

**U.S. SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549**

FORM 10-Q

[mark one]

QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(D) OF THE SECURITIES EXCHANGE ACT OF 1934

For the quarterly period ended: September 30, 2012

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

*(State or other jurisdiction of
incorporation or organization)*

04-3321804

*(IRS Employer
Identification No.)*

One Gateway Center, Suite 504, Newton, Massachusetts 02458

(Address of principal executive offices)

(617) 244-1616

(Registrant's telephone number, including area code)

(Former name, former address and former fiscal year, if changed since last report)

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 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 (Do not check if a smaller reporting company) 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

Number of shares outstanding of the issuer's common stock as of the latest practicable date: 46,397,997 shares of common stock, \$0.00001 par value per share, as of November 2, 2012.

NOVELOS THERAPEUTICS, INC.

FORM 10-Q INDEX

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PART I. FINANCIAL INFORMATION

Item 1. Financial Statements

**NOVELOS THERAPEUTICS, INC.
(a Development Stage Company)
CONDENSED CONSOLIDATED BALANCE SHEETS (UNAUDITED)**

	September 30, 2012	December 31, 2011
ASSETS		
CURRENT ASSETS:		
Cash and cash equivalents	\$ 5,597,764	\$ 5,505,960
Restricted cash	55,000	55,000
Prepaid expenses and other current assets	335,979	254,967
Total current assets	5,988,743	5,815,927
FIXED ASSETS, NET	2,697,624	3,044,565
GOODWILL	1,675,462	1,675,462
OTHER ASSETS	27,222	27,222
TOTAL ASSETS	\$ 10,389,051	\$ 10,563,176
LIABILITIES AND STOCKHOLDERS' EQUITY		
CURRENT LIABILITIES:		
Accounts payable and accrued liabilities	\$ 712,808	\$ 478,041
Derivative liability	21,628	23,305
Capital lease obligations, current portion	2,356	2,235
Total current liabilities	736,792	503,581
LONG-TERM LIABILITIES:		
Notes payable	450,000	450,000
Deferred rent	133,209	124,381
Capital lease obligations, net of current portion	2,309	4,091
Total long-term liabilities	585,518	578,472
TOTAL LIABILITIES	1,322,310	1,082,053
CONTINGENCIES (Note 8)		
STOCKHOLDERS' EQUITY:		
Preferred stock, \$0.00001 par value; 7,000 shares authorized; none issued and outstanding as of September 30, 2012 and December 31, 2011	—	—
Common stock, \$0.00001 par value; 150,000,000 shares authorized; 43,460,497 and 36,907,824 shares issued and outstanding at September 30, 2012 and December 31, 2011, respectively	434	369
Additional paid-in capital	47,186,659	40,961,180
Deficit accumulated during the development stage	(38,120,352)	(31,480,426)
Total stockholders' equity	9,066,741	9,481,123
TOTAL LIABILITIES AND STOCKHOLDERS' EQUITY	\$ 10,389,051	\$ 10,563,176

The accompanying notes are an integral part of these financial statements.

NOVELOS THERAPEUTICS, INC.
(a Development Stage Company)
CONSOLIDATED STATEMENTS OF OPERATIONS
(UNAUDITED)

	Three Months Ended September 30,		Nine Months Ended September 30,		Cumulative Development- Stage Period from November 7, 2002 (date of inception) through September 30, 2012
	2012	2011	2012	2011	
COSTS AND EXPENSES:					
Research and development	\$ 1,253,066	\$ 1,005,790	\$ 3,896,005	\$ 2,445,429	\$ 24,701,044
General and administrative	800,952	905,353	2,695,503	1,827,510	12,358,114
Merger costs	—	—	—	746,207	799,133
Total costs and expenses	<u>2,054,018</u>	<u>1,911,143</u>	<u>6,591,508</u>	<u>5,019,146</u>	<u>37,858,291</u>
LOSS FROM OPERATIONS	<u>(2,054,018)</u>	<u>(1,911,143)</u>	<u>(6,591,508)</u>	<u>(5,019,146)</u>	<u>(37,858,291)</u>
OTHER INCOME (EXPENSE):					
Grant income	—	—	—	44,479	244,479
Gain/(loss) on derivative warrants	3,902	3,573	(42,178)	(66,820)	(54,336)
Interest expense, net	(2,096)	(1,469)	(6,240)	(428,015)	(453,365)
Other income	—	—	—	—	1,161
Total other expense, net	<u>1,806</u>	<u>2,104</u>	<u>(48,418)</u>	<u>(450,356)</u>	<u>(262,061)</u>
NET LOSS	<u>(2,052,212)</u>	<u>(1,909,039)</u>	<u>(6,639,926)</u>	<u>(5,469,502)</u>	<u>(38,120,352)</u>
DEEMED DIVIDEND ON WARRANTS	<u>(543,359)</u>	<u>—</u>	<u>(543,359)</u>	<u>—</u>	<u>(543,359)</u>
NET LOSS ATTRIBUTABLE TO COMMON STOCKHOLDERS	<u>\$ (2,595,571)</u>	<u>\$ (1,909,039)</u>	<u>\$ (7,183,285)</u>	<u>\$ (5,469,502)</u>	<u>\$ (38,663,711)</u>
BASIC AND DILUTED NET LOSS ATTRIBUTABLE TO COMMON STOCKHOLDERS PER COMMON SHARE	<u>\$ (0.06)</u>	<u>\$ (0.07)</u>	<u>\$ (0.18)</u>	<u>\$ (0.25)</u>	<u>\$ (2.92)</u>
SHARES USED IN COMPUTING BASIC AND DILUTED NET LOSS ATTRIBUTABLE TO COMMON STOCKHOLDERS PER COMMON SHARE	<u>43,286,515</u>	<u>26,826,157</u>	<u>39,611,899</u>	<u>21,847,984</u>	<u>13,238,063</u>

The accompanying notes are an integral part of these financial statements.

NOVELOS THERAPEUTICS, INC.
(a Development Stage Company)
CONSOLIDATED STATEMENTS OF CASH FLOWS
(UNAUDITED)

	Nine Months Ended		Cumulative
	September 30,		Development-
	2012	2011	Stage Period
			from November
			7, 2002 through
			September 30,
			2012
Net loss	\$ (6,639,926)	\$ (5,469,502)	\$ (38,120,352)
Adjustments to reconcile net loss to cash used in operating activities:			
Depreciation and amortization	384,083	439,587	2,800,121
Stock-based compensation	1,159,911	655,656	4,014,784
Intrinsic value of beneficial conversion feature associated with convertible debt	—	257,973	471,765
Issuance of stock for technology and services	—	—	89,520
Impairment of intangible assets	—	—	19,671
Loss on disposal of fixed assets	—	6,009	36,477
Loss on derivative warrants	42,178	66,820	54,336
Changes in:			
Prepaid expenses and other current assets	(81,012)	(224,548)	(319,809)
Accounts payable and accrued liabilities	234,767	(331,357)	332,679
Accrued interest	—	158,672	463,722
Deferred rent	8,828	6,083	133,209
Cash used in operating activities	<u>(4,891,171)</u>	<u>(4,434,607)</u>	<u>(30,023,877)</u>
CASH FLOWS FROM INVESTING ACTIVITIES:			
Cash acquired in a business combination	—	905,649	905,649
Purchases of fixed assets	(37,142)	(112,195)	(5,523,734)
Proceeds from sale of fixed assets	—	—	7,000
Purchases of short-term certificates of deposit	—	—	(5,500,730)
Proceeds from short-term certificates of deposit	—	—	5,500,730
Change in restricted cash	—	500,000	(55,000)
Payment for intangible assets	—	—	(19,671)
Cash provided by (used in) investing activities	<u>(37,142)</u>	<u>1,293,454</u>	<u>(4,685,756)</u>
CASH FLOWS FROM FINANCING ACTIVITIES:			
Proceeds from issuance of convertible notes	—	—	2,720,985
Proceeds from long-term obligations	—	—	1,677,945
Payments on long-term obligations	—	(675,743)	(1,227,944)
Payments on capital lease obligations	(1,661)	(1,549)	(6,309)
Proceeds from issuance of common stock, net of issuance costs	4,870,978	4,866,406	36,745,232
Proceeds from exercise of warrants	150,800	—	400,800
Repurchase of common stock	—	—	(31,667)
Cash in lieu of fractional shares in a business combination	—	(145)	(145)
Change in deferred issuance costs	—	(130,800)	28,500
Cash provided by financing activities	<u>5,020,117</u>	<u>4,058,169</u>	<u>40,307,397</u>
INCREASE IN CASH AND EQUIVALENTS	<u>91,804</u>	<u>917,016</u>	<u>5,597,764</u>
CASH AND EQUIVALENTS AT BEGINNING OF PERIOD	<u>5,505,960</u>	<u>673,739</u>	<u>—</u>
CASH AND EQUIVALENTS AT END OF PERIOD	<u>\$ 5,597,764</u>	<u>\$ 1,590,755</u>	<u>\$ 5,597,764</u>
SUPPLEMENTAL DISCLOSURE OF CASH FLOW INFORMATION			
Interest paid	\$ —	\$ 13,716	\$ 208,689
Fair value of derivative warrants reclassified to equity upon cashless exercise	<u>\$ 43,855</u>	<u>\$ 48,339</u>	<u>\$ 92,194</u>
Issuance of common stock in connection with the conversion of notes payable and \$463,722 in accrued interest	\$ —	\$ 3,184,707	\$ 3,184,707
Fair value of assets acquired in exchange for securities in a business combination	<u>\$ —</u>	<u>\$ 78,408</u>	<u>\$ 78,408</u>
Fair value of liabilities assumed in exchange for securities in a business combination	<u>\$ —</u>	<u>\$ (439,616)</u>	<u>\$ (439,616)</u>
Goodwill resulting from business combination	<u>\$ —</u>	<u>\$ 1,675,462</u>	<u>\$ 1,675,462</u>

The accompanying notes are an integral part of these financial statements.

NOVELOS THERAPEUTICS, INC.
(a Development Stage Company)
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (UNAUDITED)

1. NATURE OF BUSINESS, ORGANIZATION AND GOING CONCERN

Novelos Therapeutics, Inc. (“Novelos” or the “Company”) is a pharmaceutical company developing novel drugs for the treatment and diagnosis of cancer. On April 8, 2011, Novelos completed a business combination with Collectar, Inc. (“Collectar”), a privately held Wisconsin corporation that designed and developed products to detect, treat and monitor a wide variety of human cancers, and Cell Acquisition Corp. (the “Merger Subsidiary”), a Wisconsin corporation and a wholly owned subsidiary of Novelos. Pursuant to the transaction Collectar was merged into the Merger Subsidiary (the “Acquisition”, see Note 3). References in these financial statements and notes to “Collectar” relate to the activities and financial information of Collectar prior to the Acquisition, references to “Novelos” relate to the activities and financial information of Novelos prior to the Acquisition and references to “the Company” or “we” or “us” or “our” relate to the activities and obligations of the combined Company following the Acquisition.

Immediately prior to the Acquisition, Novelos completed a 1-for-153 reverse split of its common stock. Novelos then issued to the shareholders of Collectar at that date 17,001,596 shares of its common stock as consideration for the Acquisition, representing a ratio of 0.8435 shares of Novelos common stock in exchange for one share of Collectar common stock (the “Exchange Ratio”) as set forth in the Agreement and Plan of Merger (the “Merger Agreement”) dated April 8, 2011. The shares issued to Collectar shareholders in the Acquisition constituted approximately 85% of Novelos’ outstanding common stock after giving effect to the Acquisition.

Accounting principles generally accepted in the United States require that a company whose security holders retain the majority voting interest in the combined business be treated as the acquirer for financial reporting purposes. Accordingly, the Acquisition was accounted for as a reverse acquisition whereby Collectar, Inc. was treated as the acquirer for accounting and financial reporting purposes. On April 8, 2011, Collectar was merged into the Merger Subsidiary a wholly owned subsidiary of Novelos; as such, the financial statements presented herein as of and for the three and nine months ended September 30, 2012 include the consolidated results of the combined company from January 1, 2012 through September 30, 2012. The financial statements as of and for the three and nine months ended September 30, 2011 include the historical results of Collectar from January 1, 2011 through April 8, 2011, except for the capital structure which has been retroactively adjusted to reflect the legal capital structure of Novelos by applying the Exchange Ratio, and include the consolidated results of the combined company from April 9, 2011 through September 30, 2011. All per-share amounts and outstanding shares prior to the Acquisition, including all common stock equivalents, and stock options, have been retroactively restated in these financial statements and notes for all periods presented to reflect the capital structure of Novelos by applying the Exchange Ratio.

As a result of the Acquisition, the Company has implemented a revised business plan focused on the development of the Collectar compounds. Development of Novelos’ other compounds (NOV-002 and NOV-205) has been suspended. The Company conducts its operations from its headquarters in Madison, Wisconsin and the Company’s executive offices are in Newton, Massachusetts.

The Company is subject to a number of risks similar to those of other small pharmaceutical 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.

The accompanying financial statements have been prepared on a basis that assumes that the Company will continue as a going concern and that contemplates the continuity of operations, realization of assets and the satisfaction of liabilities and commitments in the normal course of business. The Company has incurred losses since inception in devoting substantially all of its efforts toward research and development and has an accumulated deficit of \$38,120,352 at September 30, 2012. During the nine months ended September 30, 2012, the Company generated a net loss of \$6,639,926 and the Company expects that it will continue to generate operating losses for the foreseeable future. The Company believes that its cash on hand, combined with the cash proceeds received from warrant exercises in October 2012 (see Note 10), is adequate to fund operations at budgeted levels through May 2013. On November 2, 2012, the Company completed a private placement of its common stock and warrants for total proceeds of \$2,000,000. The proceeds from the private placement are designated for use towards the construction of a clinical-stage manufacturing facility for I-124-CLR1404 (LIGHT) at the Company's Madison, WI location. The Company estimates that the project will cost a total of approximately \$3,000,000, will take approximately one year to complete and will commence in late 2012, although the Company has not yet entered into contractual commitments with vendors. The Company may obtain the additional capital required to complete the project from additional sales of common stock, proceeds from warrant exercises, and/or from equipment financing. The Company's ability to execute its operating plan beyond May 2013 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. The accompanying financial statements do not include any adjustments that might result from the outcome of this uncertainty.

The accompanying balance sheet as of December 31, 2011 has been derived from audited financial statements. The accompanying unaudited consolidated balance sheet as of September 30, 2012, the consolidated statements of operations for the three and nine months ended September 30, 2012 and 2011 and the cumulative period November 7, 2002 (date of inception) through September 30, 2012, and the consolidated statements of cash flows for the nine months ended September 30, 2012 and 2011 and the cumulative period November 7, 2002 (date of inception) through September 30, 2012 and the related interim information contained within the notes to the consolidated financial statements have been prepared in accordance with the rules and regulations of the Securities and Exchange Commission ("SEC") for interim financial information. Accordingly, they do not include all of the information and the notes required by U.S. generally accepted accounting principles for complete financial statements. In the opinion of management, the unaudited interim consolidated financial statements reflect all adjustments, consisting of normal and recurring adjustments, necessary for the fair presentation of the Company's consolidated financial position at September 30, 2012 and consolidated results of its operations and its cash flows for the three and nine months ended September 30, 2012 and 2011 and the period from November 7, 2002 (inception) to September 30, 2012. The results for the three and nine months ended September 30, 2012 are not necessarily indicative of future results.

These unaudited consolidated financial statements should be read in conjunction with the audited financial statements and related notes thereto included in the Company's Form 10-K, which was filed with the SEC on March 9, 2012.

Goodwill — Intangible assets at September 30, 2012 consist of goodwill recorded in connection with the Acquisition. Goodwill is not amortized, but is required to be evaluated for impairment annually or whenever events or changes in circumstances suggest that the carrying value of an asset may not be recoverable. The Company evaluates goodwill for impairment annually in the fourth fiscal quarter and additionally on an interim basis if an event occurs or there is a change in circumstances, such as a decline in the Company's stock price or a material adverse change in the business climate, which would more likely than not reduce the fair value of the reporting unit below its carrying amount.

Stock-Based Compensation — The Company uses the Black-Scholes option-pricing model to calculate the grant-date fair value of stock option awards. The resulting compensation expense, net of expected forfeitures, for awards that are not performance-based is recognized on a straight-line basis over the service period of the award, which is generally three years for stock options. For stock options with performance-based vesting provisions, recognition of compensation expense, net of expected forfeitures, commences if and when the achievement of the performance criteria is deemed probable. The compensation expense, net of expected forfeitures, for performance-based stock options is recognized over the relevant performance period. Non-employee stock-based compensation is accounted for in accordance with the guidance of Topic 505, *Equity* of the Financial Accounting Standards Board Accounting Standards Codification ("FASB ASC"). As such, the Company recognizes 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 and deemed completed by such non-employees.

Fair Value of Financial Instruments — The guidance under FASB ASC Topic 825, *Financial Instruments*, requires disclosure of the fair value of certain financial instruments. Financial instruments in the accompanying financial statements consist of cash equivalents, accounts payable and long-term obligations. The carrying amount of cash equivalents and accounts payable approximate their fair value due to their short-term nature. The carrying value of long-term obligations, including the current portion, approximates fair value because the fixed interest rate approximates current market interest rates available on similar instruments.

Derivative Instruments — The Company generally does not use derivative instruments to hedge exposures to cash flow or market risks. However, 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 because 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 are 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 shares issuable under such warrants was 27,310 at September 30, 2012. 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 with subsequent changes in fair value recorded as a component of gain or loss on derivatives on the consolidated statements of operations in each reporting period. If these instruments subsequently meet the requirements for equity classification, the Company reclassifies the fair value to equity. At September 30, 2012 and December 31, 2011, these warrants represented the only outstanding derivative instruments issued or held by the Company.

New Accounting Pronouncements — In May 2011, the FASB issued ASU No. 2011-04, *Amendments to Achieve Common Fair Value Measurement and Disclosure Requirements in U.S. Generally Accepted Accounting Principles (“GAAP”) and International Financial Reporting Standards (“IFRSs”)*. This standard updates accounting guidance to clarify the measurement of fair value to align the guidance and improve the comparability surrounding fair value measurement within GAAP and IFRSs. The standard also updates requirements for measuring fair value and expands the required disclosures. The standard does not require additional fair value measurements and was not intended to establish valuation standards or affect valuation practices outside of financial reporting. The adoption of this standard on January 1, 2012 did not have a material impact on the Company’s financial statements or required disclosures.

In September 2011, the FASB issued ASU No. 2011-08, *Intangibles – Goodwill and Other (Topic 350): Testing Goodwill for Impairment*. This standard simplifies how an entity tests goodwill for impairment and allows an entity to first assess qualitative factors in determining whether it is more likely than not that the fair value of a reporting unit is less than its carrying amount as a basis for determining whether it is necessary to perform the two-step goodwill impairment test. This standard is effective for entities as of the beginning of a fiscal year that begins after December 15, 2011, interim and annual periods thereafter. Early adoption is permitted. The Company adopted the provisions of this standard on January 1, 2012. The adoption of this standard did not have a material impact on the Company’s financial statements or required disclosures.

In August 2012, the FASB issued ASU No. 2012-03, *Technical Amendments and Corrections to SEC Section*. This standard provides amendments to SEC Paragraphs Pursuant to SEC Staff Accounting Bulletin No. 114, Technical Amendments Pursuant to SEC Release No. 33-9250, and Corrections Related to FASB Accounting Standards Update 2010-22. The adoption of this standard did not have a material impact on the Company’s financial statements or required disclosures.

In October 2012, the FASB issued ASU No. 2012-04, *Technical Improvements and Corrections*. This standard provides changes and clarification to the codification through reference corrections and source literature amendments. This standard is effective for entities as of the beginning of a fiscal year that begins after December 15, 2012. The Company does not expect that the adoption of this standard will have a material impact on the Company’s financial statements or required disclosures.

2. FAIR VALUE

In accordance with Fair Value Measurements and Disclosures Topic of the FASB ASC 820, 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 quoted 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:

September 30, 2012				
	Level 1	Level 2	Level 3	Fair Value
Liabilities:				
Warrants	\$ -	\$ 21,628	\$ -	\$ 21,628
December 31, 2011				
	Level 1	Level 2	Level 3	Fair Value
Liabilities:				
Warrants	\$ -	\$ 23,305	\$ -	\$ 23,305

The Company uses the Black-Scholes option pricing model and assumptions that consider, among other variables, 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 5).

3. ACQUISITION

Merger Agreement

On April 8, 2011, Novelos acquired Collectar through a merger with and into the Merger Subsidiary, pursuant to the Merger Agreement entered into on that date. As a result of the Acquisition, the Merger Subsidiary, which was renamed Collectar, Inc., owns all assets of and operates the business previously owned and operated by Collectar.

In the Acquisition, the former stockholders of Collectar received an aggregate number of shares of Novelos common stock constituting approximately 85% of the outstanding shares of Novelos common stock, after giving effect to the Acquisition but before giving effect to the concurrent private placement of Novelos securities described below. Prior to the Acquisition, Novelos 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 resulting in 2,959,871 shares of Novelos common stock outstanding. Novelos then issued 17,001,596 shares of Novelos common stock to the stockholders of Collectar upon the effective date of the Acquisition. Warrants and options to purchase Novelos common stock that were outstanding prior to the Acquisition remained outstanding following the Acquisition. These consisted of warrants to purchase a total of 315,164 shares of Novelos common stock with prices ranging from \$16.07 to \$191.25 and options to purchase a total of 49,159 shares of Novelos common stock with prices ranging from \$1.53 to \$1,072.53.

The financial advisor to Collectar in the Acquisition, received a cash fee of \$200,000 upon the completion of the Acquisition in consideration of their services. The financial advisor to Novelos in the Acquisition, received a cash fee of \$250,000 upon the completion of the Acquisition in consideration of their services. These amounts were recorded as merger costs and expensed as incurred on the date of the Acquisition. In addition to the investment banking fees, the Company also incurred an additional \$250,434 of merger-related legal and other costs during the three months ended March 31, 2011, which were included as a component of expense in the respective period.

The Acquisition was completed principally to leverage synergies between Novelos' strategic focus and experience in developing and funding the development of cancer drugs and Collectar's portfolio of cancer-targeted compounds.

Purchase Accounting

The Acquisition was accounted for using the purchase method of accounting as a reverse acquisition. In a reverse acquisition, the post-acquisition net assets of the surviving combined company includes the historical cost basis of the net assets of the accounting acquirer (Collectar) plus the fair value of the net assets of the accounting acquiree (Novelos). Further, under the purchase method, the purchase price is allocated to the assets acquired, liabilities assumed and identifiable intangible assets based on their estimated fair values with the remaining excess purchase price over net assets acquired allocated to goodwill.

The fair value of the consideration transferred in the Acquisition was \$2,219,903 and was calculated as the number of shares of common stock that Collectar would have had to issue (adjusted for the Exchange Ratio) in order for Novelos shareholders to hold a 15% equity interest in the combined Company post-acquisition (but prior to the concurrent private placement), multiplied by the estimated fair value of the Company's common stock on the acquisition date. The estimated fair value of the Company's common stock was based on the offering price of the common stock sold in the private placement which was both completed concurrently with and conditioned upon the closing of the Acquisition. This price was determined to be the best indication of fair value on that date since the price was based on an arm's length negotiation with a group consisting of both new and existing investors that had been advised of the pending Acquisition and assumed similar liquidity risk as those investors holding the majority of shares being valued as purchase consideration.

The following table summarizes the Company's determination of fair values of the assets acquired and the liabilities as of the date of acquisition.

Consideration - issuance of securities	<u>\$ 2,219,903</u>
Prepaid expenses and other assets	\$ 71,892
Fixed assets	6,515
Accrued liabilities	(380,130)
Derivative liability	(59,485)
Goodwill	<u>1,675,462</u>
Total purchase price – net of cash acquired of \$905,649	<u>\$ 1,314,254</u>

The Company determined that the acquired Novelos legacy technology had no value as of the date of the acquisition.

Goodwill

Of the total purchase price of \$2,219,903, \$1,675,462 was allocated to goodwill. Goodwill represents the excess of the purchase price of an acquired business over the fair value of the underlying net tangible and intangible assets. The goodwill includes the value of the Novelos work force (management team). None of the goodwill associated with the Acquisition is deductible for income tax purposes.

The Company is required to perform an annual impairment test related to goodwill, which is performed in the fourth quarter of each year, or sooner if changes in circumstances suggest that the carrying value of an asset may not be recoverable. There were no changes in goodwill during the nine months ended September 30, 2012.

4. STOCKHOLDERS' EQUITY

April 2011 Private Placement

Concurrently with and conditioned upon 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 "April Private Placement"). 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 are subject to adjustment only 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 the investors was \$2,124,286 at issuance and has been included as a component of stockholders' equity.

The securities purchase agreement includes certain registration requirements, which were subsequently extended by the consent of purchasers holding a majority of shares of the Company's common stock issued in the April Private Placement, which holders constituted the requisite holders, as defined. The Company was required to file with the SEC 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 that are not otherwise saleable under an available exemption from registration requirements. The Company was also required to use commercially reasonable efforts to have the registration statement declared effective by July 28, 2012 and is required 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 such time as all the registrable securities covered by the registration statement can be sold under Rule 144 without any volume limitations. The Company filed a registration statement with the SEC on July 17, 2012 covering the resale of 4,000,000 shares of common stock pursuant to the registration requirements and this registration statement was declared effective on July 26, 2012.

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 "Allowed Delay"). If the Company suspends the use of the registration for longer than the Allowed Delay, it may 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 use of the registration statement is no longer suspended, not to exceed 5% of the aggregate purchase price. 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. As of September 30, 2012, and through the date of this filing, the Company has not concluded that it is probable that damages will become due; therefore, no accrual for damages has been recorded.

The Company paid the placement agent for the financing a cash fee equal to \$200,000 and issued warrants to purchase 192,931 shares of its common stock (having an exercise price of \$0.75 and which expire March 31, 2016) in consideration for their advisory services with respect to the financing pursuant to the placement agency agreement. The cash fee was recorded as a reduction of gross proceeds received. The estimated fair value of the warrants issued to the placement agent was \$112,096 and was recorded as a component of stockholders' equity.

December 2011 Underwritten Offering

On December 6, 2011, the Company completed an underwritten public offering of 10,081,667 shares of its common stock and warrants to purchase up to an aggregate of 10,081,667 shares of its common stock at an exercise price of \$0.60 per share, expiring on December 6, 2016, for gross proceeds of \$6,049,000 and net proceeds of \$5,298,140 after deducting transaction costs (the "Underwritten Offering"). The warrant exercise price and the common stock issuable pursuant to such warrant are subject to adjustment only for stock dividends, stock splits and similar capital reorganizations so that the rights of the warrant holders after such event will be equivalent to the rights of the warrant holders prior to such event. The relative fair value of the warrants issued to the investors was \$2,350,320 at issuance and has been included as a component of stockholders' equity. The Company paid the underwriter a cash fee of \$302,000, which was recorded as a reduction of the gross proceeds received.

June 2012 Public Offering

On June 13, 2012, pursuant to securities purchase agreements entered into with investors on June 7, 2012, the Company completed a registered public offering of an aggregate of 5,420,800 shares of its common stock, warrants to purchase up to an aggregate of 5,420,800 at an exercise price of \$1.00 per share, exercisable for 90 days from issuance (the "Class B Warrants"), and warrants to purchase up to an aggregate of 2,710,400 shares of its common stock at an exercise price of \$1.25 per share, exercisable for five years from issuance (the "Class A Warrants"), for total gross proceeds of \$5,420,800 and net proceeds of \$4,870,978 after deducting transaction costs (the "June Offering"). The warrant exercise price and the common stock issuable pursuant to such warrants are subject to adjustment only for stock dividends, stock splits and similar capital reorganizations, in which event the rights of the warrant holders would be adjusted as necessary so that they would be equivalent to the rights of the warrant holders prior to such event. The relative fair value of the warrants issued to the investors was \$1,994,631 at issuance and has been included as a component of stockholders' equity. In the June Offering, the Company paid a cash fee of \$379,456 and issued warrants to purchase 271,040 shares of its common stock at an exercise price of \$1.25 per share expiring on June 13, 2017 to the placement agent. The cash fee was recorded as a reduction of the gross proceeds received. The estimated fair value of the warrants issued to the placement agent was \$255,703 and was recorded as a component of stockholders' equity.

On September 10, 2012, the Company amended the terms of Class B Warrants with investors who held warrants to purchase 5,255,000 shares of our common stock to extend the expiration date for the exercise of such warrants until October 11, 2012. These warrants had been issued in connection with the June Offering, had an expiration date of September 11, 2012 and are exercisable at a price of \$1.00 per share. An investor who held Class B Warrants to purchase 15,000 shares of our common stock did not elect to amend their warrant and such warrants expired on September 11, 2012. The modification of the expiration date of the warrants resulted in a deemed dividend to warrant holders of \$543,359, which was calculated as the difference between the fair value of the warrants immediately before and after the modification using the Black-Scholes option pricing model. The deemed dividend is reflected as an adjustment to net loss to arrive at net loss attributable to common stockholders in the three and nine months ended September 30, 2012. Since the Company had an accumulated deficit at the time of the modification, there was no impact to the components of stockholders' equity as a result of the recognition of the deemed dividend.

During the three months ended September 30, 2012, Class B Warrants were exercised for an aggregate of 150,800 shares of common stock and the Company received aggregate cash proceeds of \$150,800 in respect of those exercises. Subsequent to September 30, 2012, Class B Warrants were exercised for an aggregate of 937,500 shares of common stock and the Company received aggregate cash proceeds of \$937,500. The balance of the Class B Warrants, exercisable for up to 4,317,500 shares of common stock, expired (see Note 10).

Common Stock Warrants

The Company uses the Black-Scholes option pricing model to value warrants and applies assumptions that consider, among other variables, the fair value of the underlying stock, risk-free interest rate, volatility, expected life and dividend rates in estimating fair value for the warrants.

The following table summarizes information with regard to outstanding warrants to purchase common stock as of September 30, 2012.

Offering	Number of Shares Issuable Upon Exercise of Outstanding Warrants	Exercise Price	Expiration Date
June 2012 Public Offering	2,981,440	\$ 1.25	June 13, 2017
June 2012 Public Offering (2)	5,255,000	\$ 1.00	October 11, 2012
December 2011 Underwritten Offering	9,248,334	\$ 0.60	December 6, 2016
April 2011 Private Placement	6,058,811	\$ 0.75	March 31, 2016
Legacy warrants (1)	27,310	\$ 0.60	July 27, 2015
Legacy warrants	105,040	\$ 16.065	July 27, 2015
Legacy warrants	91,524	\$ 99.45-100.98	December 31, 2015
Total	23,767,459		

- (1) The exercise prices of these warrants are subject to adjustment for “down-rounds” and have been accounted for as derivative instruments as described in Note 2.
- (2) During the three months ended September 30, 2012, the Company received exercises with respect to warrants to purchase 150,800 shares of common stock and warrants to purchase 15,000 shares of common stock expired. During October 2012, warrants to purchase 937,500 of common stock were exercised and the remaining warrants to purchase 4,317,500 shares of common stock expired unexercised.

The warrant activity during the nine months ended September 30, 2012 was as follows:

The Company issued 23,495 shares of common stock in connection with the cashless exercise of warrants to purchase 50,419 shares of common stock at \$0.60 per share expiring on July 27, 2015. The Company reclassified \$43,855 from the derivative liability to additional paid-in capital upon the exercise of the warrants.

The Company issued 374,597 shares of common stock in connection with the cashless exercise of warrants to purchase 980,657 shares of common stock at \$0.75 per share expiring on March 31, 2016.

The Company issued 582,981 shares of common stock in connection with the cashless exercise of warrants to purchase 833,333 shares of common stock. The warrants had an expiration date of December 6, 2016 and an exercise price of \$0.60 per share.

The Company issued 150,800 shares of common stock related to the exercise of warrants to purchase 150,800 shares of common stock. The warrants had an expiration date of September 11, 2012 and an exercise price of \$1.00 per share.

On May 7, 2012, warrants to purchase 8,561 shares of common stock at \$191.25 per share expired unexercised. On September 11, 2012, warrants to purchase 15,000 shares of common stock at \$1.00 per share expired unexercised.

5. STOCK-BASED COMPENSATION

Accounting for Stock-Based Compensation

The Company uses the Black-Scholes option-pricing model to calculate the grant-date fair value of stock option awards. The resulting compensation expense, net of expected forfeitures, for non-performance based awards is recognized on a straight-line basis over the service period of the award, which is generally three years for stock options. For stock options with performance-based vesting provisions, recognition of compensation expense, net of expected forfeitures, commences if and when the achievement of the performance criteria is deemed probable. The compensation expense, net of expected forfeitures, for performance-based stock options is recognized over the relevant performance period. Evaluation of the probability of meeting performance targets is evaluated at the end of each reporting period. Non-employee stock-based compensation is accounted for in accordance with the guidance of FASB ASC Topic 505, *Equity*. As such, the Company recognizes 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 and deemed completed 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 granted to non-employee consultants:

	Three Months Ended September 30,		Nine Months Ended September 30,		Cumulative Development Stage Period from November 7, 2002 through September 30,
	2012	2011	2012	2011	2012
	Employee and director stock option grants:				
Research and development	\$ 78,627	\$ 66,402	\$ 234,816	\$ 121,393	\$ 723,374
General and administrative	249,562	213,326	747,808	349,781	2,895,995
	<u>328,189</u>	<u>279,728</u>	<u>982,624</u>	<u>471,174</u>	<u>3,619,369</u>
Non-employee consultant stock option grants:					
Research and development	3,896	29,564	85,265	46,851	121,422
General and administrative	4,351	88,778	92,022	137,631	273,993
	<u>8,247</u>	<u>118,342</u>	<u>177,287</u>	<u>184,482</u>	<u>395,415</u>
Total stock-based compensation	<u>\$ 336,436</u>	<u>\$ 398,070</u>	<u>\$ 1,159,911</u>	<u>\$ 655,656</u>	<u>\$ 4,014,784</u>

During 2011, the Company granted options to purchase 670,200 shares of common stock that vest based upon the achievement of performance-based milestones. As of September 30, 2012, options to purchase 167,550 of shares of common stock pursuant to these performance-based awards remain outstanding and options to purchase 502,650 shares of common stock pursuant to performance-based awards expired when the milestones were not achieved. No compensation expense has been recognized related to the performance-based awards as the Company does not believe that it is probable that the performance targets will be met.

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

	Three and Nine Months Ended September 30, 2012	Nine Months Ended September 30, 2011
Volatility	115%	110%
Risk-free interest rate	0.925%	1.84% – 3.17%
Expected life (years)	6.0	5.5 – 6.25
Dividend	0%	0%
Weighted-average exercise price	\$ 1.00	\$ 1.45
Weighted-average grant-date fair value	\$ 0.85	\$ 1.22

The Company granted 24,000 stock options to employees during the three and nine months ended September 30, 2012 under the Company's 2006 Stock Incentive Plan. The exercise price for the grants made during the three and nine months ended September 30, 2012 were equal to the market value of the Company's common stock on the date of grant. There were no stock options granted in the three months ended September 30, 2011.

Stock Option Activity

A summary of stock option activity under stock option plans is as follows:

	Number of Shares Issuable Upon Exercise of Outstanding Options	Weighted Average Exercise Price	Weighted Average Remaining Contracted Term in Years	Aggregate Intrinsic Value
Outstanding at December 31, 2011	4,827,638	\$ 1.82		
Granted	—			
Outstanding at March 31, 2012	4,827,638	\$ 1.82		
Granted	—			
Outstanding at June 30, 2012	4,827,638	\$ 1.82		
Granted	24,000	\$ 1.00		
Forfeited	(175,884)	\$ 1.36		
Outstanding at September 30, 2012	4,675,754			
Vested, September 30, 2012	<u>1,954,046</u>	\$ 2.92	8.69	<u>\$ 252,062</u>
Unvested, September 30, 2012	<u>2,721,708</u>	\$ 1.06	8.87	<u>\$ 620,198</u>
Exercisable at September 30, 2012	<u>1,954,046</u>	\$ 2.92	8.69	<u>\$ 252,062</u>

The aggregate intrinsic value of options outstanding is calculated based on the positive difference between the estimated per-share fair value of common stock at the end of the respective period and the exercise price of the underlying options. There have been no option exercises to date. Shares of common stock issued upon the exercise of options are from authorized but unissued shares.

As of September 30, 2012, there was \$2,007,878 of total unrecognized compensation cost related to unvested stock-based compensation arrangements. Of this total amount, the Company expects to recognize \$332,937, \$1,052,094, \$512,204 and \$110,643 during 2012, 2013, 2014 and 2015, respectively. The Company expects 2,554,158 in unvested options, excluding performance-based awards, to vest in the future. The weighted-average grant-date fair value of vested and unvested options outstanding at September 30, 2012 was \$1.04 and \$0.87, respectively.

6. INCOME TAXES

The Company accounts for income taxes in accordance with the liability method of accounting. Under this guidance, deferred tax assets or liabilities are computed based on the difference between the financial statement and income tax basis of assets and liabilities, and net operating loss carryforwards, using the enacted tax rates. Deferred income tax expense or benefit is based on changes in the asset or liability from period to period. The Company did not record a provision or benefit for federal, state or foreign income taxes for the three or nine months ended September 30, 2012 or 2011 because the Company has experienced losses on a tax basis since inception. Because of the limited operating history, continuing losses and uncertainty associated with the utilization of the NOLs in the future, management has provided a full allowance against the value of its gross deferred tax asset.

The Company also accounts for the uncertainty in income taxes related to the recognition and measurement of a tax position taken or expected to be taken in an income tax return. The Company follows the applicable accounting guidance on derecognition, classification, interest and penalties, accounting in interim periods, disclosure and transition related to the uncertainty in income tax positions. No uncertain tax positions have been identified.

7. NET LOSS PER SHARE

Basic net loss per share is computed by dividing net loss by the weighted average number of shares of common stock outstanding during the period. Diluted net loss per share is computed by dividing net loss, 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 and convertible debt. Since there is a net loss attributable to common stockholders for the three and nine months ended September 30, 2012 and 2011, 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 all periods presented.

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

	Three Months Ended September 30,		Nine Months Ended September 30,		Cumulative Development- Stage Period from November 7, 2002 (inception) through September 30, 2012
	2012	2011	2012	2011	2012
Warrants	23,767,459	7,327,322	23,767,459	7,327,322	23,767,459
Stock options	4,675,754	3,632,638	4,675,754	3,632,638	4,675,754

8. CONTINGENCIES

Litigation

The Company is party to certain legal matters that existed with Novelos prior to the Acquisition. The following summarizes the status of those matters.

Class Action

A putative federal securities 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 Novelos, 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. On October 1, 2010, the court appointed lead plaintiffs (Boris Urman and Ramona McDonald) and appointed lead plaintiffs' counsel. On October 22, 2010, an amended complaint was filed. The amended complaint claimed, among other things, that Novelos violated Section 10(b) of the Securities Exchange Act of 1934, as amended, and Rule 10b-5 promulgated thereunder in connection with alleged misleading disclosures related to the progress of the Phase 3 clinical trial of NOV-002 for non-small cell lung cancer. In December 2010, the defendants filed a motion to dismiss the complaint with prejudice. On June 23, 2011, the motion to dismiss was granted and the case was dismissed without prejudice. Because the dismissal was without prejudice, the plaintiffs could reinstitute the proceeding by filing an amended complaint. On August 5, 2011, the plaintiffs filed a second amended complaint realleging that the defendants violated Section 10(b) of the Exchange Act and Rule 10b-5 in connection with alleged misleading disclosures related to the Phase 3 clinical trial for NOV-002 in non-small cell lung cancer. In September 2011, the defendants filed a motion to dismiss the second amended complaint. On June 11, 2012, the second amended complaint was dismissed with prejudice. The plaintiffs did not file a notice of appeal prior to the expiration of the deadline for such filing on July 13, 2012.

BAM Dispute

From its inception through 2010, Novelos was primarily engaged in the development of certain oxidized glutathione-based compounds for application as therapies for disease, particularly cancer. These compounds were originally developed in Russia and in June 2000, Novelos acquired commercial rights from the Russian company ("ZAO BAM") which owned the compounds and related Russian patents. In April 2005, Novelos acquired worldwide rights to the compounds (except for the Russian Federation) in connection with undertaking extensive development activities in an attempt to secure US Food and Drug Administration ("FDA") approval of the compounds as therapies. These development activities culminated in early 2010 in an unsuccessful Phase 3 clinical trial of an oxidized glutathione compound (NOV-002) as a therapy for non-small cell lung cancer. After the disclosure of the negative outcome of the Phase 3 clinical trial in 2010, ZAO BAM claimed that Novelos modified the chemical composition of NOV-002 without prior notice to or approval from ZAO BAM, constituting a material breach of the June 2000 technology and assignment agreement. In September 2010, Novelos filed a complaint in Massachusetts Superior Court seeking a declaratory judgment by the court that the June 2000 agreement has been entirely superseded by the April 2005 agreement and that the obligations of the June 2000 agreement have been performed and fully satisfied. ZAO BAM answered the complaint and alleged counterclaims. In August 2011, Novelos filed a motion for judgment on the pleadings as to the declaratory judgment count and all counts of ZAO BAM's amended counterclaims. On October 17, 2011, the court ruled in favor of Novelos on each of the declaratory judgment claims and dismissed all counts of ZAO BAM's counterclaim. Judgment in favor of Novelos was entered on October 20, 2011. On November 14, 2011 ZAO BAM filed a notice of appeal.

We do not anticipate that these litigation contingencies will have a material impact on the Company's future financial position, results of operations or cash flows.

9. RELATED PARTY TRANSACTIONS

Jamey Weichert, the Company's Chief Scientific Officer and principal founder of Collectar, and a director and shareholder of the Company, is a faculty member at the University of Wisconsin-Madison ("UW"). During the three and nine months ended September 30, 2012, the Company made contributions to UW totaling \$62,500 and \$206,500 for use towards unrestricted research activities and paid UW \$0 and \$144,044 for costs associated with clinical trial and other research agreements. The Company made contributions to the UW of \$62,500 and \$125,000 during the three and nine months ended September 30, 2011.

10. SUBSEQUENT EVENTS

November Private Placement

On November 2, 2012, the Company completed a private placement of 2,000,000 shares of its common stock, warrants to purchase up to an aggregate of 2,000,000 shares of common stock at an exercise price of \$1.00 per share, exercisable for 90 days from issuance, and warrants to purchase up to an aggregate of 1,000,000 shares of its common stock at an exercise price of \$1.25 per share, exercisable for five years from issuance, for total gross proceeds of \$2,000,000 (the "November Private Placement"). The warrant exercise price and the common stock issuable pursuant to such warrants are subject to adjustment only for stock dividends, stock splits and similar capital reorganizations, in which event the rights of the warrant holders would be adjusted as necessary so that they would be equivalent to the rights of the warrant holders prior to such event. The proceeds from the November Private Placement are designated for use towards the construction of a clinical-stage manufacturing facility for I-124-CLR1404 (LIGHT) at the Company's Madison, WI location. The Company estimates that that the project will cost a total of approximately \$3,000,000, will take approximately one year to complete and will commence in late 2012, although the Company has not yet entered into contractual commitments with vendors. The Company may obtain the additional capital required to complete the project from additional sales of common stock, proceeds from warrant exercises, or from equipment financing.

Warrant Exercises and Expirations

During October 2012, warrants were exercised for an aggregate of 937,500 shares of common stock underlying the warrants and the Company received cash proceeds of \$937,500. The warrants were issued in June 2012, had an amended expiration date of October 11, 2012 and an exercise price of \$1.00 per share.

On October 11, 2012, warrants to purchase 4,317,500 shares of common stock at \$1.00 per share expired unexercised.

Stockholder Meeting

On October 25, 2012, the Company held a special meeting in lieu of annual meeting of stockholders. At the meeting, the stockholders reelected Thomas Rockwell Mackie, James S. Manuso and John E. Niederhuber as Class I directors and approved an amendment to the 2006 Stock Incentive Plan to increase the number of shares of common stock issuable thereunder from 7,000,000 to 10,000,000.

Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations

Forward-Looking Statements

This quarterly report on Form 10-Q includes forward-looking statements within the meaning of Section 21E of the Securities Exchange Act of 1934, as amended, which we refer to as the Exchange Act. For this purpose, any statements contained herein regarding our strategy, future operations, financial position, future revenues, projected costs, prospects, plans and objectives of management, other than statements of historical facts, are forward-looking statements. The words "anticipates," "believes," "estimates," "expects," "intends," "may," "plans," "projects," "will," "would" and similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words. We cannot guarantee that we actually will achieve the plans, intentions or expectations disclosed in our forward-looking statements. There are a number of important factors that could cause actual results or events to differ materially from those disclosed in the forward-looking statements we make. These important factors include our significant accounting estimates, such as those for amounts due to clinical research organizations, and clinical investigators and the risk factors set forth below under the caption "Risk Factors". Although we may elect to update forward-looking statements in the future, we specifically disclaim any obligation to do so, even if our estimates change, and readers should not rely on those forward-looking statements as representing our views as of any date subsequent to the date of this quarterly report.

Acquisition

On April 8, 2011, we completed the Acquisition. Immediately prior to the Acquisition, we completed a 1-for-153 reverse split of our common stock. We then issued 17,001,596 shares of our common stock to the former shareholders of Collectar 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. The Acquisition was accounted for as a reverse acquisition whereby Collectar, Inc. was treated as the acquirer for accounting and financial reporting purposes. As such, references to the results of operations prior to April 8, 2011 represent the historical results of Collectar. References to the results of operations subsequent to April 8, 2011 include the consolidated results of the combined company.

As a result of the Acquisition, we have implemented a revised business plan focused on the development of the Collectar compounds. We conduct our operations from Collectar's headquarters in Madison, WI and our executive offices are in Newton, MA. Further development of our other compounds (NOV-002 and NOV-205) has been suspended.

Overview

We are a pharmaceutical company developing novel drugs for the treatment and diagnosis of cancer. Our cancer-targeted compounds are selectively taken up and retained in cancer cells, including cancer stem cells, versus normal cells. Thus, our therapeutic compounds appear to directly kill cancer cells while minimizing harm to normal cells. This offers the potential for a paradigm shift in cancer therapy by providing efficacy versus all three major drivers of mortality in cancer: primary tumors, metastases and stem cell-based relapse. I-124-CLR1404 (LIGHT) is a small-molecule, broad-spectrum, cancer-targeted PET imaging agent. We believe LIGHT has first-in-class potential and Phase 1-2 clinical trials are ongoing across 11 solid tumor indications. I-131-CLR1404 (HOT) is a small-molecule, broad-spectrum, cancer-targeted molecular radiotherapeutic that delivers cytotoxic (cell-killing) radiation directly and selectively to cancer cells and cancer stem cells. We believe HOT also has first-in-class potential. HOT Phase 1b dose-escalation trial is ongoing and, subject to additional funding, we expect HOT to enter Phase 2 trials in the third quarter of 2013 as a monotherapy for solid tumors with significant unmet medical need. CLR1502 (GLOW2) is a preclinical, cancer-targeted, non-radioactive optical imaging agent for intraoperative tumor margin illumination and non-invasive tumor imaging. Together, we believe our compounds are able to "find, treat and follow" cancer anywhere in the body in a novel, effective and highly selective way.

LIGHT is a small-molecule, broad-spectrum, cancer-targeted imaging agent that we believe has first-in-class potential for selective detection of tumors and metastases in a broad range of cancers. LIGHT is comprised of a proprietary phospholipid ether analog (PLE), acting as a cancer-targeted delivery and retention vehicle, covalently labeled with iodine-124, a short-lived PET imaging radioisotope. 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 broad-spectrum, cancer-selective uptake and retention. Investigator-sponsored Phase 1-2 trials of LIGHT as a PET imaging agent are ongoing across 11 solid tumor indications. Initial positive imaging results have been established in patients with lung and brain cancers. These human trials, if successful, would likely provide proof-of-concept for LIGHT as a PET imaging agent with the potential to supplant the current “gold standard” agent, 18F-fluoro-deoxyglucose (FDG), due to what we believe to be LIGHT’s superior cancer-specificity and more favorable logistics of clinical use. As a chemically identical biomarker for HOT, we believe that LIGHT tumor uptake data could accelerate clinical development of HOT by guiding selection of indications for HOT Phase 2 trials and potentially be used in such trials to identify suitable patients and assess therapeutic efficacy. For the same reason, and in view of the quantitative nature of PET imaging, we also believe that LIGHT imaging may be capable of estimating an efficacious dose of HOT in individual patients.

HOT is a small-molecule, broad-spectrum, cancer-targeted molecular radiotherapeutic that we believe has first-in-class potential. HOT is comprised of a proprietary phospholipid ether analog (PLE), acting as a cancer-targeted delivery and retention vehicle, covalently labeled with iodine-131, a cytotoxic (cell-killing) radioisotope that is already in common use to treat thyroid and other cancer types. The ongoing Phase 1b dose-escalation trial is aimed at determining the Maximum Tolerated Dose of HOT. We expect to initiate HOT Phase 2 efficacy trials, subject to additional funding, as a monotherapy for solid tumors with significant unmet medical need as soon as a starting dose is established. We may determine such a dose based on an efficacy signal or an acceptable safety profile in the Phase 1b trial. Selection of indications for Phase 2, as well as aspects of trial design, will be guided by ongoing PET imaging trials in cancer patients with LIGHT, a chemically identical biomarker for HOT. Preclinical experiments in more than a dozen *in vivo* (in animals) tumor models have demonstrated selective killing of cancer cells along with a benign safety profile. In view of HOT’s selective uptake and retention in a wide range of solid tumors and in cancer stem cells, its single-agent efficacy in animal models and its non-specific mechanism of cancer-killing (radiation), we are first developing HOT as a monotherapy for solid tumors with significant unmet medical need.

GLOW2 is a small-molecule, broad-spectrum, cancer-targeted, non-radioactive optical imaging agent that we believe has first-in-class potential for intraoperative tumor margin illumination and non-invasive tumor imaging. GLOW2 is comprised of a proprietary phospholipid ether analog (PLE), acting as a cancer-targeted delivery and retention vehicle, covalently attached to a near-infrared (800nm) fluorophore. According to the American Cancer Society (2011), most cancer patients will have some type of surgery, and Cancer Facts and Figures indicated that approximately 1.3 million cancer patients were diagnosed with solid tumors in the U.S. alone in 2011. GLOW2 may facilitate and enable diagnostic, staging, debulking and curative cancer surgeries, intraoperatively in real time (i.e., during the actual surgical procedure) by defining tumor margins and regional lymph node involvement, resulting in more accurate tumor resectioning and improved outcome and prognosis. In this context, GLOW2 would effectively act as an adjunct therapeutic agent. In preclinical *in vivo* (in animals) tumor models, non-invasive optical imaging showed pronounced accumulation of GLOW2 in tumors versus normal organs and tissues in addition to successfully delineated tumor margins during tumor resection. Thus, GLOW2 may also have utility for non-invasive imaging of relatively superficial tumor types in man (e.g., melanoma, head & neck, colon, esophageal). We expect to submit an IND for GLOW2 in the second half of 2013 and begin clinical trials shortly thereafter, subject to additional funding.

Prior to the Acquisition, for more than 10 years, Novelos 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 Novelos had been developing for use in combination with standard of care chemotherapies for the treatment of solid tumors. From 2005 through 2010 Novelos raised approximately \$67 million in capital for the development of our compounds. From November 2006 through January 2010, Novelos conducted a Phase 3 trial of NOV-002 plus first-line chemotherapy in advanced non-small cell lung cancer which, when completed in February 2010, did not meet its primary and secondary efficacy endpoints. Following the completion of the Phase 3 trial during 2010, Novelos continued clinical development of NOV-002 in breast cancer and NOV-205 in hepatitis C, although further development of those compounds has been suspended. Novelos also explored strategic alternatives which resulted in the completion of the Acquisition in April 2011.

Results of Operations

Executive summary. In March 2010, Collectar completed a Phase 1a dosimetry trial of HQT in humans (the Phase 1a Trial), demonstrating initial safety and establishing dosing parameters for a Phase 1b dose-escalation trial. Following the completion of the Phase 1a Trial and as a result of limited funding, Collectar suspended research and manufacturing activities, terminated certain non-key personnel and implemented salary reductions in an effort to contain costs while Collectar concentrated on its fundraising efforts. The increases in research and development costs for the three and nine months ended September 30, 2012 compared to the three and nine months ended September 30, 2011 are primarily attributable to the recommencement of research activities following the Acquisition. Following the Acquisition, we have resumed development activities including the commencement of clinical trials in HQT and LIGHT.

Research and development expense. Research and development expense consists of costs incurred in identifying, developing and testing and manufacturing product candidates, which primarily include salaries and related expenses for personnel, costs of our research and manufacturing facility, cost of manufacturing materials, fees paid to professional service providers for independent monitoring and analysis of our clinical trials, and costs to secure intellectual property. The Company analyzes its research and development expenses based on four categories as follows: clinical projects, preclinical projects, chemistry and manufacturing costs, and general fixed and overhead costs that are not allocated to the functional project costs, including personnel costs, manufacturing facility costs, related overhead costs and patent costs.

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 insurance, costs for public and investor relations, directors' fees and professional fees for legal and accounting services.

Three Months Ended September 30, 2012 and 2011

Research and Development. Research and development expense for the three months ended September 30, 2012 was approximately \$1,253,000 (comprised of \$176,000 in clinical project costs, \$90,000 of preclinical project costs, \$97,000 of manufacturing and related costs and \$890,000 in general unallocated research and development costs) compared to approximately \$1,006,000 (comprised of \$36,000 in clinical projects, \$73,000 in preclinical projects, \$45,000 in chemistry and manufacturing costs, and \$852,000 in general unallocated research and development costs) for the three months ended September 30, 2011. The \$247,000, or 25%, increase in research and development expense resulted from increases in several categories. The \$140,000 increase in clinical projects and the \$52,000 increase in chemistry, manufacturing and related costs in the three months ended September 30, 2012 versus 2011 were related to costs associated with the ongoing Phase 1-2 trials for LIGHT and the Phase 1b trial for HQT. The \$17,000 increase in preclinical costs for the three months ended September 30, 2012 versus 2011 was related to consulting costs to support preclinical research efforts. The \$38,000 increase in general unallocated research and development costs for the three months ended September 30, 2012 versus 2011 was primarily related to an approximately \$102,000 increase in payroll related to hiring to support the companies development efforts offset by decreases in depreciation, patent expenses and stock-based compensation costs.

General and Administrative. General and administrative expense for the three months ended September 30, 2012 was approximately \$801,000 compared to approximately \$905,000 in the three months ended September 30, 2011. The approximately \$104,000, or 11%, decrease is related primarily to an approximately \$106,000 decrease in legal fees resulting from a \$125,000 reimbursement of retention payment received from our directors and officers insurance carrier following the dismissal with prejudice on June 11, 2012 of the securities litigation described in Note 8. The Company recorded this reimbursement as a reduction of legal fees in the three months ended September 30, 2012.

Gain on Derivative Warrants. We recorded a gain on derivative warrants of approximately \$4,000 in each of the three months ended September 30, 2012 and 2011, respectively. These amounts represent the change in fair value, during the respective period, 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.

Interest expense, net. Interest expense, net for the three months ended September 30, 2012 and 2011 consists of interest related to the Company's outstanding debt from the Wisconsin Department of Commerce and was consistent on a comparative basis.

Deemed Dividend on Warrants. During the three months ended September 30, 2012, we amended the terms of warrants to purchase 5,255,000 shares of our common stock to extend the expiration date for the exercise of such warrants from September 11, 2012 until October 11, 2012. These warrants had been issued in connection with the June Offering, had an expiration date of September 11, 2012 and were exercisable at a price of \$1.00 per share. The modification of the expiration date of the warrants resulted in a deemed dividend to warrant holders of approximately \$543,000 which was calculated as the difference between the fair value of the warrants immediately before and after the modification using the Black-Scholes option pricing model.

The deemed dividends have been included in the calculation of net loss attributable to common stockholders of approximately \$2,596,000, or \$0.06 per share, for the three months ended September 30, 2012. The deemed dividends are excluded from our net loss (from operating activities) of approximately \$2,052,000, or \$0.05 per share, for the three months ended September 30, 2012.

No deemed dividend was recorded in the three months ended September 30, 2011.

Nine Months Ended September 30, 2012 and 2011

Research and Development. Research and development expense for the nine months ended September 30, 2012 was approximately \$3,896,000 (comprised of \$596,000 in clinical project costs, \$252,000 of preclinical project costs, \$330,000 of manufacturing and related costs and \$2,718,000 in general unallocated research and development costs) compared to approximately \$2,445,000 (comprised of \$37,000 in clinical project costs, \$141,000 of preclinical project costs, \$95,000 of chemistry, manufacturing and related costs and \$2,172,000 in general unallocated research and development costs) for the same period in 2011. The approximately \$1,451,000, or 59%, increase in research and development expense occurred in several categories. The \$559,000 increase in clinical projects in the nine months ended September 30, 2012 versus the comparable period in 2011 is related to costs associated with the Phase 1-2 trials for LIGHT and the Phase 1b trial for HOT. The \$111,000 increase in preclinical projects for the nine months ended September 30, 2012 versus the same period in 2011 was related to contributions to the UW towards unrestricted research activities and increased consulting to support preclinical research activities. Manufacturing costs increased \$235,000 primarily as a result of increased chemistry and manufacturing activities to support the clinical trials. General unallocated research and development costs increased approximately \$546,000 primarily as a result of an approximately \$285,000 increase in salary and related costs resulting principally from the addition of employees following the Acquisition; an approximately \$152,000 increase in stock-based compensation associated with recognition of compensation expense over the vesting periods of stock option grants in May and December 2011; an approximately \$67,000 increase in patent expenses and approximately \$18,000 increase in travel costs.

General and Administrative. General and administrative expense for the nine months ended September 30, 2012 was approximately \$2,696,000 compared to approximately \$1,828,000 in the same period of 2011. The \$868,000, or 47%, increase in general and administrative costs was primarily related to the following items: stock-based compensation increased approximately \$352,000 resulting from the recognition of compensation expense over the vesting periods of stock options granted in May and December 2011; salary increased approximately \$293,000 resulting principally from the addition of employees following the Acquisition; the cost of subcontracted services increased by approximately \$120,000 as a result of increased investor relations activities and costs associated with public company reporting. Insurance costs increased approximately \$57,000, directors' fees increased approximately \$39,000, rent increased approximately \$14,000 associated with the addition of the Massachusetts location and travel costs increased approximately \$28,000 due principally to an increase in travel between our Massachusetts and Wisconsin offices. These increases were offset by an approximately \$146,000 decrease in expense attributable to a \$125,000 reimbursement of a retention payment received from the Company's directors and officers insurance carrier following the dismissal with prejudice on June 11, 2012 of the securities litigation described in Note 8. The Company recorded this reimbursement as a reduction of legal fees in the three months ended September 30, 2012.

Merger Costs. We did not incur any merger-related costs in the nine months ended September 30, 2012. Merger costs during the nine months ended September 30, 2011 consisted of \$450,000 in investment banking fees, \$286,000 in legal fees and \$10,000 in insurance costs.

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 payments of approximately \$44,000 in the first nine months of 2011 under a cash grant from the U.S. Internal Revenue Service as a qualifying therapeutic discovery project credit pursuant to Patient Protection and Affordable Care Act. The payments have been recorded as a component of other income. There were no such payments in 2012.

Loss on Derivative Warrants. We recorded losses on derivative warrants of approximately \$42,000 and \$67,000 in the nine months ended September 30, 2012 and 2011, respectively. These amounts represent the change in fair value, during the respective period, 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.

Interest expense, net. Interest expense, net for the nine months ended September 30, 2012 and 2011 consists approximately of the following:

	Nine Months Ended September 30,	
	2012	2011
Interest expense, convertible notes	\$ —	\$ (159,000)
Beneficial conversion feature, convertible notes	—	(258,000)
Interest expense, bank note	—	(6,000)
Interest expense, other	(6,000)	(9,000)
Interest income	—	4,000
	<u>\$ (6,000)</u>	<u>\$ (428,000)</u>

Since the Convertible Notes were converted based on revised conversion terms that resulted in the issuance of an additional 343,963 shares of common stock than would have been issued if the Convertible Notes had been converted in accordance with their original terms, the value of these additional shares of approximately \$258,000 was recorded as a component of interest expense in the quarter ended June 30, 2011. The decrease in interest expense on the convertible notes and bank note was a result of the settlement of those obligations in connection with the Acquisition.

Deemed Dividend on Warrant Amendment. During the nine months ended September 30, 2012, the Company amended the terms of its Class B Warrants with certain investors who held warrants to purchase 5,255,000 shares of our common stock to extend the expiration date for the exercise of such warrants until October 11, 2012. These warrants had been issued in connection with the June Offering, had an expiration date of September 11, 2012 and are exercisable at a price of \$1.00 per share. The modification of the expiration date of the warrants resulted in a deemed dividend to warrant holders of approximately \$543,000 which was calculated as the difference between the fair value of the warrants immediately before and after the modification using the Black-Scholes option pricing model.

The deemed dividends have been included in the calculation of net loss attributable to common stockholders of approximately \$7,183,000, or \$0.18 per share, for the nine months ended September 30, 2012. The deemed dividends are excluded from our net loss (from operating activities) of approximately \$6,640,000, or \$0.17 per share, for the nine months ended September 30, 2012.

No deemed dividend was recorded in the nine months ended September 30, 2011.

Liquidity and Capital Resources

We have financed our operations since inception primarily through the sale of equity securities and securities convertible into equity securities. To date, Collectar and Novelos have raised capital aggregating approximately \$120 million. Novelos has raised capital aggregating approximately \$93 million, including proceeds from the April 2011 private placement, the December 2011 underwritten offering, the June 2012 public offering, the November 2012 private placement and cash warrant exercises. Since its inception and prior to the Acquisition, Collectar had raised capital aggregating approximately \$27 million. As of September 30, 2012, we had approximately \$5,598,000 in cash and cash equivalents.

During the nine months ended September 30, 2012, approximately \$4,891,000 in cash was used in operations. During this period we reported a net loss of approximately \$6,640,000. However, this loss included the following non-cash items: an approximately \$42,000 loss on derivative warrants, approximately \$1,160,000 in stock-based compensation, and approximately \$384,000 in depreciation and amortization expense. Changes in working capital provided cash of approximately \$163,000.

During the nine months ended September 30, 2012, we purchased approximately \$37,000 of equipment.

In June 2012 we completed a public offering of our common stock and warrants for net proceeds of approximately \$4,871,000. During the nine months ended September 30, 2012, we received approximately \$151,000 in connection with warrant exercises.

The accompanying consolidated financial statements have been prepared on a basis that assumes that we will continue as a going concern and that contemplates the continuity of operations, realization of assets and the satisfaction of liabilities and commitments in the normal course of business. We have incurred losses since inception in devoting substantially all of our efforts toward research and development and had an accumulated deficit of \$38,120,352 at September 30, 2012. During the nine months ended September 30, 2012, we generated a net loss of \$6,639,926 and we expect that we will continue to generate operating losses for the foreseeable future. At September 30, 2012, our cash balance was approximately \$5,598,000. We believe our cash on hand, combined with the proceeds received from the exercise of warrants to purchase common stock during October 2012, is adequate to fund operations through May 2013. On November 2, 2012, we completed a private placement of our common stock and warrants that generated gross proceeds of \$2,000,000. The proceeds from the private placement are designated for use towards the construction of a clinical-stage manufacturing facility for I-124-CLR1404 (LIGHT) at our Madison, WI location. We estimate that that the project will cost a total of approximately \$3,000,000, will take approximately one year to complete and will commence in late 2012, although we have not yet entered into contractual commitments with vendors. We may seek to obtain the additional capital required to complete the project from additional sales of common stock, proceeds from warrant exercises, and/or from equipment financing. Our ability to execute our operating plan beyond May 2013 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 these financing alternatives; however there can be no assurance that we will obtain the necessary funding in the amounts we seek to obtain. We have in the past successfully completed multiple rounds of financing but, due to market conditions and other factors, including our development stage, the proceeds we have been able to secure have been less than the amounts we initially sought to obtain. Other than the uncertainties regarding our ability to obtain additional funding, there are currently no known trends, demands, commitments, events or uncertainties that are likely to materially affect our liquidity.

Item 4. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

Our management, with the participation of our Chief Executive Officer and our Chief Financial Officer, evaluated the effectiveness of our disclosure controls and procedures as of September 30, 2012. Disclosure controls and procedures, as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, are controls and procedures that are designed to ensure that information required to be disclosed in our reports filed or submitted under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the Securities and Exchange Commission's rules and forms and that such information is accumulated and communicated to our management, including our principal executive and financial officers, to allow timely decisions regarding required disclosures.

Based on the evaluation of our disclosure controls and procedures as of September 30, 2012 our Chief Executive Officer and our Chief Financial Officer concluded that, as of such date, our disclosure controls and procedures were operating effectively.

Change in Internal Control over Financial Reporting

The Company's management, in connection with its evaluation of internal controls (with the participation of the Company's principal executive officer and principal financial officer), did not identify any change in internal control over the financial reporting process that occurred during the Company's third quarter of 2012 that would have materially affected, or would have been reasonably likely to materially affect, the Company's internal control over financial reporting.

Limitations on Effectiveness of Controls

In designing and evaluating our disclosure controls and procedures, our management recognizes 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.

PART II. OTHER INFORMATION

Item 1. Legal Proceedings

A putative federal securities 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 Novelos, 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. On October 1, 2010, the court appointed lead plaintiffs (Boris Urman and Ramona McDonald) and appointed lead plaintiffs' counsel. On October 22, 2010, an amended complaint was filed. The amended complaint claimed, among other things, that Novelos violated Section 10(b) of the Securities Exchange Act of 1934, as amended, and Rule 10b-5 promulgated thereunder in connection with alleged misleading disclosures related to the progress of the Phase 3 clinical trial of NOV-002 for non-small cell lung cancer. In December 2010, the defendants filed a motion to dismiss the complaint with prejudice. On June 23, 2011, the motion to dismiss was granted and the case was dismissed without prejudice. Because the dismissal was without prejudice, the plaintiffs could reinstitute the proceeding by filing an amended complaint. In August 2011, the plaintiffs filed a second amended complaint realleging that the defendants violated Section 10(b) of the Exchange Act and Rule 10b-5 in connection with alleged misleading disclosures related to the Phase 3 clinical trial for NOV-002 in non-small cell lung cancer. In September 2011, the defendants filed a motion to dismiss the second amended complaint. On June 11, 2012, the second amended complaint was dismissed with prejudice. The plaintiffs did not file a notice of appeal prior to the expiration of the deadline for such filing on July 13, 2012.

From its inception through 2010, Novelos was primarily engaged in the development of certain oxidized glutathione-based compounds for application as therapies for disease, particularly cancer. These compounds were originally developed in Russia and in June 2000, Novelos acquired commercial rights from the Russian company ("ZAO BAM") which owned the compounds and related Russian patents. In April 2005, Novelos acquired worldwide rights to the compounds (except for the Russian Federation) in connection with undertaking extensive development activities in an attempt to secure US Food and Drug Administration ("FDA") approval of the compounds as therapies. These development activities culminated in early 2010 in an unsuccessful Phase 3 clinical trial of an oxidized glutathione compound (NOV-002) as a therapy for non-small cell lung cancer. After the disclosure of the negative outcome of the Phase 3 clinical trial in 2010, ZAO BAM claimed that Novelos modified the chemical composition of NOV-002 without prior notice to or approval from ZAO BAM, constituting a material breach of the June 2000 technology and assignment agreement. In September 2010, Novelos filed a complaint in Massachusetts Superior Court seeking a declaratory judgment by the court that the June 2000 agreement has been entirely superseded by the April 2005 agreement and that the obligations of the June 2000 agreement have been performed and fully satisfied. ZAO BAM answered the complaint and alleged counterclaims. In August 2011, Novelos filed a motion for judgment on the pleadings as to the declaratory judgment count and all counts of ZAO BAM's amended counterclaims. On October 17, 2011, the court ruled in favor of Novelos on each of the declaratory judgment claims and dismissed all counts of ZAO BAM's counterclaim. Judgment in favor of Novelos was entered on October 20, 2011. On November 14, 2011 ZAO BAM filed a notice of appeal.

Item 1A. Risk Factors

We will require additional capital in order to continue our operations, and may have difficulty raising additional capital.

We expect that we will continue to generate significant operating losses for the foreseeable future. At September 30, 2012, our consolidated cash balance was approximately \$5,598,000. We believe our cash on hand, together with the proceeds received in October 2012 from the exercise of warrants issued in the June 2012 public offering, is adequate to fund operations through May 2013. On November 2, 2012, we completed a private placement of our common stock and warrants that generated gross proceeds of \$2,000,000. The proceeds from the private placement are designated for use towards the construction of a clinical-stage manufacturing facility for I-124-CLR1404 (LIGHT) at our Madison, WI location. We estimate that that the project will cost a total of approximately \$3,000,000, will take approximately one year to complete and will commence in late 2012, although we have not yet entered into contractual commitments with vendors. We may seek to obtain the additional capital required to complete the project from additional sales of common stock, proceeds from warrant exercises, or from equipment financing. We will require additional funds to conduct research and development, establish and conduct pre-clinical and clinical trials, establish commercial-scale manufacturing arrangements and provide for the marketing and distribution of our products. Our ability to execute our operating plan 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. However, there can be no assurance that we will obtain the necessary funding in the amounts we seek or that it will be available on a timely basis or upon terms acceptable to us. If we obtain capital by issuing debt or preferred stock, the holders of such securities would likely obtain rights that are superior to those of holders of our common stock.

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 products;
- costs involved in establishing manufacturing capabilities for clinical trial and commercial quantities of our products;
- 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;
- whether or not we obtain listing on a national exchange and, if not, our prospects for obtaining such listing;
- 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, which would result 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 we cannot secure adequate financing when needed, we may be required to delay, scale back or eliminate one or more of our research and development programs or to enter into license or other arrangements with third parties to commercialize products or technologies that we would otherwise seek to develop ourselves or commercialize ourselves. In such event, our business, prospects, financial condition, and results of operations may be adversely affected.

We are a development stage company with a history of losses and can provide no assurance of our future operating results.

We are a development stage company and have incurred net losses and negative cash flows since inception. We currently have no product revenues and may not succeed in developing or commercializing any products that generate product or licensing revenues. We do not expect to have any products on the market for several years. Our primary activity to date has been research and development. In addition, development of our product candidates requires a process of pre-clinical and clinical testing, during which our product candidates could fail. We may not be able to enter into agreements with one or more companies experienced in the manufacturing and marketing of therapeutic drugs and, to the extent that we are unable to do so, we will not be able to market our product candidates. Whether we achieve profitability will depend on our success in developing, manufacturing, and marketing our product candidates. We have experienced net losses and negative cash flows from operating activities since inception and we expect such losses and negative cash flows to continue in the foreseeable future. For the period from Collectar's inception in November 2002 until the business combination with Novelos on April 8, 2011, and thereafter through September 30, 2012, Collectar (and, from and after the business combination, the Company) incurred aggregated net losses of \$38,120,352. Net loss for the nine months ended September 30, 2012 was \$6,639,926. We may never achieve profitability.

We could suffer monetary damages or incur substantial costs in the event of future legal proceedings.

Because of the nature of our business and our status as a public company, we have been in the past and may be in the future subject to commercial disputes and various other lawsuits arising in the ordinary course of our business, including infringement and other licensing and intellectual property claims, employment matters or investor matters. Any future lawsuits may seek damages, including claims for punitive or other special damages, sometimes in substantial amounts. An adverse ruling or rulings in one or more such lawsuits could, individually or in the aggregate, substantially harm our business. In addition, even if we are successful in defending any such claims, as we have been in the past, such defense could result in substantial costs and divert the attention of management.

Item 2. Unregistered Sales of Equity Securities and Use of Proceeds

On September 13, 2012, the Company issued 123,697 shares of common stock pursuant to the cashless exercise of warrants to purchase 406,451 shares of common stock. The warrants had an expiration date of March 31, 2016 and an exercise price of \$0.75 per share.

Item 3. Defaults Upon Senior Securities

None.

Item 4. Mine Safety Disclosure

None

Item 5. Other Information

On November 1, 2012, we entered into a securities purchase agreement with Renova Industries, Ltd. under which we sold 2,000,000 shares of common stock, warrants to purchase up to an aggregate of 2,000,000 shares of common stock at an exercise price of \$1.00 per share, exercisable for 90 days from issuance, and warrants to purchase up to an aggregate of 1,000,000 shares of common stock at an exercise price of \$1.25 per share, exercisable for five years from issuance, for gross proceeds of \$2,000,000. The transaction closed on November 2, 2012. The securities purchase agreement designated the proceeds for use towards the construction of a clinical-stage manufacturing facility for I-124-CLR1404 (LIGHT) at our Madison, WI location. We estimate that that the project will cost a total of approximately \$3,000,000 and will take approximately one year to complete. We anticipate that construction will commence in late 2012, although we have not yet entered into contractual commitments with vendors. We may seek to obtain the additional capital required to complete the project from additional sales of common stock, proceeds from warrant exercises, and/or from equipment financing.

The sale of common stock and warrants under the securities purchase agreement was exempt from registration under section 4(2) of the Securities Act as a transaction not involving any public offering.

Item 6. Exhibits

Exhibit No.	Description	Filed with this Form 10-K	Incorporation by Reference		
			Form	Filing Date	Exhibit No.
2.1	Agreement and Plan of Merger by and among Novelos Therapeutics, Inc., Cell Acquisition Corp. and Celectar, 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	June 1, 2011	3.1
4.1	Form of common stock certificate		S-1/A	November 9, 2011	4.1
10.1	Form of Amendment to Class B Stock Purchase Warrant		8-K	September 12, 2012	10.1
10.2	Securities Purchase Agreement dated November 1, 2012 between the Company and Renova Industries Ltd.	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			
101	Interactive Data Files	X			

SIGNATURES

In accordance with the requirements of the Exchange Act, the registrant caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

NOVELOS THERAPEUTICS, INC.

Date: November 6, 2012

By: /s/ Harry S. Palmin
Harry S. Palmin
President and Chief Executive Officer

EXHIBIT INDEX

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101	Interactive Data Files	X			

SECURITIES PURCHASE AGREEMENT

THIS SECURITIES PURCHASE AGREEMENT (“**Agreement**”) is made as of this 1st day of November, 2012 by and among Novelos Therapeutics, Inc., a Delaware corporation (the “**Company**”) and Renova Industries Ltd., a company incorporated and registered under the laws of the Bahamas (“**Renova**”).

Recitals:

A. The Company desires, pursuant to this Agreement, to raise the Investment Amount (as defined below) through the issuance and sale, in the aggregate, of the following to Renova (the “**Private Placement**”): (i) 2,000,000 shares (the “**Common Shares**”) of Common Stock, par value \$0.00001 per share (the “**Common Stock**”); (ii) 90-day warrants to acquire an additional 2,000,000 shares of Common Stock with an exercise price of \$1.00 per share; and (iii) 5-year warrants to acquire an additional 1,000,000 shares of Common Stock with an exercise price of \$1.25 per share, such warrants to be in the form of **Exhibit A** annexed hereto and made a part hereof (such warrants, collectively, the “**Warrants**”);

B. Renova desires to purchase from the Company, and the Company desires to issue and sell to Renova, upon the terms and conditions stated in this Agreement, the Common Shares and the Warrants;

C. Subject to the conditions hereinafter set forth, on the Closing Date, Renova will purchase Common Shares and Warrants in the Private Placement for an aggregate purchase price of \$2,000,000.00 (the “**Investment Amount**”); and

D. The Company and Renova are executing and delivering this Agreement in reliance upon the exemption from securities registration afforded by the provisions of Regulation D (“**Regulation D**”), as promulgated by the U.S. Securities and Exchange Commission (the “**SEC**”) under the Securities Act of 1933, as amended, and the rules and regulations promulgated thereunder (the “**1933 Act**”);

NOW, THEREFORE, in consideration of the mutual promises made herein and for other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties hereto agree as follows:

1. **Definitions.** In addition to those terms defined above and elsewhere in this Agreement, for the purposes of this Agreement, the following terms shall have the meanings set forth in this **Section 1**:

“**1933 Act**” has the meaning set forth in the Recitals.

“**1934 Act**” means the Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder.

“**Affiliate**” means, with respect to any Person, any other Person which directly or indirectly Controls, is Controlled by, or is under common Control with, such Person.

“**Agreement**” has the meaning set forth in the Recitals.

“**Business Combination**” means (i) the acquisition by a third party of a majority of the outstanding shares of capital stock of the Company by tender or exchange offer or otherwise where such third party shall have become, directly or indirectly, the beneficial owner (within the meaning of Rule 13d-3 under the 1934 Act) of the securities of the Company representing fifty percent (50%) or more of the Company’s capital stock, (ii) the effectiveness of any merger of the Company with or into a third party, in which the capital stock of the Company immediately prior to such merger represents less than fifty percent (50%) of the voting power (without regard to the effect of any so-called “blocker provisions” of any convertible securities) of the surviving entity (or, if the surviving entity is a wholly owned subsidiary, its parent) immediately after such merger and (iii) the closing of any sale of all or substantially all of the assets of the Company.

“**Business Day**” means a day, other than a Saturday or Sunday, on which banks in New York City are open for the general transaction of business.

“**Closing**” has the meaning set forth in Section 3.1.

“**Closing Date**” has the meaning set forth in Section 3.1.

“**Common Stock**” has the meaning set forth in the Recitals, and also includes any securities into which the Common Stock may be reclassified.

“**Common Stock Equivalents**” means any securities of the Company or the Subsidiaries which entitle the holder thereof to acquire Common Stock at any time, including, without limitation, any debt, preferred stock, rights, options, warrants or other instrument that is at any time convertible into or exercisable or exchangeable for, or otherwise entitles the holder thereof to receive, Common Stock.

“**Company**” has the meaning set forth in the Recitals.

“**Company Counsel**” means Foley Hoag LLP, counsel to the Company.

“**Company’s Knowledge**,” “**Knowledge of the Company**” or any like expression with respect to the Company means the actual knowledge of the officers of the Company and the knowledge that would be reasonably expected to be known by such individuals in the ordinary and usual course of the performance of their professional responsibilities to the Company.

“**Company Counsel Opinion**” means a legal opinion from the Company Counsel, dated as of the Closing Date, in the form attached hereto as Exhibit B.

“**Confidential Information**” means trade secrets, confidential information and know-how (including but not limited to ideas, formulae, compositions, processes, procedures and techniques, research and development information, computer program code, performance specifications, support documentation, drawings, specifications, designs, business and marketing plans, and customer and supplier lists and related information).

“**Control**” means the possession, direct or indirect, of the power to direct or cause the direction of the management and policies of a Person, whether through the ownership of voting securities, by contract or otherwise.

“**Disclosure Schedules**” has the meaning set forth in Section 4.

“**Environmental Laws**” has the meaning set forth in Section 4.15.

“**Indebtedness**” shall mean (a) any liabilities for borrowed money or amounts owed in excess of \$50,000 (other than trade accounts payable incurred in the ordinary course of business), (b) all guaranties, endorsements and other contingent obligations in respect of indebtedness of others, whether or not the same are or should be reflected in the Company’s balance sheet (or the notes thereto), except guaranties by endorsement of negotiable instruments for deposit or collection or similar transactions in the ordinary course of business; and (c) the present value of any lease payments in excess of \$50,000 due under leases required to be capitalized in accordance with United States generally accepted accounting principles.

“**Indemnified Person**” has the meaning set forth in Section 8.3.

“**Intellectual Property**” means all of the following: (i) patents, patent applications, patent disclosures and inventions (whether or not patentable and whether or not reduced to practice); (ii) trademarks, service marks, trade dress, trade names, corporate names, logos, slogans and Internet domain names, together with all goodwill associated with each of the foregoing; (iii) copyrights and copyrightable works; (iv) registrations, applications and renewals for any of the foregoing; (v) trade secrets, Confidential Information and know-how (including, but not limited to, ideas, formulae, compositions, manufacturing and production processes and techniques, research and development information, drawings, specifications, designs, business and marketing plans, and customer and supplier lists and related information); and (vi) computer software (including, but not limited to, data, data bases and documentation).

“**Investment Amount**” means an amount equal to \$2,000,000.00.

“**License Agreements**” has the meaning set forth in Section 4.14(b).

“**Losses**” has the meaning set forth in Section 8.2.

“**Material Adverse Effect**” means a material adverse effect on (i) the assets and liabilities, prospects, results of operations, condition (financial or otherwise) or business of the Company, or (ii) the ability of the Company to issue and sell the Securities and to perform its obligations under the Transaction Documents; *provided, however*, that: (A) any adverse effect that results from general economic, business or industry conditions, the taking by the Company of any action permitted or required by the Agreement, or the announcement or pendency of transactions contemplated hereunder, shall not, in and of itself, constitute a “Material Adverse Effect” on the Company, and shall not be considered in determining whether there has been or would be a “Material Adverse Effect” on the Company and (B) a decline in the Company’s stock price shall not, in and of itself, constitute a “Material Adverse Effect” on the Company and shall not be considered in determining whether there has been or would be a “Material Adverse Effect” on the Company.

“**Material Contract**” means any contract of the Company (i) that was required to be filed as an exhibit to the SEC Filings pursuant to Item 601(b)(4) or Item 601(b)(10) of Regulation S-K of the 1933 Act, or (ii) the loss of which could reasonably be expected to have a Material Adverse Effect.

“**Preferred Stock**” means the Company’s preferred stock, par value \$0.00001 per share.

“**Person**” means an individual, corporation, partnership, limited liability company, trust, business trust, association, joint stock company, joint venture, sole proprietorship, unincorporated organization, governmental authority or any other form of entity not specifically listed herein.

“**Press Release**” has the meaning set forth in Section 7.4.

“**Private Placement**” has the meaning set forth in the Recitals.

“**Regulation D**” has the meaning set forth in the Recitals.

“**Rule 144**” has the meaning set forth in Section 7.5.

“**SEC**” has the meaning set forth in the Recitals.

“**SEC Filings**” has the meaning set forth in Section 4.6.

“**Securities**” means the Common Shares, the Warrants and the Warrant Shares.

“**Trading Market**” means the markets or exchanges on which the Common Stock is listed or quoted for trading on the date in question, including without limitation: the NYSE AMEX, the Nasdaq Capital Market, the Nasdaq Global Market, the Nasdaq Global Select Market, the New York Stock Exchange, the OTC Bulletin Board or the OTCQX (or any successors to any of the foregoing).

“**Transaction Documents**” means this Agreement and the Warrants.

“**United States**” shall mean the United States of America, its territories and possessions.

“**Warrant Shares**” means the shares of Common Stock issuable upon exercise of the Warrants.

“**Warrants**” has the meaning set forth in the Recitals.

2. Purchase and Sale of Securities.

Subject to the terms and conditions of this Agreement, including without limitation, the conditions set forth in Section 6, there shall be a Closing at which the Company shall issue and sell, and Renova agrees to purchase, the Common Shares and the Warrants in the Private Placement by executing a counterpart to this Agreement in exchange for the cash consideration consisting of the Investment Amount.

3. Closing.

3.1. Place. The closing of the transactions contemplated by this Agreement (individually, the “**Closing**”; the date of the Closing referred to as the “**Closing Date**”) shall take place at the offices of Company Counsel, Seaport World Trade Center West, 155 Seaport Boulevard, Boston, MA 02210 (or remotely via the electronic exchange of documents and signatures) or at such other location as the parties shall agree.

3.2. Closing. Simultaneously with the execution hereof, the Company shall hold the Closing. At the Closing, the Company will deliver to its transfer agent an irrevocable direction letter instructing it to issue the Common Shares, registered in Renova’s name, and an electronic copy of the signed Warrants exercisable for the Warrant Shares. Following such delivery, Renova shall promptly initiate a wire transfer of immediately available funds (U.S. dollars) equal to \$2,000,000.00 to be delivered to the account of the Company, account details of which are as set forth on Schedule 3.2 affixed hereto.

3.3. Delivery of Original Common Shares and Warrants. As soon as possible after the Closing, but no later than 5 Business Days following the Closing, the Company will deliver by overnight mail, original certificate(s) representing the Common Shares and the original Warrants issued and sold at the Closing.

4. Representations and Warranties of the Company. The Company hereby represents and warrants to Renova on the date hereof and at the Closing, knowing and intending their reliance hereon, that, as of the date hereof except as set forth in the schedules delivered herewith (collectively, the “**Disclosure Schedules**”):

4.1. Organization, Good Standing and Qualification. The Company is a corporation duly incorporated, validly existing and in good standing under the laws of the jurisdiction of its incorporation and has all requisite corporate power and authority to carry on its business as now conducted and to own its properties. The Company is duly qualified to do business as a foreign corporation and is in good standing in each jurisdiction in which the conduct of its business or its ownership or its leasing of property makes such qualification or licensing necessary, unless the failure to so qualify would not have a Material Adverse Effect. Other than Collectar, Inc., a Wisconsin corporation, the Company has no subsidiaries.

4.2. Authorization. The Company has full power and authority and has taken all requisite action on the part of the Company, its officers, directors and stockholders necessary for (i) the authorization, execution and delivery of the Transaction Documents, (ii) authorization of the performance of all obligations of the Company hereunder or thereunder, and (iii) the authorization, issuance (or reservation for issuance) and delivery of the Securities as of the Closing Date. The Transaction Documents constitute the legal, valid and binding obligations of the Company, enforceable against the Company in accordance with their respective terms, subject to bankruptcy, insolvency, fraudulent transfer, reorganization, moratorium and similar laws of general applicability, relating to or affecting creditors' rights generally.

4.3. Capitalization.

(a) Schedule 4.3 sets forth (i) the authorized capital stock of the Company on the date hereof, (ii) the number of shares of capital stock issued and outstanding, (iii) the number of shares of capital stock issuable pursuant to the Company's stock plans, and (iv) the number of shares of capital stock issuable and reserved for issuance pursuant to securities (other than the Securities) exercisable for, or convertible into or exchangeable for any shares of capital stock of the Company. All of the issued and outstanding shares of the Company's capital stock have been duly authorized and validly issued and are fully paid, nonassessable and free of pre-emptive rights and were issued in full compliance with applicable law and any rights of third parties. No Person is entitled to pre-emptive or similar statutory or contractual rights with respect to any securities of the Company. Except as described on Schedule 4.3, there are no outstanding warrants, options, convertible securities or other rights, agreements or arrangements of any character under which the Company is or may be obligated to issue any equity securities of any kind and, except as contemplated by this Agreement, the Company is not currently in negotiations for the issuance of any equity securities of any kind. Except as described on Schedule 4.3, there are no voting agreements, buy-sell agreements, option or right of first purchase agreements or other agreements of any kind among the Company and any of its security holders relating to the securities of the Company. Except as described on Schedule 4.3, the Company has not granted any Person the right to require the Company to register any of its securities under the 1933 Act, whether on a demand basis or in connection with the registration of securities of the Company for its own account or for the account of any other Person.

(b) Schedule 4.3 sets forth a true and complete table setting forth the pro forma capitalization of the Company on a fully diluted basis giving effect to (i) the issuance of the Common Shares and Warrants at the Closing, (ii) any adjustments in other securities resulting from the issuance of the Common Shares and Warrants at the Closing, and (iii) the exercise or conversion of all outstanding securities. Except as described on Schedule 4.3, the issuance and sale of the Securities hereunder will not obligate the Company to issue shares of Common Stock or other securities to any other Person (other than Renova) and will not result in the adjustment of the exercise, conversion, exchange or reset price of any outstanding security.

(c) Except as set forth on Schedule 4.3, the Company does not have outstanding stockholder purchase rights or any similar arrangement in effect giving any Person the right to purchase any equity interest in the Company upon the occurrence of certain events.

(d) Except as set forth on Schedule 4.3, there are no stockholder rights plans, or similar plan or arrangement in effect, including those under which Renova would be considered an “acquiring person” or under which Renova would be deemed to trigger provisions by virtue of Renova’s receipt of Securities under the Transaction Documents.

4.4. Valid Issuance. The Common Shares have been duly and validly authorized as of the relevant Closing Date, and, when issued to Renova in accordance with the terms of this Agreement, will be validly issued, fully paid and nonassessable and shall be free and clear of all liens, claims, encumbrances and restrictions, except for restrictions on transfer set forth in the Transaction Documents or imposed by applicable securities laws. The Warrants have been duly and validly authorized and, upon the due exercise of each Warrant, the applicable Warrant Shares will be validly issued, fully paid and non-assessable, and shall be free and clear of all liens, claims, encumbrances and restrictions, except for restrictions on transfer set forth in the Transaction Documents or imposed by applicable securities laws. The Company has reserved a sufficient number of shares of Common Stock for issuance upon exercise of the Warrants outstanding as of the Closing.

4.5. Consents. The execution, delivery and performance by the Company of the Transaction Documents and the offer, issuance and sale of the Securities require no consent of, action by or in respect of, or filing with, any Person, governmental body, agency, or official other than those consents set forth on Schedule 4.5 and filings that have been made pursuant to applicable state securities laws and post-sale filings pursuant to applicable state and federal securities laws which the Company undertakes to file within the applicable time periods. The Company has taken all action necessary to exempt (i) the issuance and sale of the Securities, (ii) the issuance of the Warrant Shares issuable upon due exercise of each Warrant, and (iii) the other transactions contemplated by the Transaction Documents from the provisions of any anti-takeover, business combination or control share law or statute binding on the Company or to which the Company or any of its assets and properties may be subject or any provision of the Company’s Certificate of Incorporation, Bylaws or any stockholder rights agreement that is or could become applicable to Renova, as a result of the transactions contemplated hereby, including without limitation, the issuance of the Securities and the ownership, disposition or voting of the Securities by Renova or the exercise of any right granted to Renova pursuant to this Agreement or the other Transaction Documents.

4.6. Delivery of SEC Filings; Business. Copies of the Company’s most recent Annual Report on Form 10-K for the fiscal year ended December 31, 2011, the Company’s quarterly reports on Form 10-Q for the quarters ended March 31, 2012 and June 30, 2012, and reports on Form 8-K filed by the Company from January 1, 2012 through the Closing (collectively, the “SEC Filings”) are available on EDGAR. The SEC Filings are the only filings required of the Company pursuant to the 1934 Act for such period. The Company is engaged only in the business described in the SEC Filings and the SEC Filings contain a complete and accurate description in all material respects of the business of the Company.

4.7. No Material Adverse Change. Except as contemplated herein or identified and described on Schedule 4.7(a), since June 30, 2012, there has not been:

(a) any change in the consolidated assets, liabilities, financial condition or operating results of the Company from that reflected in the financial statements included in the SEC Filings, except for changes in the ordinary course of business which have not and could not reasonably be expected to have a Material Adverse Effect, individually or in the aggregate;

(b) any declaration or payment of any dividend, or any authorization or payment of any distribution, on any of the capital stock of the Company, or any redemption or repurchase of any securities of the Company;

(c) any material damage, destruction or loss, whether or not covered by insurance to any assets or properties of the Company or its Subsidiaries;

(d) any waiver, not in the ordinary course of business, by the Company of a material right or of a material debt owed to it;

(e) any satisfaction or discharge of any lien, claim or encumbrance or payment of any obligation by the Company, except in the ordinary course of business and which is not material to the assets, properties, financial condition, operating results, prospects or business of the Company;

(f) any change or amendment to the Company's Certificate of Incorporation or Bylaws, or material change to any Material Contract or arrangement by which the Company is bound or to which any of its assets or properties is subject;

(g) any material labor difficulties or labor union organizing activities with respect to employees of the Company;

(h) any transaction entered into by the Company other than in the ordinary course of business;

(i) loss of the services of any key employee, or material change in the composition or duties of the senior management of the Company;

(j) the loss or threatened loss of any customer which has had or could reasonably be expected to have a Material Adverse Effect; or

(k) any other event or condition of any character that has had or could reasonably be expected to have a Material Adverse Effect.

4.8. SEC Filings. At the time of filing thereof, the SEC Filings complied as to form in all material respects with the requirements of the 1934 Act and did not contain any untrue statement of a material fact or omit to state any material fact necessary in order to make the statements made therein, in the light of the circumstances under which they were made, not misleading. The Company has not registered any of its securities with the SEC under Sections 12(b) or 12(g) of the 1934 Act and is not required to do so by any regulations of any Trading Market, 1934 Act or otherwise by SEC regulations. The Company is required to file reports pursuant to Section 15(d) of the 1934 Act. The Company is not (with or without the lapse of time or the giving of notice, or both) in breach or default of any Material Contract and, to the Company's Knowledge, no other party to any Material Contract is (with or without the lapse of time or the giving of notice, or both) in breach or default of any Material Contract. The Company has not received any notice of the intention of any party to terminate any Material Contract.

4 . 9 . No Conflict, Breach, Violation or Default. The execution, delivery and performance of the Transaction Documents by the Company and the issuance and sale of the Securities will not conflict with or result in a breach or violation of any of the terms and provisions of, or constitute a default under (i) the Company's Certificate of Incorporation or Bylaws, both as in effect on the date hereof (true and accurate copies of which have been provided to Renova before the date hereof), or (ii)(a) any statute, rule, regulation or order of any governmental agency or body or any court, domestic or foreign, having jurisdiction over the Company or any of its respective assets or properties, or (b) except as set forth on Schedule 4.9, any agreement or instrument to which the Company is a party or by which it is bound or to which any of its assets or properties is subject.

4.10. Tax Matters. The Company has timely prepared and filed all tax returns required to have been filed by it with all appropriate governmental agencies and timely paid all taxes shown thereon or otherwise owed by it. The charges, accruals and reserves on the books of the Company in respect of taxes for all fiscal periods are adequate in all material respects, and there are no material unpaid assessments against the Company nor, to the Company's Knowledge, any basis for the assessment of any additional taxes, penalties or interest for any fiscal period or audits by any federal, state or local taxing authority except for any assessment which is not material to the Company. All taxes and other assessments and levies that the Company is required to withhold or to collect for payment have been duly withheld and collected and paid to the proper governmental entity or third party when due. There are no tax liens or claims pending or, to the Company's Knowledge, threatened against the Company or any of its assets or properties. Except as described on Schedule 4.10, there are no outstanding tax sharing agreements or other such arrangements between the Company and any other corporation or entity. The Company is not presently undergoing any audit by a taxing authority, nor has it waived or extended any statute of limitations at the request of any taxing authority.

4.11. Title to Properties. Except as disclosed in the SEC Filings or as set forth on Schedule 4.11, the Company has good and marketable title to all real properties and all other properties and assets owned by it, in each case free from liens, encumbrances and defects that would materially affect the value thereof or materially interfere with the use made or currently planned to be made thereof by the Company; and except as disclosed in the SEC Filings, the Company holds any leased real or personal property under valid and enforceable leases with no exceptions that would materially interfere with the use made or currently planned to be made thereof by the Company.

4 . 1 2 . Certificates, Authorities and Permits. The Company possesses adequate certificates, authorities or permits issued by appropriate governmental agencies or bodies necessary to conduct the business now operated by it, and the Company has not received any notice of proceedings relating to the revocation or modification of any such certificate, authority or permit that, if determined adversely to the Company, could reasonably be expected to have a Material Adverse Effect, individually or in the aggregate.

4.13. No Labor Disputes. No material labor dispute with the employees of the Company exists or, to the Company's Knowledge, is imminent.

4.14. Intellectual Property.

(a) All Intellectual Property of the Company is currently in compliance with all legal requirements (including timely filings, proofs and payments of fees) and is valid and enforceable. Except as listed on Schedule 4.14(a), no Intellectual Property of the Company which is necessary for the conduct of Company's businesses as currently conducted or as currently proposed to be conducted has been or is now involved in any cancellation, dispute or litigation, and, to the Company's Knowledge, no such action is threatened. Except as listed on Schedule 4.14(a), no patent of the Company has been or is now involved in any interference, reissue, re-examination or opposition proceeding.

(b) All of the licenses and sublicenses and consent, royalty or other agreements concerning Intellectual Property which are necessary for the conduct of the Company's business as currently conducted or as currently proposed to be conducted to which the Company is a party or by which any of its assets are bound (other than generally commercially available, non-custom, off-the-shelf software application programs having a retail acquisition price of less than \$25,000 per license) (collectively, "License Agreements") are valid and binding obligations of the Company and, to the Company's Knowledge, the other parties thereto, enforceable in accordance with their terms, except to the extent that enforcement thereof may be limited by bankruptcy, insolvency, reorganization, moratorium, fraudulent conveyance or other similar laws affecting the enforcement of creditors' rights generally, and there exists no event or condition which will result in a material violation or breach of or constitute (with or without due notice or lapse of time or both) a default by the Company under any such License Agreement.

(c) The Company owns or has the valid right to use all of the Intellectual Property that is necessary for the conduct of the Company's business as currently conducted or as currently proposed to be conducted, free and clear of all liens, encumbrances, adverse claims or obligations to license all such owned Intellectual Property and Confidential Information, other than licenses entered into in the ordinary course of the Company's business. The Company has a valid and enforceable right to use all third-party Intellectual Property and Confidential Information used or held for use in the respective business of the Company as currently conducted or as currently proposed to be conducted.

(d) To the Company's Knowledge, the conduct of the Company's business as currently conducted and as currently proposed to be conducted does not and will not infringe any Intellectual Property rights of any third party or any confidentiality obligation owed to a third party. To the Company's Knowledge, the Intellectual Property and Confidential Information of the Company which are necessary for the conduct of Company's business as currently conducted or as currently proposed to be conducted are not being infringed by any third party. Except as set forth on Schedule 4.14(d), there is no litigation or order pending or outstanding or, to the Company's Knowledge, threatened or imminent, that seeks to limit or challenge or that concerns the ownership, use, validity or enforceability of any Intellectual Property or Confidential Information of the Company and the Company's use of any Intellectual Property or Confidential Information owned by a third party, and, to the Company's Knowledge, there is no valid basis for the same.

(e) The consummation of the transactions contemplated hereby will not result in the alteration, loss, impairment of or restriction on the Company's ownership or right to use any of the Intellectual Property or Confidential Information which is necessary for the conduct of the Company's respective business as currently conducted or as currently proposed to be conducted.

(f) To the Company's Knowledge, all software owned by the Company, and, to the Company's Knowledge, all software licensed from third parties by the Company, (i) is free from any material defect, bug, virus, or programming, design or documentation error; (ii) operates and runs in a reasonable and efficient business manner; and (iii) conforms in all material respects to the specifications and purposes thereof.

(g) The Company has taken reasonable steps to protect its rights in its Intellectual Property and Confidential Information. Each employee, consultant and contractor who has had access to Confidential Information which is necessary for the conduct of Company's business as currently conducted or as currently proposed to be conducted has executed an agreement to maintain the confidentiality of such Confidential Information and has executed appropriate agreements that are substantially consistent with the Company's standard forms therefor. To the Company's Knowledge, there has been no material disclosure of any of the Company's Confidential Information to any third party without the Company's consent.

4.15. Environmental Matters. The Company (i) is not in violation of any statute, rule, regulation, decision or order of any governmental agency or body or any court, domestic or foreign, relating to the use, disposal or release of hazardous or toxic substances or relating to the protection or restoration of the environment or human exposure to hazardous or toxic substances (collectively, "Environmental Laws"), (ii) neither owns nor operates any real property contaminated with any substance that is subject to any Environmental Laws, (iii) is not liable for any off-site disposal or contamination pursuant to any Environmental Laws, and (iv) is not subject to any claim relating to any Environmental Laws; which violation, contamination, liability or claim has had or could reasonably be expected to have a Material Adverse Effect, individually or in the aggregate; and there is no pending or, to the Company's Knowledge, threatened investigation that might lead to such a claim.

4.16. Litigation. Except as set forth in Section 4.16, there are no pending actions, suits or proceedings against or affecting the Company or any of its properties; and to the Company's Knowledge, no such actions, suits or proceedings are threatened or contemplated.

4.17. Financial Statements. The financial statements of the Company included in the SEC Filings fairly present the consolidated financial position of the Company as of the dates shown and its consolidated results of operations and cash flows for the periods shown, and such financial statements have been prepared in conformity with United States generally accepted accounting principles applied on a consistent basis. Except as set forth in the financial statements of the Company included in the SEC Filings filed prior to the date hereof, the Company has not incurred any liabilities, contingent or otherwise, except those which, individually or in the aggregate, have not had or could not reasonably be expected to have a Material Adverse Effect.

4.18. Insurance Coverage. The Company maintains in full force and effect insurance coverage and the Company reasonably believes such insurance coverage is adequate. The Company has no reason to believe that it will not be able to renew its existing insurance coverage as and when such coverage expires or to obtain similar coverage from similar insurers as may be necessary to continue its business on terms consistent with market for the Company's lines of business.

4.19. Brokers and Finders. Except as disclosed in Schedule 4.19, no Person will have, as a result of the transactions contemplated by this Agreement, any valid right, interest or claim against or upon the Company or Renova for any commission, fee or other compensation pursuant to any agreement, arrangement or understanding entered into by or on behalf of the Company.

4.20. No Directed Selling Efforts or General Solicitation. Neither the Company nor any Affiliate, nor any Person acting on its behalf has conducted any "general solicitation" or "general advertising" (as those terms are used in Regulation D) in connection with the offer or sale of any of the Securities.

4.21. No Integrated Offering. Neither the Company nor any of its Affiliates, nor any Person acting on its or their behalf has, directly or indirectly, made any offers or sales of any Company security or solicited any offers to buy any security, under circumstances that would cause this offering of the Securities to be integrated with prior offerings by the Company for purposes of the 1933 Act, which would require the registration of any such securities under the 1933 Act or under the rules and regulations of the Trading Market on which any of the securities of the company are listed or designated, including circumstances that would adversely affect reliance by the Company on Section 4(2) of the 1933 Act for the exemption from the registration requirements imposed under Section 5 of the 1933 Act for the transactions contemplated hereby or would require such registration the 1933 Act.

4.22. Private Placement. Subject to the accuracy of the representations and warranties of Renova contained in Section 5 hereof, the offer and sale of the Securities to Renova as contemplated hereby is exempt from the registration requirements of the 1933 Act.

4.23. Questionable Payments. Neither the Company nor, to the Company's Knowledge, any of its current or former stockholders, directors, officers, employees, agents or other Persons acting on its behalf, has on behalf of the Company or in connection with the Company's business: (a) used any corporate funds for unlawful contributions, gifts, entertainment or other unlawful expenses relating to political activity; (b) made any direct or indirect unlawful payments to any governmental officials or employees from corporate funds; (c) established or maintained any unlawful or unrecorded fund of corporate monies or other assets; (d) made any false or fictitious entries on the books and records of the Company; (e) made any unlawful bribe, rebate, payoff, influence payment, kickback or other unlawful payment of any nature; or (f) violated in any material respect any provision of the Foreign Corrupt Practices Act of 1977, as amended.

4.24. Transactions with Affiliates. Except as set forth on Schedule 4.24, none of the officers or directors of the Company and, to the Company's Knowledge, none of the employees of the Company is presently a party to any transaction, or presently contemplated transaction, with the Company (other than for services as employees, officers and directors) that would be required to be disclosed pursuant to Item 404 of Regulation S-K promulgated under the 1933 Act.

4.25. Trading Compliance. The Common Stock is quoted on the OTCQX trading platform and the Company has taken no action designed to, or which to the Company's Knowledge is likely to have the effect of, causing the Common Stock not to continue to be quoted on the OTCQX. No order ceasing or suspending trading in any securities of the Company or prohibiting the issuance and/or sale of the Securities is in effect and no proceedings for such purpose are pending or threatened. The Company is in compliance with all OTCQX rules and regulations in effect as of the Closing necessary to ensure that the Common Stock is authorized to be quoted on the OTCQX.

4.26. Acknowledgment Regarding Renova's Purchase of Securities. The Company acknowledges that Renova is not acting as a financial advisor or fiduciary of the Company (or in any similar capacity) with respect to this Agreement and the transactions contemplated hereby and any advice given by Renova or any of their respective representatives or agents in connection with this Agreement and the transactions contemplated hereby is merely incidental to Renova's purchase of the Securities.

4.27. Sarbanes-Oxley: Internal Accounting Controls. The Company is in material compliance with all provisions of the Sarbanes-Oxley Act of 2002 that are applicable to it as of the Closing. The Company maintains a system of internal accounting controls sufficient to provide reasonable assurance that (i) transactions are executed in accordance with management's general or specific authorizations, (ii) transactions are recorded as necessary to permit preparation of financial statements in conformity with United States general accepted accounting principles and to maintain asset accountability, (iii) access to assets is permitted only in accordance with management's general or specific authorization, and (iv) the recorded accountability for assets is compared with the existing assets at reasonable intervals and appropriate action is taken with respect to any differences. The Company has established disclosure controls and procedures (as defined in 1934 Act Rules 13a-15(e) and 15d-15(e)) for the Company and designed such disclosure controls and procedures to ensure that material information relating to the Company, is made known to the certifying officers by others within those entities, particularly during the period in which the Company's most recently filed periodic report under the 1934 Act, as the case may be, is being prepared. The Company's certifying officers have evaluated the effectiveness of the Company's controls and procedures as of the date prior to the filing date of the most recently filed periodic report under the 1934 Act (such date, the "Evaluation Date"). The Company presented in its most recently filed periodic report under the 1934 Act the conclusions of the certifying officers about the effectiveness of the disclosure controls and procedures based on their evaluations as of the Evaluation Date. Since the Evaluation Date, there have been no significant changes in the Company's internal controls (as such term is defined in Item 307(b) of Regulation S-K under the 1934 Act) or, to the Knowledge of the Company, in other factors that could significantly affect the Company's internal controls.

4.28. Solvency. Based on the financial condition of the Company as of the Closing after giving effect to the receipt by the Company of the proceeds from the sale of the Securities hereunder, the Company's assets do not constitute unreasonably small capital to carry on its business for the current fiscal year as now conducted and as proposed to be conducted including its capital needs taking into account the particular capital requirements of the business conducted by the Company, and projected capital requirements and capital availability thereof. The Company does not intend to incur debts beyond its ability to pay such debts as they mature (taking into account the timing and amounts of cash to be payable on or in respect of its debt). The Company has no present intention to, nor does it have a present belief that it will need to, file for reorganization or liquidation under the bankruptcy or reorganization laws of any jurisdiction. Schedule 4.28 sets forth all outstanding secured and unsecured Indebtedness of the Company, or for which the Company has commitments. The Company is not in default with respect to any Indebtedness.

4.29. Investment Company. The Company is not, and immediately after receipt of payment for the Securities will not be, an "investment company" within the meaning of the Investment Company Act of 1940, as amended.

5 . Representations and Warranties of Renova. Renova hereby represents and warrants to the Company on and as of the Closing, knowing and intending that the Company rely thereon, that:

5 . 1 . Authorization. The execution, delivery and performance by Renova of the Transaction Documents to which Renova is a party have been duly authorized and will each constitute the valid and legally binding obligation of Renova, enforceable against Renova in accordance with their respective terms, subject to bankruptcy, insolvency, fraudulent transfer, reorganization, moratorium and similar laws of general applicability, relating to or affecting creditors' rights generally.

5 . 2 . Purchase Entirely for Own Account. The Securities to be received by Renova hereunder will be acquired for Renova's own account, not as nominee or agent, and not with a view to the resale or distribution of any part thereof in violation of the 1933 Act, and Renova has no present intention of selling, granting any participation in, or otherwise distributing the same in violation of the 1933 Act. Renova is not a registered broker dealer or an entity engaged in the business of being a broker dealer.

5 . 3 . Investment Experience. Renova acknowledges that it can bear the economic risk and complete loss of its investment in the Securities and has such knowledge and experience in financial or business matters that it is capable of evaluating the merits and risks of the investment contemplated hereby. Renova has significant experience in making private investments, similar to the purchase of the Securities hereunder.

5 . 4 . Disclosure of Information. Renova has had an opportunity to receive all additional information related to the Company requested by it and to ask questions of and receive answers from the Company regarding the Company, its business and the terms and conditions of the offering of the Securities. Renova acknowledges receipt of copies of and its satisfactory review of the SEC Filings. Neither such inquiries nor any other due diligence investigation conducted by Renova shall modify, amend or affect Renova's right to rely on the Company's representations and warranties contained in this Agreement.

5.5. Restricted Securities. Renova understands that the Securities are characterized as “restricted securities” under the U.S. federal securities laws inasmuch as they are being acquired from the Company in a transaction not involving a public offering and that under such laws and applicable regulations such securities may be resold without registration under the 1933 Act only in certain limited circumstances.

5.6. Legends.

(a) It is understood that, except as provided below, certificates evidencing such Securities may bear the following or any similar legend:

“THE SECURITIES REPRESENTED HEREBY MAY NOT BE TRANSFERRED UNLESS (I) SUCH SECURITIES HAVE BEEN REGISTERED FOR SALE PURSUANT TO THE SECURITIES ACT OF 1933, AS AMENDED, OR (II) THE COMPANY HAS RECEIVED AN OPINION OF COUNSEL SATISFACTORY TO IT THAT SUCH TRANSFER MAY LAWFULLY BE MADE WITHOUT REGISTRATION UNDER THE SECURITIES ACT OF 1933 OR QUALIFICATION UNDER APPLICABLE STATE SECURITIES LAWS.”

(b) If required by the authorities of any state in connection with the issuance of sale of the Securities, the legend required by such state authority.

(c) Notwithstanding any restrictions on transfer set forth in this Section 5.6, Renova may sell, transfer, assign, pledge or otherwise dispose of the Securities, in whole or in part, to any of its Associated Companies or any third party subject to (i) compliance with all applicable securities laws and the conditions set forth in this Section 5.6 and (ii) the delivery to the Company of such documentation as may be reasonably requested by the Company and reasonably necessary for the Company to obtain a legal opinion that such disposition may lawfully be made without registration under the Securities Act.

5.7. Accredited Investor. Renova is an “accredited investor” as defined in Rule 501(a) of Regulation D.

5.8. No General Solicitation. Renova did not learn of the investment in the Securities as a result of any “general advertising” or “general solicitation” as those terms are contemplated in Regulation D.

5.9. Brokers and Finders. Other than as disclosed on Schedule 4.19, no Person will have, as a result of the transactions contemplated by this Agreement, any valid right, interest or claim against or upon the Company or Renova for any commission, fee or other compensation pursuant to any agreement, arrangement or understanding entered into by or on behalf of Renova.

6. Conditions to Closing.

6.1. Conditions to Renova's Obligations. The obligation of Renova to purchase the Securities at the Closing is subject to the fulfillment to Renova's satisfaction, on or prior to the Closing, of the following conditions, any of which may be waived in writing by Renova:

(a) The representations and warranties made by the Company, in Article 4 as of the Closing that are qualified as to materiality shall be true and correct in all respects, and those not so qualified shall be true and correct in all material respects as of the Closing;

(b) The Company shall have performed in all material respects all obligations herein required to be performed or observed by it on or prior to the Closing;

(c) The Company shall have obtained in a timely fashion any and all consents, permits, approvals, registrations and waivers necessary or appropriate for consummation of the purchase and sale of the Securities being issued and sold at the Closing, and all of which shall be and remain so long as necessary in full force and effect;

(d) The Common Shares to be issued at the Closing shall have been duly and validly authorized and, when issued to Renova in accordance with the terms of this Agreement, shall be validly issued, fully paid and nonassessable, and shall be free and clear of all liens, claims, encumbrances and restrictions, except for restrictions on transfer set forth in the Transaction Documents or imposed by applicable securities laws;

(e) As of the Closing, no judgment, writ, order, injunction, award or decree of or by any court, or judge, justice or magistrate, including any bankruptcy court or judge, or any order of or by any governmental authority, shall have been issued, and no action or proceeding shall have been instituted by any governmental authority, or self-regulatory organization enjoining or preventing the consummation of the transactions contemplated hereby or in the other Transaction Documents;

(f) The Company shall have delivered a Certificate, executed on behalf of the Company by its Chief Executive Officer or its Chief Financial Officer, dated as of the Closing, certifying to the fulfillment of the conditions specified in subsections (a), (b), (c), (d), (f) and (k) of this Section 6.1;

(g) The Company shall have delivered a Certificate, executed on behalf of the Company by its Secretary, dated as of the Closing, certifying the resolutions adopted by the Board of Directors of the Company approving the transactions contemplated by this Agreement and the other Transaction Documents and the issuance and sale of the Securities, certifying the current versions of the Certificate of Incorporation and Bylaws of the Company and certifying as to the signatures and authority of persons signing the Transaction Documents and all related documents on behalf of the Company;

(h) Renova shall have received a Company Counsel Opinion with respect to the Securities to be issued at the Closing; and

(i) As of the Closing, no stop order or suspension of trading shall have been imposed by any Person with respect to public trading in the Common Stock.

6.2. Conditions to Obligations of the Company. The Company's obligation to sell and issue the Securities at the Closing is subject to the fulfillment to the satisfaction by the Company on or prior to the Closing of the following conditions, any of which may be waived in writing by the Company.

(a) The representations and warranties made by Renova in Section 5 hereof that are qualified as to materiality shall be true and correct in all respects, and those not so qualified shall be true and correct in all material respects, at all times prior to and as of the Closing;

(b) Renova shall have performed in all material respects all obligations herein required to be performed or observed by it on or prior to the Closing;

(c) Renova shall have delivered the Investment Amount;

(d) No judgment, writ, order, injunction, award or decree of or by any court, or judge, justice or magistrate, including any bankruptcy court or judge, or any order of or by any governmental authority, shall have been issued, and no action or proceeding shall have been instituted by any governmental authority, or self-regulatory organization enjoining or preventing the consummation of the transactions contemplated hereby or in the other Transaction Documents; and

(e) Renova shall have delivered to the Company a completed Purchaser Questionnaire in the form attached hereto as Exhibit C.

7. Covenants and Agreements of the Company.

7.1. Reservation of Common Stock. The Company shall at all times reserve and keep available out of its authorized but unissued shares of Common Stock, solely for the purpose of providing for the exercise of each Warrant issued to Renova, such number of shares of Common Stock as shall from time to time equal 100% of the number of shares sufficient to permit the exercise of each Warrant issued pursuant to this Agreement in accordance with their respective terms, without regard to any exercise limitations contained therein.

7.2. Trading. The Company shall promptly, following the Closing, take all actions necessary and continue to take all actions necessary as contemplated in this Agreement or otherwise to ensure that the Common Shares and the Warrant Shares are authorized to be quoted on the OTCQX, including the timely filing of all SEC Filings as required under Section 7.7.

7.3. Use of Proceeds. The Company will use the proceeds from the sale of the Securities to fund activities associated with establishing the capacity to manufacture the Company's clinical-stage compound I-124-CLR1404 (LIGHT) in the Company's facility in Madison, WI, substantially in accordance with the schedule of activities set forth in Schedule 7.3 (the "Project"). Furthermore, if Renova exercises all or a portion of the Warrants, the proceeds to the Company from such exercises will be used to fund the Project, to the extent the Investment Amount is not sufficient to fund the completion of the Project. Any proceeds from Warrant exercises not required to fund the completion of the Project will be used for general corporate purposes.

7.4. Press Release: Form 8-K Filing. On or before 9:00 a.m., New York City time, on the first Business Day following the date of this Agreement, the Company shall issue a press release, which shall have been reviewed and approved by Renova, announcing the transactions contemplated by the Transaction Documents (the "**Press Release**"). The Company will file a Current Report on Form 8-K (the "**8-K**") with the SEC describing the terms of the Transaction Documents (and including as exhibits to such Current Report on Form 8-K the material Transaction Documents (including, without limitation, this Agreement and the form of Warrant)). The 8-K will be filed within four (4) Business Days of signing of this Agreement.

7.5. Furnishing of Information. As long as Renova owns Securities, the Company covenants to timely file (or obtain extensions in respect thereof and file within the applicable grace period) all reports required to be filed by the Company after the date hereof pursuant to the 1934 Act. As long as Renova owns Common Shares, the Warrant or the Warrant Shares, if the Company is not required to file reports pursuant to such laws, it will prepare and furnish to the Investors and make publicly available in accordance with Rule 144(c) promulgated by the SEC pursuant to the 1933 Act, as such Rule may be amended from time to time, such information as is required for the Investors to sell the Common Shares and Warrant Shares under Rule 144 promulgated by the SEC pursuant to the 1933 Act, as such Rule may be amended from time to time ("**Rule 144**"). The Company further covenants that it will take such further action as Renova may reasonably request, all to the extent required from time to time to enable Renova to sell the Common Shares and Warrant Shares without registration under the 1933 Act and without the volume restrictions imposed by Rule 144.

7.6. Integration. Neither the Company nor any of its Affiliates, nor any Person acting on its or their behalf shall, directly or indirectly, make any offers or sales of any Company security or solicit any offers to buy any security, under circumstances that would adversely affect reliance by the Company on Section 4(2) of the 1933 Act for the exemption from the registration requirements imposed under Section 5 of the 1933 Act for the transactions contemplated hereby or would require such registration the 1933 Act.

7.7. SEC Filings. The Company shall timely file all SEC Filings and ensure that they comply as to form in all material respects with the requirements of the 1934 Act and do not contain any untrue statement of a material fact or omit to state any material fact necessary in order to make the statements made therein, in the light of the circumstances under which they are made, not misleading.

7.8. Financial Statements. The financial statements of the Company included in each SEC Filing shall fairly present the consolidated financial position of the Company as of the dates shown and its consolidated results of operations and cash flows for the periods shown, and such financial statements shall be prepared in conformity with United States generally accepted accounting principles applied on a consistent basis. Except as set forth in the financial statements of the Company included in the SEC Filings, the Company has not incurred any liabilities, contingent or otherwise, except those which, individually or in the aggregate, have not had, or could not reasonably be expected to have a Material Adverse Effect.

7.9. Compliance with Applicable Law. The Company shall use its best efforts (i) to comply in all material respects with all statutes, laws, regulations, rules, judgments, orders and decrees of all governmental entities applicable to it that relate to its business, (ii) to maintain all permits that are required in order to permit it to carry on its business as it is presently conducted and (iii) to comply in all material respects with all applicable provisions of the Sarbanes-Oxley Act of 2002.

7.10. Cooperation. The Company agrees to use commercially reasonable efforts to cooperate with Renova in selling its Securities pursuant to Rule 144.

7.11. Exemption from Investment Company Act of 1940. The Company shall conduct its business in a manner so that it will not become subject to the Investment Company Act of 1940.

8. Survival and Indemnification.

8.1. Survival. All representations, warranties, covenants and agreements contained in this Agreement shall be deemed to be representations, warranties, covenants and agreements as of the date hereof and shall survive the Closing Dates until the third anniversary thereof; provided, however, that the provisions contained in: (a) Sections 4.4, 8.1, 8.2, 8.3, and Article 9 hereof shall survive indefinitely; and (b) Sections 4.10 and 4.15 shall survive until 90 days after the applicable statute of limitations.

8.2. Indemnification. The Company agrees to indemnify and hold harmless, Renova and its Associated Companies and the directors, officers, employees and agents of Renova and its Associated Companies, from and against any and all losses, claims, damages, liabilities and expenses (including without limitation reasonable attorney fees and disbursements and other expenses incurred in connection with investigating, preparing or defending any action, claim or proceeding, pending or threatened and the costs of enforcement hereof) (collectively, "Losses") to which such Person may become subject as a result of any breach of representation, warranty, covenant or agreement made by, or to be performed on the part of, the Company under the Transaction Documents, and will reimburse any such Person for all such amounts as they are incurred by such Person.

8.3. Conduct of Indemnification Proceedings. Promptly after receipt by any Person (the "Indemnified Person") of notice of any demand, claim or circumstances which would or might give rise to a claim or the commencement of any action, proceeding or investigation in respect of which indemnity may be sought pursuant to Section 8.2, such Indemnified Person shall promptly notify the Company in writing and the Company shall assume the defense thereof, including the employment of counsel reasonably satisfactory to such Indemnified Person, and shall assume the payment of all fees and expenses; provided, however, that the failure of any Indemnified Person so to notify the Company shall not relieve the Company of its obligations hereunder except to the extent that the Company is actually and materially prejudiced by such failure to notify. In any such proceeding, any Indemnified Person shall have the right to retain its own counsel, but the fees and expenses of such counsel shall be at the expense of such Indemnified Person unless: (i) the Company and the Indemnified Person shall have mutually agreed to the retention of such counsel; (ii) in the reasonable judgment of counsel to such Indemnified Person (A) representation of both parties by the same counsel would be inappropriate due to actual or potential differing interests between them, or (B) the Company shall have failed to promptly assume the defense of such proceeding. The Company shall not be liable for any settlement of any proceeding effected without its written consent, which consent shall not be unreasonably withheld, delayed or conditioned, but if settled with such consent, or if there be a final judgment for the plaintiff, the Company shall indemnify and hold harmless such Indemnified Person from and against any Losses by reason of such settlement or judgment. Without the prior written consent of the Indemnified Person, which consent shall not be unreasonably withheld, delayed or conditioned, the Company shall not effect any settlement of any pending or threatened proceeding in respect of which any Indemnified Person is or could have been a party and indemnity could have been sought hereunder by such Indemnified Party, unless such settlement includes an unconditional release of such Indemnified Person from all liability arising out of such proceeding.

9. Miscellaneous.

9 . 1 . Successors and Assigns. This Agreement may not be assigned by a party hereto without the prior written consent of the Company and Renova; provided, however, that Renova may assign its rights and delegate its duties hereunder in whole or in part to a third party acquiring some or all of its Securities in a private transaction with the prior written consent of the Company, after notice duly given by Renova to the Company, such consent not to be reasonably withheld by the Company and that no such assignment or obligation shall affect the obligations of Renova hereunder; and provided further that Renova may assign its rights and delegate its duties hereunder in whole or in part to one or more Affiliates of Renova in a private transaction without the prior written consent of the Company, after notice duly given by Renova to the Company and that no such assignment or obligation shall affect the obligations of Renova hereunder. The provisions of this Agreement shall inure to the benefit of and be binding upon the respective permitted successors and assigns of the parties. Except for provisions of this Agreement expressly to the contrary, nothing in this Agreement, express or implied, is intended to confer upon any party other than the parties hereto or their respective successors and assigns any rights, remedies, obligations, or liabilities under or by reason of this Agreement.

9 . 2 . Counterparts; Faxes. This Agreement may be executed in two or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. This Agreement may also be executed via facsimile, which shall be deemed an original.

9.3. Titles and Subtitles. The titles and subtitles used in this Agreement are used for convenience only and are not to be considered in construing or interpreting this Agreement.

9 . 4 . Notices. Unless otherwise provided, any notice required or permitted under this Agreement shall be given in writing and shall be deemed effectively given as hereinafter described (i) if given by personal delivery, then such notice shall be deemed given upon such delivery, (ii) if given by telex or telecopier, then such notice shall be deemed given upon receipt of confirmation of complete transmittal, (iii) if given by mail, then such notice shall be deemed given upon the earlier of (A) receipt of such notice by the recipient or (B) three (3) Business Days after such notice is deposited in first class mail, postage prepaid, and (iv) if given by a nationally recognized overnight air courier, then such notice shall be deemed given one (1) Business Day after delivery to such carrier. All notices shall be addressed to the party to be notified at the address as follows, or at such other address as such party may designate by ten (10) days' advance written notice to the other party:

If to the Company:

Novelos Therapeutics, Inc.
One Gateway Center, Suite 504
Newton, MA 02458
USA
Attention: Chief Executive Officer
Fax: (617) 964-6331

With a copy to:

Foley Hoag LLP
Seaport World Trade Center West
155 Seaport Boulevard
Boston, MA 02210
USA
Attn: Paul Bork
Fax: (617) 832-7000

If to Renova:

Renova Industries Ltd.
2nd Terrace West Centreville
P.O. Box N-7755
Nassau, Bahamas
Attn: Carl Stadelhofer

9 . 5 . Amendments and Waivers. This Agreement shall not be amended and the observance of any term of this Agreement shall not be waived (either generally or in a particular instance and either retroactively or prospectively) without the prior written consent of the Company and Renova. Any amendment or waiver effected in accordance with this Section 9.6 shall be binding upon each holder of any Securities purchased under this Agreement at the time outstanding, each future holder of all such Securities, and the Company.

9 . 6 . Publicity. Except as provided in Section 9.8, no public release or announcement concerning the transactions contemplated hereby shall be issued by the Company or Renova without the prior consent of the Company (in the case of a release or announcement by Renova) or Renova (in the case of a release or announcement by the Company) (which consents shall not be unreasonably delayed or withheld), except as such release or announcement may be required by law or the applicable rules or regulations of any securities exchange or securities market on which the Securities are then listed and trading, in which case the Company or Renova, as the case may be, shall allow the other, to the extent reasonably practicable in the circumstances, reasonable time to comment on such release or announcement in advance of such issuance.

9.7. Severability. Any provision of this Agreement that is prohibited or unenforceable in any jurisdiction shall, as to such jurisdiction, be ineffective to the extent of such prohibition or unenforceability without invalidating the remaining provisions hereof but shall be interpreted as if it were written so as to be enforceable to the maximum extent permitted by applicable law, and any such prohibition or unenforceability in any jurisdiction shall not invalidate or render unenforceable such provision in any other jurisdiction. To the extent permitted by applicable law, the parties hereby waive any provision of law which renders any provision hereof prohibited or unenforceable in any respect.

9.8. Entire Agreement. This Agreement, including the Exhibits and Disclosure Schedules, and the other Transaction Documents constitute the entire agreement among the parties hereof with respect to the subject matter hereof and thereof and supersede all prior agreements and understandings, both oral and written, between the parties with respect to the subject matter hereof and thereof. Prior drafts or versions of this Agreement shall not be used to interpret this Agreement.

9.9. Further Assurances. The parties shall execute and deliver all such further instruments and documents and take all such other actions as may reasonably be required to carry out the transactions contemplated hereby and to evidence the fulfillment of the agreements herein contained.

9.10. Governing Law; Consent to Jurisdiction. This Agreement shall be governed by, and construed in accordance with, the internal laws of the State of New York without regard to the choice of law principles thereof. Each of the parties hereto irrevocably submits to the exclusive jurisdiction of the courts of the State of New York located in New York County and the United States District Court for the Southern District of New York for the purpose of any suit, action, proceeding or judgment relating to or arising out of this Agreement and the transactions contemplated hereby. Service of process in connection with any such suit, action or proceeding may be served on each party hereto anywhere in the world by the same methods as are specified for the giving of notices under this Agreement. Each of the parties hereto irrevocably consents to the jurisdiction of any such court in any such suit, action or proceeding and to the laying of venue in such court. Each party hereto irrevocably waives any objection to the laying of venue of any such suit, action or proceeding brought in such courts and irrevocably waives any claim that any such suit, action or proceeding brought in any such court has been brought in an inconvenient forum. **THE COMPANY AND RENOVIA HEREBY IRREVOCABLY WAIVES ANY AND ALL RIGHT TO TRIAL BY JURY IN ANY LEGAL PROCEEDING RELATING TO OR ARISING OUT OF THIS AGREEMENT AND THE TRANSACTIONS CONTEMPLATED HEREBY.**

[Signature Page Follows]

EXHIBIT A

NEITHER THIS WARRANT NOR THE SHARES OF COMMON STOCK ISSUABLE UPON EXERCISE OF THIS WARRANT HAVE BEEN REGISTERED WITH THE SECURITIES AND EXCHANGE COMMISSION OR THE SECURITIES COMMISSION OF ANY STATE IN RELIANCE UPON AN EXEMPTION FROM REGISTRATION UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "SECURITIES ACT") AND APPLICABLE STATE SECURITIES LAWS AND, ACCORDINGLY, MAY NOT BE OFFERED OR SOLD EXCEPT PURSUANT TO (I) AN EFFECTIVE REGISTRATION STATEMENT UNDER THE SECURITIES ACT OR (II) AN AVAILABLE EXEMPTION FROM, OR IN A TRANSACTION NOT SUBJECT TO, THE REGISTRATION REQUIREMENTS OF THE SECURITIES ACT AND IN ACCORDANCE WITH APPLICABLE STATE SECURITIES LAWS OR BLUE SKY LAWS.

CLASS ___ COMMON STOCK PURCHASE WARRANT

Warrant Shares: _____

Initial Exercise Date: _____, 2012

THIS CLASS ___ COMMON STOCK PURCHASE WARRANT (the "Warrant") certifies that, for value received, **Renova Industries Ltd.** or its assigns (the "Holder") is entitled, upon the terms and subject to the limitations on exercise and the conditions hereinafter set forth, at any time on or after the date hereof (the "Initial Exercise Date") and on or prior to the close of business on _____¹ (the "Termination Date") but not thereafter, to subscribe for and purchase from Novelos Therapeutics, Inc., a Delaware corporation (the "Company"), up to _____ shares (as subject to adjustment hereunder, the "Warrant Shares") of the common stock, par value \$0.00001 per share, of the Company (the "Common Stock"). The purchase price of one share of Common Stock under this Warrant shall be equal to the Exercise Price, as defined in Section 2(b).

Section 1. Definitions. Capitalized terms used and not otherwise defined herein shall have the meanings set forth in that certain Securities Purchase Agreement (the "Purchase Agreement"), dated November 1, 2012, between the Company and Renova.

Section 2. Exercise.

¹ Insert 5 year anniversary of closing for Class A and 90th day following closing for Class B warrants.

a) Exercise of the purchase rights represented by this Warrant may be made, in whole or in part, at any time or times on or after the Initial Exercise Date and on or before the Termination Date by delivery to the Company (or such other office or agency of the Company as it may designate by notice in writing to the registered Holder at the address of the Holder appearing on the books of the Company) of a duly executed facsimile copy of the Notice of Exercise Form annexed hereto. Within three (3) Trading Days following the date of exercise as aforesaid, the Holder shall deliver the aggregate Exercise Price for the shares specified in the applicable Notice of Exercise by wire transfer or cashier's check drawn on a United States bank unless the cashless exercise procedure specified in Section 2(c) below is required in connection with the applicable Notice of Exercise. Notwithstanding anything herein to the contrary, the Holder shall not be required to physically surrender this Warrant to the Company until the Holder has purchased all of the Warrant Shares available hereunder and the Warrant has been exercised in full, in which case, the Holder shall surrender this Warrant to the Company for cancellation within three (3) Trading Days of the date the final Notice of Exercise is delivered to the Company. Partial exercises of this Warrant resulting in purchases of a portion of the total number of Warrant Shares available hereunder shall have the effect of lowering the outstanding number of Warrant Shares purchasable hereunder in an amount equal to the applicable number of Warrant Shares purchased. The Holder and the Company shall maintain records showing the number of Warrant Shares purchased and the date of such purchases. The Company shall deliver any objection to any Notice of Exercise Form within one (1) Trading Day of receipt of such notice. **The Holder and any assignee, by acceptance of this Warrant, acknowledge and agree that, by reason of the provisions of this paragraph, following the purchase of a portion of the Warrant Shares hereunder, the number of Warrant Shares available for purchase hereunder at any given time may be less than the amount stated on the face hereof. "Trading Day" and "Trading Market" shall have the meaning ascribed to such terms in the Purchase Agreement.**

b) Exercise Price. The exercise price per share of the Common Stock under this Warrant shall be \$ _____², subject to adjustment hereunder (the "Exercise Price").

c) Cashless Exercise. This Warrant may also be exercised, in whole or in part, at such time by means of a "cashless exercise" in which the Holder shall be entitled to receive a number of Warrant Shares equal to the quotient obtained by dividing [(A-B) (X)] by (A), where:

(A) = the VWAP on the Trading Day immediately preceding the date on which Holder elects to exercise this Warrant by means of a "cashless exercise," as set forth in the applicable Notice of Exercise;

(B) = the Exercise Price of this Warrant, as adjusted hereunder; and

(X) = the number of Warrant Shares that would be issuable upon exercise of this Warrant in accordance with the terms of this Warrant if such exercise were by means of a cash exercise rather than a cashless exercise.

² Insert \$1.25 for Class A and \$1.00 for Class B

“VWAP” means, for any date, the price determined by the first of the following clauses that applies: (a) if the Common Stock is then listed or quoted on a Trading Market, the daily volume weighted average price of the Common Stock for the Trading Day immediately preceding such date on the Trading Market on which the Common Stock is then listed or quoted as reported by Bloomberg L.P. (based on a Trading Day from 9:30 a.m. (New York City time) to 4:02 p.m. (New York City time)), (b) if the OTC Bulletin Board is not a Trading Market, the volume weighted average price of the Common Stock for the Trading Day immediately preceding such date on the OTC Bulletin Board, (c) if prices for the Common Stock are then reported in the “Pink Sheets” published by Pink OTC Markets, Inc. (or a similar organization or agency succeeding to its functions of reporting prices), the most recent bid price per share of the Common Stock so reported, or (d) in all other cases, the fair market value of a share of Common Stock as determined by an independent appraiser selected in good faith by the Company and reasonably acceptable to the Holder, the fees and expenses of which shall be paid by the Company.

d) Mechanics of Exercise.

i . Delivery of Warrant Shares Upon Exercise. The Company shall use best efforts to cause the Warrant Shares purchased hereunder to be transmitted by the Company’s transfer agent by physical delivery to the address specified by the Holder in the Notice of Exercise by the date that is three (3) Trading Days after the latest of (A) the delivery to the Company of the Notice of Exercise, (B) surrender of this Warrant (if required) and (C) payment of the aggregate Exercise Price as set forth above (including by cashless exercise, if permitted) (such date, the “Warrant Share Delivery Date”). The Warrant Shares shall be deemed to have been issued, and Holder or any other person so designated to be named therein shall be deemed to have become a holder of record of such shares for all purposes, as of the date the Warrant has been exercised, with payment to the Company of the Exercise Price (or by cashless exercise, if permitted) and all taxes required to be paid by the Holder, if any, pursuant to Section 2(d)(vi) prior to the issuance of such shares, having been paid.

“Affiliate” means, with respect to any Person, any other Person which directly or indirectly Controls, is Controlled by, or is under common Control with, such Person.

“Control” means the possession, direct or indirect, of the power to direct or cause the direction of the management and policies of a Person, whether through the ownership of voting securities, by contract or otherwise.

“Person” means an individual, corporation, partnership, limited liability company, trust, business trust, association, joint stock company, joint venture, sole proprietorship, unincorporated organization, governmental authority or any other form of entity not specifically listed herein.

ii. Delivery of New Warrants Upon Exercise. If this Warrant shall have been exercised in part, the Company shall, at the request of a Holder and upon surrender of this Warrant certificate, at the time of delivery of the Warrant Shares, deliver to the Holder a new Warrant evidencing the rights of the Holder to purchase the unpurchased Warrant Shares called for by this Warrant, which new Warrant shall in all other respects be identical with this Warrant.

iii. Rescission Rights. If the Company fails to cause the Company's transfer agent to transmit to the Holder the Warrant Shares pursuant to Section 2(d)(i) by the Warrant Share Delivery Date, then the Holder will have the right to rescind such exercise.

i v . Compensation for Buy-In on Failure to Timely Deliver Warrant Shares Upon Exercise. In addition to any other rights available to the Holder, if the Company fails to cause the Company's transfer agent to transmit to the Holder the Warrant Shares pursuant to an exercise on or before the Warrant Share Delivery Date, and if after such date the Holder is required by its broker to purchase (in an open market transaction or otherwise) or the Holder's brokerage firm otherwise purchases, shares of Common Stock to deliver in satisfaction of a sale by the Holder of the Warrant Shares which the Holder anticipated receiving upon such exercise (a "Buy-In"), then the Company shall (A) pay in cash to the Holder the amount, if any, by which (x) the Holder's total purchase price (including brokerage commissions, if any) for the shares of Common Stock so purchased exceeds (y) the amount obtained by multiplying (1) the number of Warrant Shares that the Company was required to deliver to the Holder in connection with the exercise at issue times (2) the price at which the sell order giving rise to such purchase obligation was executed, and (B) at the option of the Holder, either reinstate the portion of the Warrant and equivalent number of Warrant Shares for which such exercise was not honored (in which case such exercise shall be deemed rescinded) or deliver to the Holder the number of shares of Common Stock that would have been issued had the Company timely complied with its exercise and delivery obligations hereunder. For example, if the Holder purchases Common Stock having a total purchase price of \$11,000 to cover a Buy-In with respect to an attempted exercise of shares of Common Stock with an aggregate sale price giving rise to such purchase obligation of \$10,000, under clause (A) of the immediately preceding sentence the Company shall be required to pay the Holder \$1,000. The Holder shall provide the Company written notice indicating the amounts payable to the Holder in respect of the Buy-In and, upon request of the Company, evidence of the amount of such loss. Nothing herein shall limit a Holder's right to pursue any other remedies available to it hereunder, at law or in equity including, without limitation, a decree of specific performance and/or injunctive relief with respect to the Company's failure to timely deliver shares of Common Stock upon exercise of the Warrant as required pursuant to the terms hereof.

v. No Fractional Shares or Scrip. No fractional shares or scrip representing fractional shares shall be issued upon the exercise of this Warrant. As to any fraction of a share which the Holder would otherwise be entitled to purchase upon such exercise, the Company shall, at its election, either pay a cash adjustment in respect of such final fraction in an amount equal to such fraction multiplied by the Exercise Price or round up to the next whole share.

vi. Charges, Taxes and Expenses. Issuance of Warrant Shares shall be made without charge to the Holder for any issue or transfer tax or other incidental expense in respect of the issuance of such Warrant Shares, all of which taxes and expenses shall be paid by the Company, and such Warrant Shares shall be issued in the name of the Holder or in such name or names as may be directed by the Holder; provided, however, that in the event Warrant Shares are to be issued in a name other than the name of the Holder, this Warrant when surrendered for exercise shall be accompanied by the Assignment Form attached hereto duly executed by the Holder and the Company may require, as a condition thereto, the payment of a sum sufficient to reimburse it for any transfer tax incidental thereto. The Company shall pay all of the Company's transfer agent fees required for same-day processing of any Notice of Exercise.

vii. Closing of Books. The Company will not close its stockholder books or records in any manner which prevents the timely exercise of this Warrant, pursuant to the terms hereof.

Section 3. Certain Adjustments.

a) Stock Dividends and Splits. If the Company, at any time while this Warrant is outstanding: (i) pays a stock dividend or otherwise makes a distribution or distributions on shares of its Common Stock or any other equity or equity equivalent securities payable in shares of Common Stock (which, for avoidance of doubt, shall not include any shares of Common Stock issued by the Company upon exercise of this Warrant), (ii) subdivides outstanding shares of Common Stock into a larger number of shares, (iii) combines (including by way of reverse stock split) outstanding shares of Common Stock into a smaller number of shares, or (iv) issues by reclassification of shares of the Common Stock any shares of capital stock of the Company, then in each case the Exercise Price shall be multiplied by a fraction of which the numerator shall be the number of shares of Common Stock (excluding treasury shares, if any) outstanding immediately before such event and of which the denominator shall be the number of shares of Common Stock outstanding immediately after such event, and the number of shares issuable upon exercise of this Warrant shall be proportionately adjusted such that the aggregate Exercise Price of this Warrant shall remain unchanged. Any adjustment made pursuant to this Section 3(a) shall become effective immediately after the record date for the determination of stockholders entitled to receive such dividend or distribution and shall become effective immediately after the effective date in the case of a subdivision, combination or re-classification.

b) Subsequent Rights Offerings. In addition to any adjustments pursuant to Section 3(a) above, if at any time the Company grants, issues or sells any Common Stock Equivalents or rights to purchase stock, warrants, securities or other property pro rata to the record holders of any class of shares of Common Stock (the "Purchase Rights"), then the Holder will be entitled to acquire, upon the terms applicable to such Purchase Rights, the aggregate Purchase Rights which the Holder could have acquired if the Holder had held the number of shares of Common Stock acquirable upon complete exercise of this Warrant (without regard to any limitations on exercise hereof, including without limitation, the Beneficial Ownership Limitation) immediately before the date on which a record is taken for the grant, issuance or sale of such Purchase Rights, or, if no such record is taken, the date as of which the record holders of shares of Common Stock are to be determined for the grant, issue or sale of such Purchase Rights (provided, however, to the extent that the Holder's right to participate in any such Purchase Right would result in the Holder exceeding the Beneficial Ownership Limitation, then the Holder shall not be entitled to participate in such Purchase Right to such extent (or beneficial ownership of such shares of Common Stock as a result of such Purchase Right to such extent) and such Purchase Right to such extent shall be held in abeyance for the Holder until such time, if ever, as its right thereto would not result in the Holder exceeding the Beneficial Ownership Limitation).

c) Pro Rata Distributions. During such time as this Warrant is outstanding, if the Company shall declare or make any dividend or other distribution of its assets (or rights to acquire its assets) to holders of shares of Common Stock, by way of return of capital or otherwise (including, without limitation, any distribution of cash, stock or other securities, property or options by way of a dividend, spin off, reclassification, corporate rearrangement, scheme of arrangement or other similar transaction) (a "Distribution"), at any time after the issuance of this Warrant, then, in each such case, the Holder shall be entitled to participate in such Distribution to the same extent that the Holder would have participated therein if the Holder had held the number of shares of Common Stock acquirable upon complete exercise of this Warrant (without regard to any limitations on exercise hereof, including without limitation, the Beneficial Ownership Limitation) immediately before the date of which a record is taken for such Distribution, or, if no such record is taken, the date as of which the record holders of shares of Common Stock are to be determined for the participation in such Distribution (provided, however, to the extent that the Holder's right to participate in any such Distribution would result in the Holder exceeding the Beneficial Ownership Limitation, then the Holder shall not be entitled to participate in such Distribution to such extent (or in the beneficial ownership of any shares of Common Stock as a result of such Distribution to such extent) and the portion of such Distribution shall be held in abeyance for the benefit of the Holder until such time, if ever, as its right thereto would not result in the Holder exceeding the Beneficial Ownership Limitation).

d) Fundamental Transaction. If, at any time while this Warrant is outstanding, (i) the Company, directly or indirectly, in one or more related transactions effects any merger or consolidation of the Company with or into another Person, (ii) the Company, directly or indirectly, effects any sale, lease, license, assignment, transfer, conveyance or other disposition of all or substantially all of its assets in one or a series of related transactions, (iii) any, direct or indirect, purchase offer, tender offer or exchange offer (whether by the Company or another Person) is completed pursuant to which holders of Common Stock are permitted to sell, tender or exchange their shares for other securities, cash or property and has been accepted by the holders of 50% or more of the outstanding Common Stock, (iv) the Company, directly or indirectly, in one or more related transactions effects any reclassification, reorganization or recapitalization of the Common Stock or any compulsory share exchange pursuant to which the Common Stock is effectively converted into or exchanged for other securities, cash or property, or (v) the Company, directly or indirectly, in one or more related transactions consummates a stock or share purchase agreement or other business combination (including, without limitation, a reorganization, recapitalization, spin-off or scheme of arrangement) with another Person or group of Persons whereby such other Person or group acquires more than 50% of the outstanding shares of Common Stock (not including any shares of Common Stock held by the other Person or other Persons making or party to, or associated or affiliated with the other Persons making or party to, such stock or share purchase agreement or other business combination) (each a "Fundamental Transaction"), then, upon any subsequent exercise of this Warrant, the Holder shall have the right to receive, for each Warrant Share that would have been issuable upon such exercise immediately prior to the occurrence of such Fundamental Transaction, at the option of the Holder, the number of shares of Common Stock of the successor or acquiring corporation or of the Company, if it is the surviving corporation, and any additional consideration (the "Alternate Consideration") receivable as a result of such Fundamental Transaction by a holder of the number of shares of Common Stock for which this Warrant is exercisable immediately prior to such Fundamental Transaction. For purposes of any such exercise, the determination of the Exercise Price shall be appropriately adjusted to apply to such Alternate Consideration based on the amount of Alternate Consideration issuable in respect of one share of Common Stock in such Fundamental Transaction, and the Company shall apportion the Exercise Price among the Alternate Consideration in a reasonable manner reflecting the relative value of any different components of the Alternate Consideration. If holders of Common Stock are given any choice as to the securities, cash or property to be received in a Fundamental Transaction, then the Holder shall be given the same choice as to the Alternate Consideration it receives upon any exercise of this Warrant following such Fundamental Transaction. Notwithstanding anything to the contrary, in the event of a Fundamental Transaction that is (1) an all cash transaction, (2) a "Rule 13e-3 transaction" as defined in Rule 13e-3 under the Exchange Act, or (3) a Fundamental Transaction involving a person or entity not traded on a national securities exchange, including, but not limited to, the Nasdaq Global Select Market, the Nasdaq Global Market, or the Nasdaq Capital Market, the Company or any Successor Entity (as defined below) shall, at the Holder's option, exercisable at any time concurrently with, or within 30 days after the consummation of the Fundamental Transaction, purchase this Warrant from the Holder by paying to the Holder an amount of cash equal to the Black Scholes Value of the remaining unexercised portion of this Warrant on the date of the consummation of such Fundamental Transaction. "Black Scholes Value" means the value of this Warrant based on the Black and Scholes Option Pricing Model obtained from the "OV" function on Bloomberg, L.P. ("Bloomberg") determined as of the day of consummation of the applicable Fundamental Transaction for pricing purposes and reflecting (A) a risk-free interest rate corresponding to the U.S. Treasury rate for a period equal to the time between the date of the public announcement of the applicable Fundamental Transaction and the Termination Date, (B) an expected volatility equal to the greater of 100% and the 100 day volatility obtained from the HVT function on Bloomberg as of the Trading Day immediately following the public announcement of the applicable Fundamental Transaction, (C) the underlying price per share used in such calculation shall be the sum of the price per share being offered in cash, if any, plus the value of any non-cash consideration, if any, being offered in such Fundamental Transaction and (D) a remaining option time equal to the time between the date of the public announcement of the applicable Fundamental Transaction and the Termination Date. The Company shall cause any successor entity in a Fundamental Transaction in which the Company is not the survivor (the "Successor Entity") to assume in writing all of the obligations of the Company under this Warrant and the other Transaction Documents in accordance with the provisions of this Section 3(d) pursuant to written agreements prior to such Fundamental Transaction and shall, at the option of the Holder, deliver to the Holder in exchange for this Warrant a security of the Successor Entity evidenced by a written instrument substantially similar in form and substance to this Warrant which is exercisable for a corresponding number of shares of capital stock of such Successor Entity (or its parent entity) equivalent to the shares of Common Stock acquirable and receivable upon exercise of this Warrant (without regard to any limitations on the exercise of this Warrant) prior to such Fundamental Transaction, and with an exercise price which applies the exercise price hereunder to such shares of capital stock (but taking into account the relative value of the shares of Common Stock pursuant to such Fundamental Transaction and the value of such shares of capital stock, such number of shares of capital stock and such exercise price being for the purpose of protecting the economic value of this Warrant immediately prior to the consummation of such Fundamental Transaction). Upon the occurrence of any such Fundamental Transaction, the Successor Entity shall succeed to, and be substituted for (so that from and after the date of such Fundamental Transaction, the provisions of this Warrant and the other Transaction Documents referring to the "Company" shall refer instead to the Successor Entity), and may exercise every right and power of the Company and shall assume all of the obligations of the Company under this Warrant and the other Transaction Documents with the same effect as if such Successor Entity had been named as the Company herein.

e) Calculations. All calculations under this Section 3 shall be made to the nearest cent or the nearest 1/100th of a share, as the case may be. For purposes of this Section 3, the number of shares of Common Stock deemed to be issued and outstanding as of a given date shall be the sum of the number of shares of Common Stock (excluding treasury shares, if any) issued and outstanding.

f) Notice to Holder.

i . Adjustments. Whenever the Exercise Price or the number or type of securities for which this Warrant is exercisable are adjusted pursuant to any provision of this Section 3, the Company shall promptly mail to the Holder a notice setting forth such adjusted Exercise Price or such number or type securities, as applicable, and setting forth a brief statement of the facts requiring such adjustment.

ii . Notice to Allow Exercise by Holder. If (A) the Company shall declare a dividend (or any other distribution in whatever form) on the Common Stock, (B) the Company shall declare a special nonrecurring cash dividend on or a redemption of the Common Stock, (C) the Company shall authorize the granting to all holders of the Common Stock rights or warrants to subscribe for or purchase any shares of capital stock of any class or of any rights, (D) the approval of any stockholders of the Company shall be required in connection with any reclassification of the Common Stock, any consolidation or merger to which the Company is a party, any sale or transfer of all or substantially all of the assets of the Company, or any compulsory share exchange whereby the Common Stock is converted into other securities, cash or property, or (E) the Company shall authorize the voluntary or involuntary dissolution, liquidation or winding up of the affairs of the Company, then, in each case, the Company shall cause to be mailed to the Holder at its last address as it shall appear upon the Warrant Register of the Company, at least 20 calendar days prior to the applicable record or effective date hereinafter specified, a notice stating (x) the date on which a record is to be taken for the purpose of such dividend, distribution, redemption, rights or warrants, or if a record is not to be taken, the date as of which the holders of the Common Stock of record to be entitled to such dividend, distributions, redemption, rights or warrants are to be determined or (y) the date on which such reclassification, consolidation, merger, sale, transfer or share exchange is expected to become effective or close, and the date as of which it is expected that holders of the Common Stock of record shall be entitled to exchange their shares of the Common Stock for securities, cash or other property deliverable upon such reclassification, consolidation, merger, sale, transfer or share exchange; provided that the failure to mail such notice or any defect therein or in the mailing thereof shall not affect the validity of the corporate action required to be specified in such notice. To the extent that any notice provided hereunder constitutes, or contains, material, non-public information regarding the Company or any of its subsidiaries, the Company shall simultaneously file such notice with the Securities and Exchange Commission pursuant to a Current Report on Form 8-K. The Holder shall remain entitled to exercise this Warrant during the period commencing on the date of such notice to the effective date of the event triggering such notice except as may otherwise be expressly set forth herein.

Section 4. Transfer of Warrant.

a) Transferability. This Warrant and the rights hereunder may be transferred only pursuant to a registration statement filed under the Securities Act, or an exemption from such registration. Subject to such restrictions, this Warrant and all rights hereunder (including, without limitation, any registration rights) are transferable, in whole or in part, upon surrender of this Warrant at the principal office of the Company or its designated agent, together with a written assignment of this Warrant substantially in the form attached hereto duly executed by the Holder or its agent or attorney and funds sufficient to pay any transfer taxes payable upon the making of such transfer. Upon such surrender and, if required, such payment, the Company shall execute and deliver a new Warrant or Warrants in the name of the assignee or assignees, as applicable, and in the denomination or denominations specified in such instrument of assignment, and shall issue to the assignor a new Warrant evidencing the portion of this Warrant not so assigned, and this Warrant shall promptly be cancelled. The Warrant, if properly assigned in accordance herewith, may be exercised by a new holder for the purchase of Warrant Shares without having a new Warrant issued.

b) New Warrants. This Warrant may be divided or combined with other Warrants upon presentation hereof at the aforesaid office of the Company, together with a written notice specifying the names and denominations in which new Warrants are to be issued, signed by the Holder or its agent or attorney. Subject to compliance with Section 4(a), as to any transfer which may be involved in such division or combination, the Company shall execute and deliver a new Warrant or Warrants in exchange for the Warrant or Warrants to be divided or combined in accordance with such notice. All Warrants issued on transfers or exchanges shall be dated the initial issuance date of this Warrant and shall be identical with this Warrant except as to the number of Warrant Shares issuable pursuant thereto.

c) Warrant Register. The Company shall register this Warrant, upon records to be maintained by the Company for that purpose (the "Warrant Register"), in the name of the record Holder hereof from time to time. The Company may deem and treat the registered Holder of this Warrant as the absolute owner hereof for the purpose of any exercise hereof or any distribution to the Holder, and for all other purposes, absent actual notice to the contrary.

d) Compliance with the Securities Act. The Company may cause the legend set forth on the first page of this Warrant to be set forth on each Warrant or similar legend on any security issued or issuable upon exercise of this Warrant, unless counsel for the Corporation is of the opinion as to any such security that such legend is unnecessary.

Section 5. Miscellaneous.

a) No Rights as Stockholder Until Exercise. This Warrant does not entitle the Holder to any voting rights, dividends or other rights as a stockholder of the Company prior to the exercise hereof as set forth in Section 2(d)(i).

b) Loss, Theft, Destruction or Mutilation of Warrant. The Company covenants that upon receipt by the Company of evidence reasonably satisfactory to it of the loss, theft, destruction or mutilation of this Warrant or any stock certificate relating to the Warrant Shares, and in case of loss, theft or destruction, of indemnity or security reasonably satisfactory to it (which, in the case of the Warrant, shall not include the posting of any bond), and upon surrender and cancellation of such Warrant or stock certificate, if mutilated, the Company will make and deliver a new Warrant or stock certificate of like tenor and dated as of such cancellation, in lieu of such Warrant or stock certificate.

c) Saturdays, Sundays, Holidays, etc. If the last or appointed day for the taking of any action or the expiration of any right required or granted herein shall not be a Trading Day, then, such action may be taken or such right may be exercised on the next succeeding Trading Day.

d) Authorized Shares.

The Company covenants that, during the period the Warrant is outstanding, it will reserve from its authorized and unissued Common Stock a sufficient number of shares to provide for the issuance of the Warrant Shares upon the exercise of any purchase rights under this Warrant. The Company further covenants that its issuance of this Warrant shall constitute full authority to its officers who are charged with the duty of executing stock certificates to execute and issue the necessary Warrant Shares upon the exercise of the purchase rights under this Warrant. The Company will take all such reasonable action as may be necessary to assure that such Warrant Shares may be issued as provided herein without violation of any applicable law or regulation, or of any requirements of the Trading Market upon which the Common Stock may be listed. The Company covenants that all Warrant Shares which may be issued upon the exercise of the purchase rights represented by this Warrant will, upon exercise of the purchase rights represented by this Warrant and payment for such Warrant Shares in accordance herewith, be duly authorized, validly issued, fully paid and nonassessable and free from all taxes, liens and charges created by the Company in respect of the issue thereof (other than taxes in respect of any transfer occurring contemporaneously with such issue).

Except and to the extent as waived or consented to by the Holder, the Company shall not by any action, including, without limitation, amending its certificate of incorporation or through any reorganization, transfer of assets, consolidation, merger, dissolution, issue or sale of securities or any other voluntary action, avoid or seek to avoid the observance or performance of any of the terms of this Warrant, but will at all times in good faith assist in the carrying out of all such terms and in the taking of all such actions as may be necessary or appropriate to protect the rights of Holder as set forth in this Warrant against impairment. Without limiting the generality of the foregoing, the Company will (i) not increase the par value of any Warrant Shares above the amount payable therefor upon such exercise immediately prior to such increase in par value, (ii) take all such action as may be necessary or appropriate in order that the Company may validly and legally issue fully paid and nonassessable Warrant Shares upon the exercise of this Warrant and (iii) use commercially reasonable efforts to obtain all such authorizations, exemptions or consents from any public regulatory body having jurisdiction thereof, as may be, necessary to enable the Company to perform its obligations under this Warrant.

Before taking any action which would result in an adjustment in the number of Warrant Shares for which this Warrant is exercisable or in the Exercise Price, the Company shall obtain all such authorizations or exemptions thereof, or consents thereto, as may be necessary from any public regulatory body or bodies having jurisdiction thereof.

e) Governing Law; Jurisdiction. This Warrant shall be governed by, and construed in accordance with, the internal laws of the State of New York, without reference to the choice of law provisions thereof. The Company and, by accepting this Warrant, the Holder, each irrevocably submits to the exclusive jurisdiction of the courts of the State of New York located in New York County and the United States District Court for the Southern District of New York for the purpose of any suit, action, proceeding or judgment relating to or arising out of this Warrant and the transactions contemplated hereby. Service of process in connection with any such suit, action or proceeding may be served on each party hereto anywhere in the world by the same methods as are specified for the giving of notices under this Warrant. The Company and, by accepting this Warrant, the Holder, each irrevocably consents to the jurisdiction of any such court in any such suit, action or proceeding and to the laying of venue in such court. The Company and, by accepting this Warrant, the Holder, each irrevocably waives any objection to the laying of venue of any such suit, action or proceeding brought in such courts and irrevocably waives any claim that any such suit, action or proceeding brought in any such court has been brought in an inconvenient forum. **THE COMPANY AND THE HOLDER HEREBY IRREVOCABLY WAIVES ANY AND ALL RIGHT TO TRIAL BY JURY IN ANY LEGAL PROCEEDING RELATING TO OR ARISING OUT OF THIS WARRANT AND THE TRANSACTIONS CONTEMPLATED HEREBY.**

f) Nonwaiver and Expenses. No course of dealing or any delay or failure to exercise any right hereunder on the part of Holder shall operate as a waiver of such right or otherwise prejudice the Holder's rights, powers or remedies. Without limiting any other provision of this Warrant, if the Company willfully and knowingly fails to comply with any provision of this Warrant, which results in any material damages to the Holder, the Company shall pay to the Holder such amounts as shall be sufficient to cover any costs and expenses including, but not limited to, reasonable attorneys' fees, including those of appellate proceedings, incurred by the Holder in collecting any amounts due pursuant hereto or in otherwise enforcing any of its rights, powers or remedies hereunder.

g) Notices. Unless otherwise provided, any notice required or permitted under this Warrant shall be given in writing and shall be deemed effectively given as hereinafter described (i) if given by personal delivery, then such notice shall be deemed given upon such delivery, (ii) if given by telex or facsimile, then such notice shall be deemed given upon receipt of confirmation of complete transmittal, (iii) if given by mail, then such notice shall be deemed given upon the earlier of (A) receipt of such notice by the recipient or (B) three days after such notice is deposited in first class mail, postage prepaid, and (iv) if given by an internationally recognized overnight air courier, then such notice shall be deemed given one day after delivery to such carrier. All notices shall be addressed as follows: if to the Holder, at its address as set forth in the Company's books and records and, if to the Company, at Novelos Therapeutics, Inc., One Gateway Center, Suite 504, Newton, MA 02458, Attention: Chief Executive Officer, Fax: (617) 964-6331, or at such other address as the Holder or the Company, as applicable, may designate by ten days' advance written notice to the other.

h) Remedies. The Holder, in addition to being entitled to exercise all rights granted by law, including recovery of damages, will be entitled to specific performance of its rights under this Warrant. The Company agrees that monetary damages would not be adequate compensation for any loss incurred by reason of a breach by it of the provisions of this Warrant and hereby agrees to waive and not to assert the defense in any action for specific performance that a remedy at law would be adequate.

i) Successors and Assigns. Subject to applicable securities laws, this Warrant and the rights and obligations evidenced hereby shall inure to the benefit of and be binding upon the successors and permitted assigns of the Company and the successors and permitted assigns of Holder. The provisions of this Warrant are intended to be for the benefit of any Holder from time to time of this Warrant and shall be enforceable by the Holder or holder of Warrant Shares.

j) Amendment. This Warrant may be modified or amended or the provisions hereof waived with the written consent of the Company and the Holder.

k) Severability. Wherever possible, each provision of this Warrant shall be interpreted in such manner as to be effective and valid under applicable law, but if any provision of this Warrant shall be prohibited by or invalid under applicable law, such provision shall be ineffective to the extent of such prohibition or invalidity, without invalidating the remainder of such provisions or the remaining provisions of this Warrant.

l) Headings. The headings used in this Warrant are for the convenience of reference only and shall not, for any purpose, be deemed a part of this Warrant.

(Signature Page Follows)

IN WITNESS WHEREOF, the Company has caused this Warrant to be executed by its officer thereunto duly authorized as of the date first above indicated.

NOVELOS THERAPEUTICS, INC.

By: _____

Name: Harry S. Palmin

Title: President and CEO

NOTICE OF EXERCISE

TO: NOVELOS THERAPEUTICS, INC.

(1) The undersigned hereby elects to purchase _____ Warrant Shares of the Company pursuant to the terms of the attached Warrant (only if exercised in full), and tenders herewith payment of the exercise price in full, together with all applicable transfer taxes, if any.

(2) Payment shall take the form of (check applicable box):

in lawful money of the United States; or

[if permitted the cancellation of such number of Warrant Shares as is necessary, in accordance with the formula set forth in subsection 2(c), to exercise this Warrant with respect to the maximum number of Warrant Shares purchasable pursuant to the cashless exercise procedure set forth in subsection 2(c).

(3) Please issue said Warrant Shares in the name of the undersigned or in such other name as is specified below:

[SIGNATURE OF HOLDER]

Name of Investing Entity:

Signature of Authorized Signatory of Investing Entity:

Name of Authorized Signatory:

Title of Authorized Signatory:

Date:

ASSIGNMENT FORM

(To assign the foregoing warrant, execute this form and supply required information. Do not use this form to exercise the warrant.)

FOR VALUE RECEIVED, [____] all of or [_____] shares of the foregoing Warrant and all rights evidenced thereby are hereby assigned to

_____ whose address is
_____.

Dated: _____, _____

Holder's Signature: _____

Holder's Address: _____

Signature Guaranteed: _____

NOTE: The signature to this Assignment Form must correspond with the name as it appears on the face of the Warrant, without alteration or enlargement or any change whatsoever, and must be guaranteed by a bank or trust company. Officers of corporations and those acting in a fiduciary or other representative capacity should file proper evidence of authority to assign the foregoing Warrant.

EXHIBIT B

Seaport West
155 Seaport Boulevard
Boston, MA 02210-2600

617 832 1000 *main*
617 832 7000 *fax*

November __, 2012

Renova Industries, Ltd.
2nd Terrace West Centreville
P.O. Box N-7755
Nassau, Bahamas
Attn: Carl Stadelhofer

Re: Securities Purchase Agreement

Ladies and Gentlemen:

We have acted as counsel for Novelos Therapeutics, Inc., a Delaware corporation (the "Company"), in connection with the execution and delivery of the Securities Purchase Agreement by and between the Company and the Purchaser party thereto of even date herewith (the "Agreement"). All terms used herein have the meanings defined for them in the Agreement unless otherwise defined herein.

This opinion is furnished to you in connection with the Closing of the issuance and sale of 2,000,000 units, consisting of 2,000,000 shares (the "Shares") of the Company's common stock, par value \$0.00001 per share (the "Common Stock") and warrants to purchase an aggregate of 3,000,000 shares of Common Stock (the "Warrants") on the date hereof pursuant to the Agreement. The shares of Common Stock issuable upon exercise of the warrants are referred to herein as the "Warrant Shares."

The opinions expressed herein are subject to the following assumptions, limitations, qualifications and exceptions:

- (a) We have made such legal and factual examinations and inquiries as we have deemed advisable or necessary for the purpose of rendering this opinion. We have relied as to factual matters on the representations and warranties contained in the Agreement and the related agreements and documents delivered in connection with the Closing by the Company. We have assumed the completeness and accuracy of all factual matters described in such representations and warranties and have not made any independent review or investigation of factual matters in connection with the preparation of this opinion.
 - (b) In rendering the opinions expressed below, we have examined originals or copies of: (i) the Agreement, (ii) the Warrants, (iii) the Company's Certificate of Incorporation, as amended through the date hereof (the "Certificate of Incorporation") and (iv) the Company's By-laws, as in effect on the date hereof (the "By-laws"), and we have examined, among other things, originals or copies of such corporate records of the Company, certificates of public officials and such other documents and questions of law that we consider necessary or advisable for the purpose of rendering this opinion. In such examination we have assumed the genuineness of all signatures or original documents, the authenticity and completeness of all documents submitted to us as originals, the conformity to original documents of all copies submitted to us as copies thereof, the legal capacity of natural persons, and the due execution and delivery of all documents (except as to due execution and delivery by the Company) where due execution and delivery are a prerequisite to the effectiveness thereof.
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(c) For purposes of this opinion, we have assumed that you have all requisite power and authority, and have taken any and all necessary corporate action, to execute and deliver the Agreement, and that the representations and warranties made by the Purchaser in the Agreement and pursuant thereto are true and correct as of the date hereof.

(d) Our opinion is based upon our knowledge of the facts as of the date hereof and assumes no event will take place in the future which would affect the opinions set forth herein other than future events contemplated by the Agreement. We assume no duty to communicate with you with respect to any change in law or facts which comes to our attention hereafter.

(e) In rendering the opinion in paragraph 1 below with respect to legal existence and good standing of the Company in the State of Delaware, we have relied solely upon a certificate of the Secretary of State of Delaware and we express such opinion as of the date of such certificate. We express no opinion as to the tax good standing of the Company in any jurisdiction.

We have made such examination of Massachusetts law, United States federal law, and the Delaware General Corporation Law (the "DGCL") as we have deemed necessary for the purpose of this opinion. In rendering opinions concerning the DGCL, we have, with your consent, relied exclusively upon a review of published statutes. We express no opinion herein as to the laws of any jurisdiction other than The Commonwealth of Massachusetts, the federal laws of the United States of America and the DGCL. Except for our opinion in paragraph 7 below, we express no opinion herein with respect to compliance by the Company with any United States federal securities laws or state or securities or "blue sky" laws, including in each case any securities anti-fraud laws. We note that the Agreement and the Warrants purport to be governed by the laws of the State of New York. To the extent that any of the opinions expressed herein relate to or may require application of any law of the State of New York, we have assumed, with your permission, that the applicable New York law is substantively the same in all material respects as Massachusetts law.

The opinions expressed herein are qualified to the extent that (1) the enforceability of any provisions of the Agreement or any instrument delivered or any right granted thereunder, including the Warrants, may be subject to or affected by any bankruptcy, reorganization, insolvency, fraudulent conveyance, moratorium or other similar law of general application relating to or affecting the rights or remedies of creditors generally, which law may be in effect from time to time; (2) the remedy of specific performance or any other equitable remedy may be unavailable or may be withheld as a matter of judicial discretion; (3) equitable principles and principles of public policy may be applied in construing or enforcing the provisions of the Agreement or of any other agreement, instrument or document; and (4) the enforceability, validity or binding effect of any remedial provision of the Agreement may be limited by applicable law which may limit particular rights and remedies. In addition, the opinions expressed herein are subject to the qualification that the enforcement of any of your rights is in all cases subject to your implied duty of good faith and fair dealing.

We express no opinion herein as to the validity or enforceability of any provision of the Agreement or any other instrument or document including the Warrants to the extent that such provision purports to (1) constitute a waiver by the Company of any constitutional right, or of any statutory right except where advance waiver is expressly permitted by the relevant statute; (2) require the Company to indemnify or to hold harmless you or any other person or entity from the consequences of any negligent or other wrongful act or omission of you or such other person or entity; (3) provide for indemnification or contribution by the Company in connection with the Agreement, the transactions contemplated thereby or otherwise to the extent such indemnification or contribution may be limited by applicable laws or as a matter of public policy; or (4) constitute a waiver of any right to a hearing on or adjudication of any issue or the right to trial by jury.

In connection with the preparation of this opinion, we have not made any independent review or investigation of any court or agency docket or other litigation papers or of any judgment, order, decree, ruling or decision of any governmental commission, bureau or other regulatory authority or agency applying primarily to the Company, nor have we made any independent investigation as to the existence of any actions, suits, investigations or proceedings, if any, pending or threatened against the Company, any Purchaser or any other person or entity.

As used in the opinions expressed throughout, the phrase "to our knowledge" means the actual knowledge of any of the lawyers within our firm who have worked on the transactions contemplated by the Agreement, without any special investigation with respect to the matter as to which any such opinion is so qualified.

Based upon and subject to the foregoing, we are of the opinion that:

1. The Company is a corporation validly existing and in good standing under the laws of the State of Delaware. The Company has all requisite corporate power and authority to own and operate its properties and assets and to carry on its business as now conducted and as proposed to be conducted (all as described in the Company's Annual Report on Form 10-K for its fiscal year ended December 31, 2011).
 2. The Company has all requisite power and authority to (i) execute, deliver and perform the Agreement and the Warrants, (ii) to issue, sell and deliver the Shares and the Warrants pursuant to the Agreement, and, upon due exercise of the Warrants, the Warrant Shares and (iii) to carry out and perform its obligations under, and to consummate the transactions contemplated by, the Agreement and the Warrants.
 3. All corporate action on the part of the Company, its directors and its stockholders necessary for the authorization, execution and delivery by the Company of the Agreement and the Warrants, the authorization, issuance, sale and delivery of the Shares and the Warrants pursuant to the Agreement, the issuance and delivery of the Warrant Shares upon due exercise of the Warrants and the consummation by the Company of the transactions contemplated by the Agreement and the Warrants has been duly taken. The Agreement and the Warrants have been duly and validly executed and delivered by the Company and constitute the legal, valid and binding obligation of the Company, enforceable against the Company in accordance with their terms.
 4. The authorized capital stock of the Company consists of 150,000,000 shares of Common Stock and 7,000 shares of Preferred Stock. The Shares have been duly authorized for issuance and, when issued, sold and delivered in accordance with the terms and for the consideration set forth in the Agreement, will be validly issued, fully paid and nonassessable. The Warrant Shares have been duly and validly authorized and reserved for issuance, and when issued upon the exercise of the Warrants in accordance with the terms therein, will be validly issued, fully paid and nonassessable, and free of any preemptive or similar rights arising under the DGCL or the Certificate of Incorporation or By-laws.
-

5. The execution, delivery and performance by the Company of, and the compliance by the Company with the terms of, the Agreement and the issuance, sale and delivery of the Shares, the Warrants and the Warrant Shares pursuant to the Agreement do not (a) conflict with or result in a violation of any provision of law, rule or regulation applicable to the Company or of the Certificate of Incorporation or By-laws, (b) conflict with any order, writ, judgment or decree specifically naming the Company and known to us or (c) result in a breach of or constitute a default (or an event which with notice or lapse of time or both would become a default) under, or result in or permit the termination or modification of, any agreement included as an exhibit to the Registration Statement under Item 601(b)(10) of Regulation S-K promulgated under the Securities Act of 1933, as amended (the "Securities Act").

6. In connection with the execution, delivery and performance by the Company of the Agreement, or the offer, sale, issuance or delivery of the Shares, the Warrants and the Warrant Shares or the consummation of the transactions contemplated thereby, no consent, license, permit, waiver, approval or authorization of, or designation, declaration, registration or filing with, any Massachusetts or federal governmental authority or pursuant to the DGCL, is required (other than filings required to be made after the Closing under applicable United States federal securities laws).

7. Assuming the accuracy of your representations in Section 5 of the Agreement, the offer, issuance and sale of the Shares and Warrants to you at the Closing pursuant to the Agreement are, subject to the making of applicable exemptive filings, exempt from registration under the Securities Act.

8. The Company is not, and after the consummation of the transactions contemplated by the Agreement shall not be, an Investment Company within the meaning of the Investment Company Act of 1940, as amended.

9. We are not representing the Company in any pending litigation in which the Company is a named defendant that challenges the validity or enforceability of, or seeks to enjoin the performance of, the Agreement or the Warrants.

This opinion shall be interpreted in accordance with the Legal Opinions Principles issued by the Committee on Legal Opinions of the American Bar Association's Business Law Section as published in 53 Business Lawyer 831 (May 1998).

This opinion is furnished to the Purchaser solely for their benefit in connection with the transactions described above and, except as otherwise expressly set forth herein, may not be relied upon by any other person or for any other purpose without our prior written consent.

Very truly yours,

FOLEY HOAG LLP

By: _____
A Partner

NOVELOS THERAPEUTICS, INC.

**INSTRUCTIONS FOR COMPLETION
OF PROSPECTIVE INVESTOR QUESTIONNAIRE**

Prospective investors in Novelos Therapeutics, Inc., a Delaware corporation (the “Company”) must complete and sign the attached Prospective Investor Questionnaire. The purpose of the Questionnaire is to determine whether you, or the entity on whose behalf you are completing this Questionnaire, meet qualify as an “accredited investor” as defined in rule 501(a) promulgated under the United States Securities Act of 1933, as amended (the “Securities Act”). The offering will be a registered direct offering under the Securities Act, but has not been, and will not be, qualified under the securities laws of your state, and the securities involved in this offering are being sold in reliance upon an exemption from the registration or qualification requirements thereof, which reliance is based on the information contained in your response to this Questionnaire. This Questionnaire is not an offer to sell, or a solicitation of any offer to buy, any securities of the Company.

Please complete, as thoroughly as possible, sign and date this Questionnaire, and deliver it to the Company. If an entity is the potential investor, the term “you” in the Questionnaire refers to the entity rather than the individual completing this Questionnaire.

Your answers will be kept strictly confidential, except to the extent disclosure may be required under any federal or state laws. However, each person who agrees to invest in the Company agrees that the Company may present this Questionnaire or a copy hereof to its attorneys or such other parties as the Company, in its sole discretion, deems appropriate to assure itself that the proposed offer and sale of the securities of the Company will not result in a violation of the securities or “blue sky” laws of your state.

* * *

PROSPECTIVE INVESTOR QUESTIONNAIRE

THIS QUESTIONNAIRE MUST BE COMPLETED AND DELIVERED TO NOVELOS THERAPEUTICS, INC. (THE "COMPANY") BY YOU AS A PROSPECTIVE INVESTOR IN THE COMPANY.

Please print or type:

1. General Information

Legal Name of Potential Investor: _____

Business Address: _____

Business Telephone: _____

SSN or EIN: _____

If applicable:

Home Address: _____

Date of Birth: _____ Home Telephone: _____

Spouse's Name: _____

2. Qualification as Accredited Investor

a. Are you a natural person whose current net worth or joint net worth with your spouse, excluding the value of your primary residence, exceeds \$1,000,000?

Yes _____ No _____

For purposes of this net worth calculation, you may exclude the amount of indebtedness secured by your primary residence up to the amount of the value of your primary residence. Any indebtedness secured by your primary residence in excess of the value of your primary residence should, however, be treated as a liability and deducted from your net worth.

b. Are you a natural person who had an individual income in excess of \$200,000 in each of the two most recent years or joint income with your spouse in each of those years in excess of \$300,000 and do you reasonably expect to achieve the same income levels in the present year?

Yes _____ No _____

c. Are you a director or executive officer of the Company?

Yes _____ No _____

d. Are you or, if applicable, the entity on whose behalf you are completing this Questionnaire:

(i) a bank as defined in Section 3(a)(2) of the Securities Act or a savings and loan association or other institution as defined in Section 3(a)(5)(A) of the Securities Act, whether acting in its individual or fiduciary capacity?

Yes _____ No _____

(ii) a broker or dealer registered pursuant to Section 15 of the United States Securities Exchange Act of 1934?

Yes _____ No _____

(iii) an insurance company as defined in Section 2(a)(13) of the Securities Act?

Yes _____ No _____

(iv) an investment company registered under the United States Investment Company Act of 1940 or a business development company as defined in Section 2(a)(48) of such Act?

Yes _____ No _____

(v) a Small Business Investment Company licensed by the U.S. Small Business Administration under Section 301(c) or (d) of the United States Small Business Investment Act of 1958?

Yes _____ No _____

(vi) a plan established and maintained by a state, its political subdivisions, or any agency or instrumentality of a state or its political subdivisions for the benefit of its employees which has total assets in excess of \$5,000,000?

Yes _____ No _____

(vii) an employee benefit plan within the meaning of the United States Employee Retirement Income Security Act of 1974, as amended (“ERISA”), for which all investment decisions are made by a plan fiduciary, as defined in Section 3(21) of such Act, which is either a bank, savings and loan association, insurance company, or registered investment adviser?

Yes _____ No _____

(viii) an employee benefit plan within the meaning of ERISA which has total assets in excess of \$5,000,000?

Yes _____ No _____

(ix) a self-directed employee benefit plan within the meaning of ERISA, with investment decisions made solely by persons that are accredited investors as set forth in this question 2?

Yes _____ No _____

(x) a private business development company as defined in Section 202(a)(22) of the United States Investment Advisers Act of 1940?

Yes _____ No _____

(xi) an organization described in Section 501(c)(3) of the Internal Revenue Code, a corporation, a Massachusetts or similar business trust, or a partnership, with total assets in excess of \$5,000,000?

Yes _____ No _____

If your answer to the preceding question was “yes,” was the entity on whose behalf you are completing this Questionnaire formed for the purpose of investing in the Company?

Yes _____ No _____

If so, how many persons are beneficial owners of the equity securities or equity interests of such entity?

(xii) a trust with total assets in excess of \$5,000,000 whose purchase is directed by a person who has such knowledge and experience in financial and business matters that he or she is capable of evaluating the merits and risks of the prospective investment in the Company?

Yes _____ No _____

If your answer to the preceding question was “yes,” was the entity on whose behalf you are completing this Questionnaire formed for the purpose of investing in the Company?

Yes _____ No _____

If so, how many persons are beneficial owners of the equity securities or equity interests of such entity?

e. Are you completing this Questionnaire on behalf of an entity in which all of the equity owners are accredited investors within the meaning of Rule 501 promulgated under the Securities Act who are within one of the categories of accredited investors described in one of the paragraphs of this question 2?

Yes _____ No _____

[signature page follows]

The foregoing statements are true, accurate and complete to the best of the undersigned's information and belief, and the undersigned hereby agrees promptly to notify and supply corrective information to the Company if, prior to the consummation of the undersigned's investment in the Company, any of such information becomes inaccurate or incomplete.

For Execution by Natural Person(s)

Signature of Prospective Investor

Please Print Name

Executed at _____

City

State

on this _____ day of _____, 2012.

For Execution by Corporate, Partnership or Trust Prospective Investor

Name of Corporation, Partnership or Trust (Please Print)

By: _____

Title: _____

Signature of person making the
investment decision on behalf of the entity.

Executed at _____

City

State

on this _____ day of _____, 2012.

**DISCLOSURE SCHEDULES
TO
SECURITIES PURCHASE AGREEMENT**

Dated as of November 1, 2012

Among

Novelos Therapeutics, Inc. and Renova Industries Ltd.

These Disclosure Schedules, dated as of November 1, 2012, are being delivered by Novelos Therapeutics, Inc., a Delaware corporation (the "Company"), pursuant to the Securities Purchase Agreement, dated as of November 1, 2012 (the "Agreement"), by and among the Company and Renova Industries Ltd. Any capitalized terms used in these Disclosure Schedules but not otherwise defined therein shall be defined as set forth in the Agreement.

These Disclosure Schedules are arranged in sections that correspond to the sections of the Agreement. With respect to any section hereof corresponding to a section of Article IV of the Agreement (i) each such section hereof qualifies the correspondingly numbered representation or warranty to the extent specified herein, and (ii) any disclosure set forth with respect to a particular section of Article IV shall be deemed to be disclosed in reference to such other sections of Article IV to the extent it is reasonably clear from a reading of the disclosure that such disclosure is applicable to such other sections or subsections.

The Company may, at its option, include in these Disclosure Schedules items that are not material in order to avoid any misunderstanding, and such inclusion, or any references to dollar amounts, shall not be deemed to be an acknowledgement or representation that such items are material, to establish any standard of materiality or to define further the meaning of such terms for purposes of the Agreement. No disclosure in these Disclosure Schedules relating to a possible breach or violation of any Material Contract, law or order shall be construed as an admission or indication that breach or violation exists or has actually occurred.

The insertion of headings in these Disclosure Schedules is for convenience of reference only and shall not affect or be utilized in construing or interpreting the Agreement. All references in these Disclosure Schedules to any "Section" or "Article" are to the corresponding Section or Article, as applicable, of the Agreement unless otherwise specified.

Schedule 3.2

Bank: Citizens Bank RI
Bank Address: 1 Citizens Drive, Riverside, RI 02915, USA
617-527-8059
Account Name: Novelos Therapeutics, Inc.
Account Address: One Gateway Center, Suite 504
Newton, MA 02458, USA
ABA (Routing) #: 011500120
Swift Code: CTZIUS33
Account #: 1310914637

Schedule 4.3

Capitalization

4.3(a)(i) At the Closing Date authorized capital stock of the Company consists of 150,000,000 shares of \$.00001 par value common stock and 7,000 shares of preferred stock.

4.3(a)(ii) At the Closing Date there are 44,397,997 shares of common stock outstanding and no shares of preferred stock outstanding.

4.3(a)(iii) At the Closing Date there are 4,675,754 shares of common stock issuable pursuant to the Company's stock plans.

4.3(a)(iv) Immediately prior to Closing, the following shares are reserved for future issuance upon exercise of stock options or warrants:

Stock Options	4,675,754
Warrants	18,512,459
Total shares reserved for future issuance	<u>23,188,213</u>

4.3(a)

Immediately prior to Closing, the Company has the following outstanding warrants:

<u>Offering</u>	<u>Outstanding</u>	<u>Exercise Price</u>	<u>Expiration Date</u>
2012 Registered Direct	2,981,440	\$ 1.25	June 2017
2011 Underwritten Offering	9,248,334	\$ 0.60	December 2016
April 2011 PIPE	6,058,811	\$ 0.75	March 2016
2010 registered offering warrants	27,310	\$ 0.60	July 2015
Preferred incentive warrants	105,040	\$ 16.07	July 2015
Series E - Purdue	60,330	\$ 99.45	December 2015
Purdue - common financing	31,194	\$ 100.98	December 2015
Total	<u>18,512,459</u>		

The following is a listing of the Company's documents relating to the rights of stockholders, or holders of securities exercisable for the Company's common stock as related to the Company's outstanding common stock, stock options and warrants described above:

Description	EDGAR Reference		Exhibit No.
	Form	Filing Date	
2000 Stock Option and Incentive Plan	SB-2	November 16, 2005	10.2
Form of 2004 non-plan non-qualified stock option	SB-2	November 16, 2005	10.3
Form of non-plan non-qualified stock option used from February to May 2005	SB-2	November 16, 2005	10.4
Form of non-plan non-qualified stock option used after May 2005	SB-2	November 16, 2005	10.5
2006 Stock Incentive Plan, as amended	S-1/A	December 7, 2009	10.16
Form of Incentive Stock Option under Novelos Therapeutics, Inc.'s 2006 Stock Incentive Plan*	8-K	December 15, 2006	10.1
Form of Non-Statutory Stock Option under Novelos Therapeutics, Inc.'s 2006 Stock Incentive Plan	8-K	December 15, 2006	10.2
Form of Non-Statutory Director Stock Option under Novelos Therapeutics, Inc.'s 2006 Stock Incentive Plan*	8-K	December 15, 2006	10.3
Common Stock Purchase Warrant dated February 11, 2009	8-K	February 18, 2009	4.2
Securities Purchase Agreement dated August 25, 2009	S-1	September 15, 2009	10.41
Common Stock Purchase Warrant dated August 25, 2009	S-1	September 15, 2009	10.43
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
Form of Securities Purchase Agreement dated July 21, 2010	8-K	July 22, 2010	10.1

Form of Common stock Purchase Warrant dated April 8, 2011	8-K	April, 11 2011	4.3
Securities Purchase Agreement dated April 8, 2011	8-K	April 11, 2011	10.1
Form of Warrant dated December 6, 2011	S-1/A	November 9, 2011	4.2
Form of Securities Purchase Agreement dated June 7, 2012	8-K	June 11, 2012	10.1
Form of Common Stock Purchase Warrant dated June 13, 2012	8-K	June 11, 2012	4.1
Form of Amendment to Class B Common Stock Purchase Warrant	8-K	September 12, 2012	10.1

Schedule 4.3 (continued)

4.3(b)

The following table sets forth the pro forma capitalization of the Company on a fully diluted basis giving effect to (i) the issuance of the Common Stock and Warrants at the time of the Closing, (ii) any adjustments in other securities resulting from the issuance of the Common Stock and Warrants at the time of the Closing, and (iii) the exercise or conversion of all outstanding securities.

Pro Forma NVLT - Capital Structure Post-Private Placement

	Common Stock Equivalents	Exer./Conv. Price	Expiration
Common stock outstanding	46,397,997		
Warrants/Options:			
2012 Private Placement - Renova	2,000,000	\$1.00	January 2013
2012 Private Placement - Renova	1,000,000	\$1.25	October 2017
2012 Registered Direct - Class A	2,981,440	\$1.25	June 2017
2011 Underwritten Offering	9,248,334	\$0.60	December 2016
April 2011 PIPE	6,058,811	\$0.75	March 2016
2010 registered offering warrants	27,310	\$0.60	July 2015
Stock Options	4,639,516	\$0.45-\$1.88	May2021;Dec 2021
Novelos legacy options and warrants	232,802	\$62.21	2015 through 2019
FULLY DILUTED	72,586,210		

4.3(c) Arrangements that provide rights for any Person to purchase an equity interest in the Company consist of the stock options and warrants, previously disclosed in schedule 4.3(a).

4.3(d) – None.

Schedule 4.5

Consents

None.

Schedule 4.6

Delivery SEC Filings

We have separately furnished to the Purchaser on a confidential basis a draft Form 10-Q with respect to the three and nine month periods ended September 30, 2012 (the "September 30, 2012 Form 10-Q"). The Company anticipates filing the September 30, 2012 Form 10-Q in substantially the form provided to the Purchaser.

Schedule 4.7

No Material Adverse Change

1. On September 10, 2012, the Company amended Class B Warrants to purchase 5,255,000 shares of common stock to extend the expiration date for the exercise of such warrants for a period of thirty days; from September 11, 2012 to October 11, 2012. We filed with the Securities and Exchange Commission the form of the Amendment to the Class B Warrants on Form 8-K on September 12, 2012. Prior to the expiration of the Class B Warrants, the Company received warrant exercises with respect to an aggregate of 1,088,300 shares of common stock underlying the Class B Warrants, and received aggregate cash proceeds of \$1,088,300 in respect of those exercises. The balance of the Class B Warrants, exercisable for up to 4,317,500 shares of common stock, expired. We filed a current report on Form 8-K with the Securities and Exchange Commission on October 15, 2012 to report such matter under Item 8.01.
 2. On October 25, 2012, the Company held a special meeting in lieu of annual meeting of stockholders. At the meeting, the stockholders reelected Thomas Rockwell Mackie, James S. Manuso and John E. Niederhuber as Class I directors and approved an amendment to the 2006 Stock Incentive Plan to increase the number of shares of common stock issuable thereunder from 7,000,000 to 10,000,000.
 3. To the extent appropriate, the disclosures in the September 30, 2012 Form 10-Q are incorporated by reference into this Schedule and to such other Schedules the extent it is reasonably clear from a reading of the disclosure in the Form 10-Q that such disclosure is applicable to such other Schedules.
-

Schedule 4.9

No Conflict, Breach, Violation or Default

None.

Schedule 4.10

Tax Matters

None.

Schedule 4.11

Title to Properties

The properties and assets of our wholly-owned subsidiary (Collectar, Inc.) are subject to the terms and provisions of a General Business Security Agreement in favor of the Wisconsin Department of Commerce ("DOC") securing the indebtedness evidenced by Promissory Notes held by DOC in the original principal amounts of \$250,000 and \$200,000 (see Schedule 4.28).

Schedule 4.14

Intellectual Property

4.14(a) None.

4.14(d) 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. On June 9, 2011, BAM filed an amended counterclaim alleging additional claims related to Novelos' acquisition of Cellectar. In that amended counterclaim, BAM alleges that the acquisition evidences Novelos' abandonment of the technology assigned to it by BAM constituting a breach of the June 2000 Agreement or, if that agreement is determined to no longer be in effect, a breach of the April 2005 Agreement and/or a breach of the implied duty of good faith and fair dealing with respect to the April 2005 Agreement. On June 15, 2011 the Company filed its response to their amended counterclaim. On August 5, 2011, the Company filed a motion for judgment on the pleadings as to its declaratory judgment count and all counts of BAM's amended counterclaim. The motion was opposed by BAM and a hearing on the motion was held on September 27, 2011. On October 17, 2011, the court ruled on the Company's behalf for each of its declaratory judgment claims and dismissed all counts of BAM's counterclaim. Judgment in favor of the Company was entered on October 20, 2011. On November 14, 2011, BAM filed a notice of appeal. The Company believes the counterclaims are without merit and intend to vigorously defend against them.

Schedule 4.16

Litigation

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. On June 9, 2011, BAM filed an amended counterclaim alleging additional claims related to Novelos' acquisition of Collectar. In that amended counterclaim, BAM alleges that the acquisition evidences Novelos' abandonment of the technology assigned to it by BAM constituting a breach of the June 2000 Agreement or, if that agreement is determined to no longer be in effect, a breach of the April 2005 Agreement and/or a breach of the implied duty of good faith and fair dealing with respect to the April 2005 Agreement. On June 15, 2011 the Company filed its response to their amended counterclaim. On August 5, 2011, the Company filed a motion for judgment on the pleadings as to its declaratory judgment count and all counts of BAM's amended counterclaim. The motion was opposed by BAM and a hearing on the motion was held on September 27, 2011. On October 17, 2011, the court ruled on the Company's behalf for each of its declaratory judgment claims and dismissed all counts of BAM's counterclaim. Judgment in favor of the Company was entered on October 20, 2011. On November 14, 2011, BAM filed a notice of appeal.

Schedule 4.19

Brokers and Finders

None.

Schedule 4.24

Affiliate Transactions

One of our directors, John Neis, is a managing director of Venture Investors LLC, which beneficially owns approximately 22% of our common stock.

Jamey Weichert, our Chief Scientific Officer and principal founder of Collectar, and a director and shareholder of the Company, is a faculty member at the University of Wisconsin-Madison (U. Wisc.). During the year ended December 31, 2011, we made contributions totaling \$206,500 to U. Wisc. for use towards unrestricted research activities. During the six months ended June 30, 2012, we made contributions to UW totaling \$144,000 for use towards unrestricted research activities and paid UW \$144,044 for costs associated with clinical trial agreements. The Company made contributions to the UW of \$62,500 during the six months ended June 30, 2011.

Legacy Compounds – Transactions and Litigation

From its inception through 2010, Novelos was primarily engaged in the development of certain oxidized glutathione-based compounds for application as therapies for disease, particularly cancer. These compounds were originally developed in Russia. In June 2000, Novelos acquired commercial rights from the Russian company (“ZAO BAM”) which owned the compounds and related Russian patents. In April 2005, Novelos acquired worldwide rights to the compound (except for the Russian Federation) in connection with undertaking extensive development activities in an attempt to secure US Food and Drug Administration (“FDA”) approval of the compounds as therapies. These development activities culminated in early 2010 in an unsuccessful Phase 3 clinical trial of an oxidized glutathione compound (NOV-002) as a therapy for non-small cell lung cancer. The principal equity owner of ZAO BAM, Mark Balazovsky, was a founder of Novelos and served as a director until November 2006. Pursuant to the April 2005 royalty and technology transfer agreement, Novelos is required to pay ZAO BAM royalties equal to 1.2% of net sales of oxidized glutathione products and \$2,000,000 for each new oxidized glutathione drug following FDA approval of such drug. In the absence of royalty payments, Novelos is required to pay ZAO BAM 3% of all license revenues plus 9% of the amount by which Novelos’ license revenues exceed its total expenses. In 2008, Novelos paid \$15,000 to ZAO BAM representing 3% of payment under a foreign license agreement. Novelos is also obligated 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. Simyon Palmin, a founder of Novelos, a director until August 15, 2008 and the father of Harry Palmin, is president of Oxford Group. At this time, Novelos does not expect to devote any substantial resources to the further development of its oxidized glutathione compounds.

After the disclosure of the negative outcome of the Phase 3 clinical trial in 2010, ZAO BAM claimed that Novelos modified the chemical composition of NOV-002 without prior notice to or approval from ZAO BAM, constituting a material breach of the June 2000 technology and assignment agreement. In September 2010, Novelos filed a complaint in Massachusetts Superior Court seeking a declaratory judgment by the court that the June 2000 agreement has been entirely superseded by the April 2005 agreement and that the obligations of the June 2000 agreement have been performed and fully satisfied. ZAO BAM answered the complaint and alleged counterclaims. In August 2011, Novelos filed a motion for judgment on the pleadings as to the declaratory judgment count and all counts of ZAO BAM's amended counterclaims. On October 17, 2011, the court ruled in favor of Novelos on each of the declaratory judgment claims and dismissed all counts of ZAO BAM's counterclaim. Judgment in favor of Novelos was entered on October 20, 2011. On November 14, 2011 ZAO BAM filed a notice of appeal.

Schedule 4.25

Trading Compliance

On September 18, 2012, we received a notice from OTC Markets Group notifying us that our Investment Bank Designated Advisor for Disclosure ("DAD") and sponsor to the OTCQX, Rodman and Renshaw, LLC had ceased conducting its securities business and no longer qualified as a DAD. OTC Markets Group provided us 30 days to name a new DAD sponsor and has subsequently extended that period to November 17, 2012. We are currently in the process of identifying a new investment bank sponsor and intend to name a new sponsor prior to the current deadline.

Schedule 4.28

Indebtedness

4.28(i)

Our wholly-owned subsidiary Collectar, Inc. has the following indebtedness:

Promissory Notes held by the Wisconsin Department of Commerce in the original principal amounts of \$250,000 and \$200,000 with interest accruing at 2%. Balance due as of September 30, 2012, including accrued interest, totaled \$467,334.25. Principal and interest payments commence in May 2015 and are due in monthly installments through April 2017.

The following financing statements securing obligations in material amounts are filed with respect to Collectar:

A UCC financing statement (filing #100011830417) was filed on October 5, 2010 to secure Collectar's obligations to the Wisconsin Department of Commerce, as described in 4.28(i) above. The financing statement expires on October 5, 2015.

Schedule 7.3

Use of Proceeds

As of the date of this Agreement, the Project is estimated to cost approximately \$3,110,000 in the aggregate, with material components thereof estimated to be as set forth below. Both the aggregate cost and the allocation among the components below are subject to such change as the Project may require.

	Estimated Cost
Hot Cell	\$ 1,455,000
Building/construction	\$ 1,004,000
Equipment	\$ 431,800
Personnel Hours	\$ 220,000
Total	\$ 3,110,000

I, HARRY S. PALMIN, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Novelos Therapeutics, Inc., a Delaware Corporation;
2. Based on my knowledge, this report does not contain any untrue statement of a 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.

Date: November 6, 2012

/s/ Harry S. Palmin
Harry S. Palmin
President and Chief Executive Officer (Principal Executive Officer)

I, JOANNE M. PROTANO, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Novelos Therapeutics, Inc., a Delaware Corporation;
2. Based on my knowledge, this report does not contain any untrue statement of a 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.

Date: November 6, 2012

/s/ Joanne M. Protano
Joanne M. Protano
Chief Financial Officer (Principal Financial and Accounting Officer)

**CERTIFICATION PURSUANT TO
18 U.S.C. § 1350
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

In connection with the Quarterly Report on Form 10-Q of Novelos Therapeutics, Inc. (the "Company") for the quarter ended September 30, 2012, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), we, Harry S. Palmin, President and Chief Executive Officer of the Company, and Joanne M. Protano, Vice President, Chief Financial Officer and Treasurer of the Company, certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, to our knowledge, that:

- 1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; 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
President, Chief Executive Officer (Principal Executive Officer)

Date: November 6, 2012

/s/ Joanne M. Protano
Joanne M. Protano
Chief Financial Officer (Principal Financial and Accounting Officer)

Date: November 6, 2012
