.1
3.2	Amended and Restated By-laws		8-K	August 26, 2009	3.1
10.1	Employment Agreement with Harry S. Palmin dated January 31, 2006*		8-K	February 6, 2006	99.1
10.2	2000 Stock Option and Incentive Plan*		SB-2	November 16, 2005	10.2
10.3	Form of 2004 non-plan non-qualified stock option*		SB-2	November 16, 2005	10.3
10.4	Form of non-plan non-qualified stock option used from February to May 2005*		SB-2	November 16, 2005	10.4
10.5	Form of non-plan non-qualified stock option used after May 2005*		SB-2	November 16, 2005	10.5

Exhibit No.	Description	Filed with this Form 10-K	Incorporated by Reference		
			Form	Filing Date	Exhibit No.
10.6	Form of securities purchase agreement dated May 2005		8-K	June 2, 2005	99.1
10.7	Form of subscription agreement dated September 30, 2005		8-K	October 3, 2005	99.1
10.8	Consideration and new technology agreement dated April 1, 2005 with ZAO BAM		10-QSB	August 15, 2005	10.2
10.9	Letter agreement dated March 31, 2005 with The Oxford Group, Ltd.		10-QSB	August 15, 2005	10.3
10.10	Form of securities purchase agreement dated March 2, 2006		8-K	March 3, 2006	99.2
10.11	Form of common stock purchase warrant dated March 2006		8-K	March 3, 2006	99.3
10.12	2006 Stock Incentive Plan, as amended*		S-1/A	December 7, 2009	10.16
10.13	Form of Incentive Stock Option under Novelos Therapeutics, Inc.'s 2006 Stock Incentive Plan*		8-K	December 15, 2006	10.1
10.14	Form of Non-Statutory Stock Option under Novelos Therapeutics, Inc.'s 2006 Stock Incentive Plan*		8-K	December 15, 2006	10.2
10.15	Form of Non-Statutory Director Stock Option under Novelos Therapeutics, Inc.'s 2006 Stock Incentive Plan*		8-K	December 15, 2006	10.3
10.16	Securities Purchase Agreement dated April 12, 2007		10-QSB	May 8, 2007	10.1
10.17	Letter Amendment dated May 2, 2007 to the Securities Purchase Agreement		10-QSB	May 8, 2007	10.2
10.18	Agreement to Exchange and Consent dated May 1, 2007		10-QSB	May 8, 2007	10.5
10.19	Form of Common Stock Purchase Warrant dated May 2, 2007 issued pursuant to the Agreement to Exchange and Consent dated May 2, 2007		10-QSB	May 8, 2007	4.2
10.20	Securities Purchase Agreement dated March 26, 2008		8-K	April 14, 2008	10.1
10.21	Amendment to Securities Purchase Agreement dated April 9, 2008		8-K	April 14, 2008	10.2
10.22	Securities Purchase Agreement dated August 14, 2008		8-K	August 18, 2008	10.1

10.23	Securities Purchase Agreement dated February 11, 2009	8-K	February 18, 2009	10.1
10.24	Registration Rights Agreement dated February 11, 2009	8-K	February 18, 2009	10.2
10.25	Series D Preferred Stock Consent and Agreement to Exchange dated February 10, 2009	8-K	February 18, 2009	10.3
10.26	Collaboration Agreement dated February 11, 2009**	10-K	March 30, 2009	10.39
10.27	Form of Warrant Exchange Agreement dated August 21, 2009	8-K	August 26, 2009	10.5
10.28	Securities Purchase Agreement dated August 25, 2009	S-1	September 15, 2009	10.41
10.29	Common Stock Purchase Warrant dated August 25, 2009	S-1	September 15, 2009	10.43
10.30	Letter Agreement with LP Clover Limited dated August 25, 2009	S-1	September 15, 2009	10.44
10.31	Letter Agreement with Mundipharma International Corporation Limited dated August 25, 2009	S-1	September 15, 2009	10.45
10.32	Consent and Amendment Agreement dated January 21, 2010	S-1/A	January 26, 2010	10.47
10.33	Form of Executive Retention Agreement dated May 14, 2010*	10-Q	May 17, 2010	10.3
10.34	Form of Placement Agent Agreement Between the Company and Rodman and Renshaw LLC	S-1A	June 25, 2010	10.50
10.35	Written Consent and Waiver of Holders of Series C Convertible Preferred Stock and Series E Convertible Preferred Stock dated July 6, 2010	S-1A	July 7, 2010	10.52
10.36	Form of Common Stock Purchase Warrant to be issued pursuant to the Consent and Waiver of Holders of Series C Convertible Preferred Stock and Series E Convertible Preferred Stock dated July 6, 2010	S-1A	July 7, 2010	10.53
10.37	Form of Securities Purchase Agreement dated July 21, 2010	8-K	July 22, 2010	10.1
10.38	Amendment to Consent and Waiver of Holders of Series C Convertible Preferred Stock and Series E Convertible Preferred Stock dated July 21, 2010	8-K	July 22, 2010	10.2

10.39	Exchange Agreement dated November 30, 2010 between the Company and the holders of Series C Convertible Preferred Stock and Series E Convertible Preferred Stock		8-K	November 30, 2010	10.1
10.40	Form of Common Stock Purchase Warrant dated April 8, 2011		8-K	April 11, 2011	4.3
10.41	Securities Purchase Agreement dated April 8, 2011		8-K	April 11, 2011	10.1
10.42	Placement Agency Agreement dated April 1, 2011		8-K	April 11, 2011	99.1
23.1	Consent of Stowe & Degon LLC	X			
31.1	Certification of chief executive officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002	X			
31.2	Certification of chief financial officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002	X			
32.1	Certification of chief executive officer and chief financial officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002	X			

* Management contract or compensatory plan or arrangement.

** Portions of this exhibit have been omitted pursuant to a confidential treatment order.

SIGNATURES

In accordance with Section 13 or 15(d) of the Exchange Act, the registrant caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

NOVELOS THERAPEUTICS, INC.

By: */s/ Harry S. Palmin*
Harry S. Palmin
Title: President, Chief Executive Officer

Date: April 14, 2011

In accordance with the Exchange Act, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

By: */s/ Harry S. Palmin*
Harry S. Palmin
Title: Chief Executive Officer and Director (Principal Executive Officer)

Date: April 14, 2011

By: */s/ Joanne M. Protano*
Joanne M. Protano
Title: Chief Financial Officer (Principal Accounting Officer)

Date: April 14, 2011

By: */s/ Stephen A. Hill*
Stephen A. Hill
Title: Chairman of the Board of Directors

Date: April 14, 2011

By:
Thomas Rockwell Mackie
Title: Director

Date:

By: */s/ James S. Manuso*
James S. Manuso
Title: Director

Date: April 14, 2011

By: */s/ John Neis*
John Neis
Title: Director

Date: April 14, 2011

By: _____
John E. Neiderhuber
Title: Director

Date: _____

By: */s/ Howard M. Schneider*
Howard M. Schneider
Title: Director

Date: April 14, 2011

By: _____
Michael F. Tweedle
Title: Director

Date: _____

By: _____
Jamey P. Weichert
Title: Chief Scientific Officer and Director

Date: _____

Exhibit 23.1

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors
Novelos Therapeutics, Inc.

We consent to the incorporation by reference of our report dated April 11, 2011 relating to the financial statements of Novelos Therapeutics, Inc. as of December 31, 2010 and 2009 and for the years then ended, which report appears in the Company's Annual Report on Form 10-K, in the Registration Statement No. 333-164398 on Form S-8 of Novelos Therapeutics, Inc.

/s/ Stowe & Degon LLC

Westborough, Massachusetts
April 14, 2011

EXHIBIT 31.1

CERTIFICATION PURSUANT TO
SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Harry S. Palmin, Chief Executive Officer and President, Novelos Therapeutics, Inc., certify that:

1. I have reviewed this Annual Report on Form 10-K of Novelos Therapeutics, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed, under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

/s/ HARRY S. PALMIN
Harry S. Palmin
Principal Executive Officer

Date: April 14, 2011

EXHIBIT 31.2

CERTIFICATION PURSUANT TO
SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Joanne M. Protano, Chief Financial Officer, Novelos Therapeutics, Inc., certify that:

1. I have reviewed this Annual Report on Form 10-K of Novelos Therapeutics, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed, under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

/s/ JOANNE M. PROTANO
Joanne M. Protano
Principal Financial Officer

Date: April 14, 2011

Exhibit 32.1

CERTIFICATION PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report on Form 10-K of Novelos Therapeutics, Inc. (the "Company") for the year ended December 31, 2010, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Harry S. Palmin, Chief Executive Officer and President of the Company, and I, Joanne M. Protano, Chief Financial Officer of the Company, certify, to the best of our knowledge and belief, pursuant to 18 U.S.C.§ 1350, adopted pursuant to §906 of the Sarbanes-Oxley Act of 2002, that:

1) the Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and

2) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ HARRY S. PALMIN
Harry S. Palmin
Principal Executive Officer

/s/ JOANNE M. PROTANO
Joanne M. Protano
Principal Financial Officer

Dated: April 14, 2011

A signed original of this written statement required by Section 906, or other document authenticating, acknowledging, or otherwise adopting the signature that appears in typed form within the electronic version of this written statement required by Section 906, has been provided to Novelos Therapeutics, Inc. and will be retained by Novelos Therapeutics, Inc. and furnished to the Securities and Exchange Commission or its staff upon request.