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Novan Inc. (NOVN - NASDAQ)

Outstanding Pivotal Results Double Valuation

Based on our DCF model and a 15% discount rate, Novan is valued at approximately $90.00 per share. Our model applies a 85% probability of ultimate approval and commercialization for SB206 for molluscum contagiosum. The model includes contributions from the United States and Japan.

Current Price (6/11/21)	$14.68
Valuation	**$90.00**

OUTLOOK

Novan is a research & development company which employs nitric oxide (NO) to address a number of indications for a variety of skin conditions including molluscum contagiosum (MC), acne, dermatitis, psoriasis, warts, SARS-CoV-2 & HPV. Novan uses its Nitricil technology to efficiently deliver NO to desired locations & release it at a controlled rate in human & animal health. Lead candidate SB206 is being investigated in a pivotal Ph3 trial for MC. SB206 & other Novan compounds store NO in large polymer macromolecules which allows for stable and druggable NO. Additional Nitricil compounds are in clinical & preclinical stages of development for other skin conditions. However, Novan is primarily focused on developing SB206.

We expect pivotal trials for SB206 to generate registrational data for MC in 2021 followed by the submission of an NDA in 3Q:22 if data are supportive. Our valuation assumes a 2023 regulatory approval and commercialization of SB206 in the US. Partner Sato will advance the candidate through the regulatory & commercialization process in Japan and we anticipate a 2023 regulatory submission in that jurisdiction followed by a 2024 launch.

SUMMARY DATA

52-Week High	**$25.90**
52-Week Low	**$3.00**
One-Year Return (%)	**254**
Beta	**-0.06**
Average Daily Volume (sh)	**2,636,961**
Shares Outstanding (mil)	**15.2**
Market Capitalization ($mil)	**223**
Short Interest Ratio (days)	**0.37**
Institutional Ownership (%)	**12.1**
Insider Ownership (%)	**7.3**
Annual Cash Dividend	**$0.00**
Dividend Yield (%)	**0.00**
5-Yr. Historical Growth Rates	
Sales (%)	**N/A**
Earnings Per Share (%)	**N/A**
Dividend (%)	**N/A**
P/E using TTM EPS	**N/A**
P/E using 2020 Estimate	**N/A**
P/E using 2021 Estimate	**N/A**
Zacks Rank	**N/A**

Risk Level	**Above Average**
Type of Stock	**Small-Growth**
Industry	**Med-Biomed/Gene**

ZACKS ESTIMATES

Revenue

(in millions of $US)

	Q1 (Mar)	Q2 (Jun)	Q3 (Sep)	Q4 (Dec)	Year (Dec)
2020	$1.2 A	$1.3 A	$1.3 A	$1.1 A	$4.9 A
2021	$0.8 A	$0.9 E	$0.9 E	$0.9 E	$3.5 E
2022					$3.6 E
2023					$172.1 E

Earnings per Share

	Q1 (Mar)	Q2 (Jun)	Q3 (Sep)	Q4 (Dec)	Year (Dec)
2020	-$1.66 A	-$1.00 A	-$0.63 A	-$0.46 A	-$2.96 A
2021	-$0.60 A	-$0.51 E	-$0.50 E	-$0.45 E	-$2.00 E
2022					-$1.20 E
2023					$4.46 E

WHAT'S NEW

B-SIMPLE4 Topline Results

After years of investment in the SB206 program, on June 11, 2021, Novan announced statistically significant and positive results for its primary and secondary endpoints for B-SIMPLE4. The pivotal trial was investigating the use of SB206 in molluscum contagiosum to clear lesions related to the disease. Topline results were announced in a press release and discussed in a conference call held the morning of the announcement. The trial demonstrated an almost 13 percentage point improvement in complete clearance in SB206-treated molluscum contagiosum patients compared with vehicle, significant at the 0.01% level ($p<0.0001$).

These results are better than our expectations and, in our opinion, merit a doubling of the target price. We see additional upside to the ~60% share increase on Friday and several other near-term catalysts which can justify further increases prior to commercialization.

In the prior Phase III trials run for SB206, designated B-SIMPLE1 and B-SIMPLE2, enrollment of 340 subjects was targeted for each and subjects were randomized 2:1 under a QD (once per day) dosing regimen, guided by Phase II work. The primary endpoint was the proportion of patients with complete clearance (CC) by week 12. Secondary and exploratory endpoints included proportion of patients:

- 100% clearance of lesions by week 8;
- 95% of lesions at week 12, 90% of lesions at week 12; and
- 75% of lesions by week 12.

Results from B-SIMPLE1 and 2 were insufficient to support a new drug application (NDA), despite an improvement in outcomes for SB206 patients. Dropouts, results for households with multiple children and a high hurdle of complete clearance negatively impacted the results. After consultation with the FDA regarding the results of the trials, the agency encouraged the attempt of another pivotal trial which, if successful, could rely on B-SIMPLE2 results to serve as the confirmatory trial in an NDA submission. Equipped with a statistically significant primary endpoint in B-SIMPLE4, Novan is now able to proceed.

Similar to B-SIMPLE1 and 2, B-SIMPLE4 was a multi-center, double-blind, randomized, vehicle-controlled study with a primary endpoint of proportion of patients achieving CC using the once-daily (QD), 12% berdazimer sodium concentration. B-SIMPLE4 improved on previous trials by enrolling 891 (vs. ~700) patients, randomizing 1:1 instead of 2:1, and ensuring adequate representation of multi-child households. The primary endpoint of percentage of patients with CC, treated versus vehicle, was statistically significant ($p < 0.0001$). Management attributed the successful results to a two-fold combination of increasing subject count in the trial and enhanced training for clinical site personnel. A shortcoming of previous pivotal trials was the loss of a relatively high proportion of patients to discontinuation. These patients were counted as failures. Enhanced training for B-SIMPLE4 site managers helped improve the discontinuation rate. In B-SIMPLE4, the discontinuation rate fell to 11.3% in the SB206 arm versus 18.2% and 19.8% in the SB206 arms for B-SIMPLE1 and 2, respectively, illustrating the success of improved training and protocols. In the first two Phase III trials, loss to follow up was a leading reason for discontinuing treatment early and almost certainly contributed to the endpoint miss. Consistent with previous clinical results, B-SIMPLE4 observed no treatment-related serious adverse events.

Exhibit I - B-SIMPLE4 Topline Results[1]

	SB206 (N=444)	Vehicle (N=447)	p-value
Complete Clearance of All Lesions at Week 12*	32.4%	19.7%	p < 0.0001
Proportion Achieving a Lesion Count of 0 or 1 at Week 12**	43.5%	24.6%	p < 0.0001
Proportion Achieving ≥90% Clearance of Lesions at Week 12**	43.0%	23.9%	p < 0.0001
Complete Clearance of All Lesions at Week 8**	19.6%	11.6%	p = 0.0014

*Primary Endpoint, **Secondary Endpoint

[1] Sourced from Company Press Release

Topline results for the trial included a statistically significant primary endpoint, a significant milestone for Novan after failing to meet primary endpoints in B-SIMPLE1 and B-SIMPLE2, arming Novan with the missing piece required for an NDA submission. Not only did the results present substantially improved p-values, but the percentage point difference for the primary endpoint was greater as well.[2] Furthermore, when relaxing the strict criteria of complete clearance to allow for one lesion or less remaining, the efficacy of SB206 is even more apparent, with 43.5% of subjects clearing almost completely versus 24.6% of patients receiving the vehicle. Subjects were almost twice as likely (77%) to almost or completely clear their lesions at twelve weeks than those that were administered vehicle alone. Even 8 weeks of treatment was sufficient to observe a statistically significant improvement in clearance. Finally, the differences witnessed between one- and two-subject households in the previous B-SIMPLE trials were not observed in B-SIMPLE4.

Exhibit II - B-SIMPLE4 Subjects, Sites and Baseline Lesions[3]

	SB206	Vehicle
ITT Population	444	447
Completed 12 Weeks of Treatment	394	400
Premature Discontinuation	11.3%	10.5%
% of Sites Dermatologists	58.6%	59.3%
Mean Age	6.6	6.5
% Ages 2 to 17	95%	96%
Female	51.4%	47.7%
Male	48.6%	52.3%
Mean Baseline Lesion Count (Median)	23.1 (18.5)	20.5 (15.0)

The B-SIMPLE4 SB206 arm presented a higher mean and median baseline lesion count compared with the vehicle arm, setting a higher hurdle for complete clearance. Premature discontinuation of the trial is comparable between SB206 and vehicle arms, a function of enhanced site training implemented by Novan.

Exhibit III - B-SIMPLE4 Safety and Tolerability[4]

	B-SIMPLE4		B-SIMPLE2	
	SB206 (n = 444)	Vehicle (n = 447)	SB206 (n = 237)	Vehicle (n = 117)
Subjects with at least one TEAE	189 (42.6%)	103 (23.0%)	120 (50.6%)	29 (24.8%)
Application site				
Pain	83 (18.7%)	23 (5.1%)	36 (15.2%)	2 (1.7%)
Erythema	51 (11.5%)	6 (1.3%)	26 (11.0%)	0
Pruritus	33 (7.4%)	5 (1.1%)	8 (3.4%)	2 (1.7%)
Exfoliation	26 (5.9%)	0	9 (3.8%)	0
Dermatitis	25 (5.6%)	3 (0.7%)	11 (4.6%)	1 (0.9%)
Total	169 (38.1%)	103 (23.0%)	85 (35.9%)	29 (24.8%)

SB206 was safe and well tolerated and there were no serious adverse events. The SB206 arm adverse event profile did differ from vehicle. The most common adverse events reported were pain, erythema and pruritus, all at application sites. Pain category lacks the resolution of finer descriptors such as ‘stinging’ or ‘burning’, which may be expected when applying a topical treatment to lesions. Safety results were comparable to B-SIMPLE2.

[2] B-SIMPLE4 generated a 12.7 percentage point improvement between the two arms (32.4% - 19.7%) whereas the B-SIMPLE1 and B-SIMPLE2 trials generated a 4.2 and 9.7 percentage point improvement respectively.
[3] Sourced from Company Presentation
[4] Sourced from Company Presentation

Next Steps

Safety data will be collected at Week 24, after which final results will follow. Management has guided toward a final data readout in 3Q:21. Management then expects to request a pre-NDA meeting with the FDA, prepare the NDA, and then submit, potentially in 3Q:22. Management also expects commercial production of SB206 to begin ramping up by end of 2021, and is keeping commercialization options open, pursuing internal, external or hybrid options that maximize value. Novan has spoken with potential commercialization partners in the past, some of whom deferred interest until B-SIMPLE4 results were available. We expect that the positive topline results will stimulate future partnership discussions.

Preclinical Data for SB019 in COVID-19

Novan announced positive preclinical data for SB019 in COVID-19 anti-viral therapy program in a June 10th press release. Two *in vivo* studies were conducted in Syrian hamsters at the Institute for Antiviral Research at Utah State University. The results from the study and the confirmatory repeat of the same study, both independently demonstrated the ability of berdazimer sodium to reduce viral burden in SARS-CoV-2 infected animals and to deter inter-animal transmission. Berdazimer sodium (NITRICIL) was able to prevent progression of the infection into the lungs after transmission and limited disease severity significantly. In light of the positive results, Novan is exploring opportunities to develop its platform in the COVID-19 indication both internally and through partnership.

The work evaluated SB019's ability to limit the infection in exposed animals, and also the effect of SB019 on transmissibility. SARS-CoV-2 infected animals were co-housed with healthy animals to create the conditions for transmission. Berdazimer sodium was administered once daily at various doses versus placebo control. Endpoints evaluated disease severity and included nasal and lung tissue viral count and body weight change, as a proxy for infection. Syrian hamsters begin to lose weight shortly after SARS-CoV-2 infection.[5]

Dose-dependent, statistically significant reduction ($p < 0.0001$) in lung viral count was observed in treated animals at a dose as low as 2 mg/mL. Healthy hamsters cohabitated with infected hamsters and treated with berdazimer sodium had average viral counts reduced by greater than 99.99% compared to placebo, with detectable levels of virus absent in lung tissue for over half the animals.

Novan plans to submit a request to the FDA to discuss paths to evaluate SB019 in human COVID-19 patients in a timely manner. Novan is considering the development and submission of an investigational new drug (IND) application that would require regulatory guidance, successful IND-enabling toxicology studies, and financing or strategic partnering.

Exhibit IV - Hamster Wearing Mask[6]

[5] Muñoz-Fontela, C., Dowling, W.E., Funnell, S.G.P. *et al.* Animal models for COVID-19. *Nature* **586,** 509–515 (2020). https://doi.org/10.1038/s41586-020-2787-6

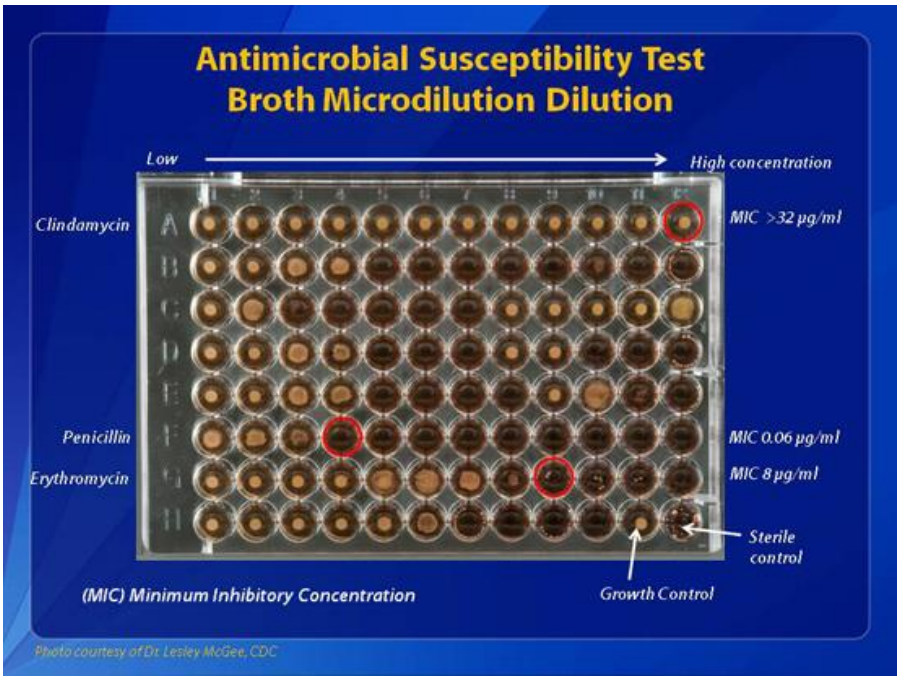
[6] Shutterstock.com

NVN4100 *In Vitro* Assay, and Canine Pyoderma Model Development

On June 7, 2021, Novan issued a press release disclosing results from an exploratory study of the company's NITRICIL technology in canine pyoderma. The candidate, NVN4100, targets topical use in canines and represents Novan's expansion into the companion animal health space. The results of the *in vivo* trial were positive and demonstrated NVN4100's antimicrobial effect against a wide variety of relevant bacteria. Based on the results, Novan is now contemplating additional formulation and preclinical evaluations, as well as exploring strategic partnership opportunities. Grand View Research estimated that the total global companion animal health market to be over $18 billion in 2020.[7]

The *in vivo* and *in vitro* work was conducted by third parties and arranged by Scullion Strategy Group, LLC, experts in animal health, who oversaw the studies and assessed technical feasibility and market potential. The work determined the minimum inhibitory concentration (MIC) and minimum bactericidal concentration (MBC) of NVN4100 using broth dilution antimicrobial susceptibility testing against a set of relevant microorganisms. *In vitro* results showed that NVN4100 provided both inhibitory and bactericidal effects against a variety of pathogens, including antimicrobial resistant and susceptible strains commonly associated with animal skin and ear conditions.

Exhibit V - Example of Broth Dilution Antimicrobial Susceptibility Test[8]



The *in vitro* work supported the potential efficacy of NVN4100 against common companion animal health bacterial strains, and development of the pyoderma canine model is promising in the further development of this candidate.

Through another collaboration with an animal health research organization, a canine pyoderma model was established. Pyoderma is one of the most common skin conditions in dogs and is often resistant to first-line antimicrobials. The results suggest that the canine model may support additional development of topical NVN4100 as an alternative to current systemic and topical antimicrobials. The establishment of the pyoderma model was a significant result of the exploratory work.

[7] Companion Animal Health Market Size Report, 2021-2028 (grandviewresearch.com)
[8] Group B Strep: Information For Laboratorians | CDC. The use of this material, including any links to the materials on the CDC, ATSDR or HHS websites, does not imply endorsement by CDC, ATSDR, HHS or the United States Government. This material is available on the CDC website for no charge.

Exhibit VI – Priority Development Pipeline[9]

Product Candidate	Indication	Pre-IND	Phase 1	Phase 2	Phase 3	Approval	Program Highlight
DERMATOLOGY							
SB206	Molluscum						Target Reporting Topline Results Before the End of Q2 2021
INFECTIOUS DISEASE							
SB019	Coronavirus						First Demonstration of Antiviral Effect of NO Against SARS-CoV-2 in *In Vitro* Human Airway Infection Model
COMPANION ANIMAL							
NVN4100 (New Chemical Entity)	Antimicrobial						Seek Potential Strategic Partner Following PoC

1-for-10 Reverse Stock Split

Novan filed a press release on May 25th declaring a 1-for-10 reverse stock split, and on May 26 the shares traded on a split-adjusted basis. At the company's 2020 Annual Meeting of Stockholders,[10] shareholders approved the amendment to effect a reverse stock split in a ratio of anywhere between 1:2 to 1:15 which allows the Board to determine the implementation and timing of the action. Prior to the split, Novan was close to reaching its authorized number of shares outstanding given the share balance and warrant, option and Aspire purchase agreement obligations. With commercialization and a potential partnering arrangement anticipated in the near future, Novan will require sufficient capital to execute a decisive launch of SB206.

The primary benefits of the 1:10 reverse split include:

- Ability to raise sufficient funds to:
  - Initiate commercialization activities and hire sales team;
  - Develop favorable negotiating stance in partnership negotiations;
- Provide wide margin to remain within NASDAQ compliance requirements;
- Increase attractiveness to institutional shareholders that require $5 minimum share price.

Exhibit VII – Novan Expansion Pipeline[11]

Product Candidates	Indication	Pre-IND	Phase 1	Phase 2	Phase 3	Program Highlight
DERMATOLOGY						
SB204	Acne Vulgaris					Two Phase 3's completed; One confirmatory Phase 3 needed; Protocol finalized
SB208	Tinea Pedis					Phase 2 trial complete; Phase 1 in nail growth complete
SB414	Atopic Dermatitis					Phase 1b trial complete; Phase 2 protocol finalized
	Psoriasis					Phase 1b trial complete; Potential to explore lower doses
MEN'S AND WOMEN'S HEALTH						
SB207	Genital Warts					End of Phase 2 meeting with FDA complete; Phase 3 protocols designed
WH504	High-Risk HPV					Formulation development ongoing; Funded by federal grants
WH602	High-Risk HPV					Formulation development ongoing; Funded by federal grants
GASTROENTEROLOGY						
Undisclosed	Various					Seeking grants to progress

[9] Source: Novan May 2021 Corporate Overview Slide Deck
[10] See related SEC filing here: https://novan.gcs-web.com/static-files/08be3180-1bdb-427e-bb99-84b73c3f8d63
[11] Source: Novan May 2021 Corporate Overview Slide Deck

Valuation

SB206's success in achieving primary and secondary endpoints at a high degree of statistical significance gives us increased confidence that Novan's lead candidate will be successfully submitted to the FDA in an NDA and be granted marketing approval. Based on the highly significant topline data, we increase our probability of success from 50% to 85%. We also increase our estimated peak penetration rate into the estimated six million individuals with molluscum from 9% to 10%, reflecting better patient and provider uptake based on the improved clearance level of molluscum for most or all lesions. Combining these factors in our model increases our target price from a split-adjusted $45.00 to $90.00.

Summary

Novan has been full of news these last few weeks. The reverse share split opens up the possibility to raise additional capital, which in turn places Novan in a stronger position to either commercialize SB206 or seek out licensing opportunities. Now with superb topline results from the B-SIMPLE4 trial, the primary focus of the company is to complete the 24-week safety assessment and generate data for a pre-NDA meeting with the FDA.

We anticipate parallel efforts on the commercialization front which include discussions with potential partners and evaluating internal aims. Based on guidance provided by company management, we anticipate trial completion and further analysis over the next few quarters, a 3Q:22 NDA filing, and the standard 10 month analysis period after NDA acceptance. This suggests that SB206 may begin commercialization by 3Q:23, assuming there are no delays and the product is approved.

In vivo work done in COVID-19 on animal models shows statistically significant reduction in viruses in lung tissue following daily administration of SB019 in a transmissibility model. Data was sufficiently strong to support advancing the candidate into the clinic and the company plans to identify a path forward for SB019 in consultation with the FDA. Recent developments in companion animal health represent a new frontier for Novan. Exploratory work *in vitro* and *in vivo* lends support for Novan's pursuit into a new market and continues to demonstrate the potential of the company's NITRICIL platform.

The impressive results from the B-SIMPLE4 trial justify an increase in our target price and we increase our valuation to $90 per share, up from a split-adjusted $45.

PROJECTED FINANCIALS

Novan, Inc. - Income Statement[12]

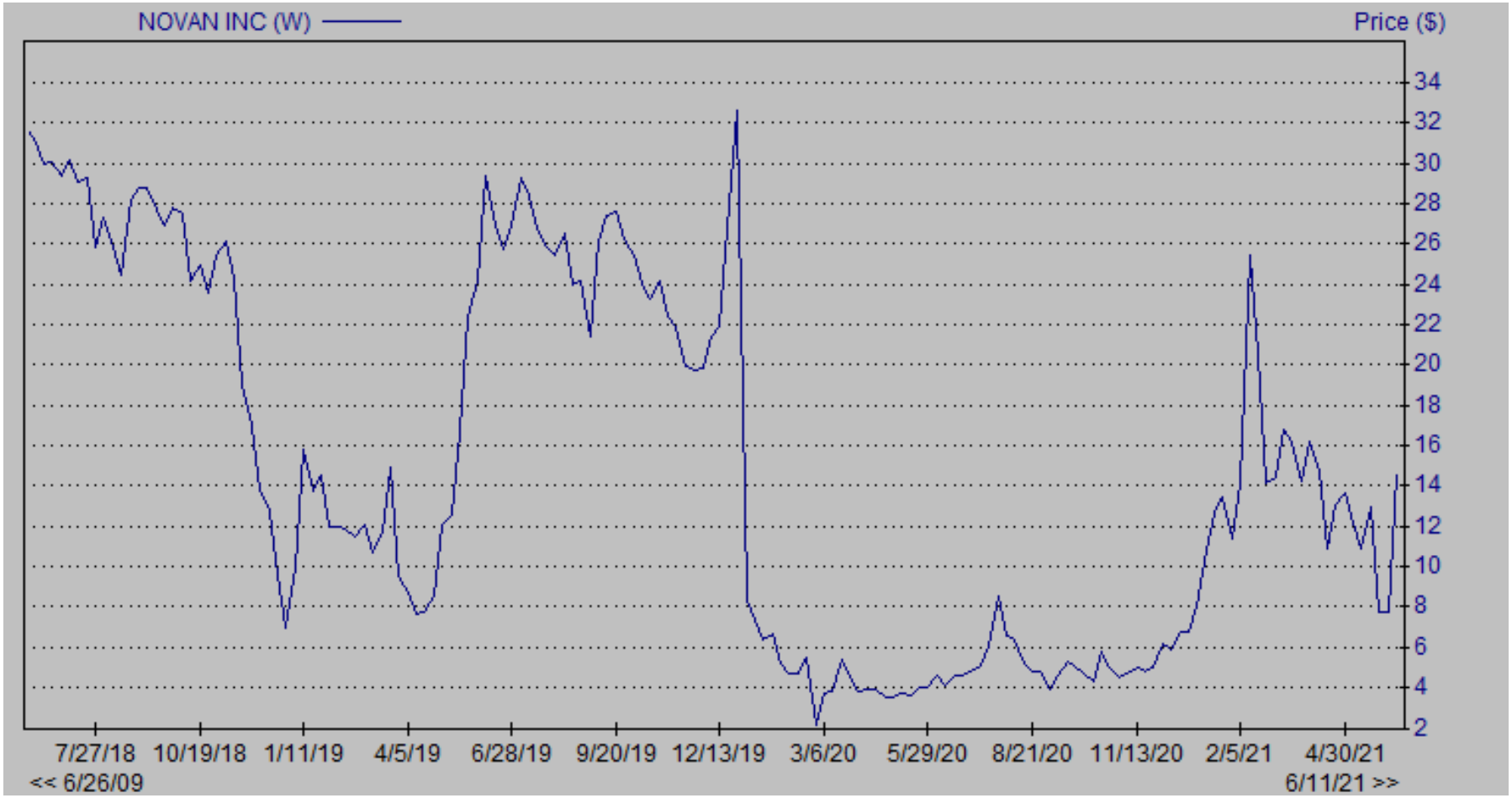
Novan, Inc.	2020 A	Q1 A	Q2 E	Q3 E	Q4 E	2021 E	2022 E	2023 E
Total Revenues ($US)	**$4,920**	**$819**	**$890**	**$890**	**$890**	**$3,489**	**$3,550**	**$172,105**
YOY Growth	*0%*	*-32%*	*-33%*	*-32%*	*-17%*	*-29%*		
Research & Development	$19,814	$6,418	$5,900	$5,800	$5,600	$23,718	$10,000	$5,000
Selling, General & Administrative	$11,271	$2,686	$2,700	$2,850	$2,800	$11,036	$14,000	$32,965
Other	$4,049	$0	$0	$0	$0	$0	$0	$0
Income from operations	($30,214)	($8,285)	($7,710)	($7,760)	($7,510)	($31,265)	($20,450)	$108,324
Operating Margin	*-614%*	*-1012%*	*-866%*	*-872%*	*-844%*	*-896%*	*-576%*	*63%*
Other Income	$870	($670)	$0	$0	$0	$0	$0	$0
Interest Income	$51	$3	$2	$2	$2	$9	$0	$0
Pre-Tax Income	($29,293)	($8,952)	($7,708)	($7,758)	($7,508)	($31,256)	($20,450)	$108,324
Provision for Income Tax	$0	$0	$0	$0	$0	$0	$0	$27,081
Tax Rate	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*25.0%*
Net Income	**($29,293)**	**($8,952)**	**($7,708)**	**($7,758)**	**($7,508)**	**($31,256)**	**($20,450)**	**$81,243**
Net Margin	*-595%*	*-1093%*	*-866%*	*-872%*	*-844%*	*-896%*	*-576%*	*47%*
Reported EPS	**($2.96)**	**($0.60)**	**($0.51)**	**($0.50)**	**($0.45)**	**($2.00)**	**($1.20)**	**$4.46**
Basic Shares Outstanding	9,881	15,003	15,200	15,500	16,800	15,626	17,000	18,200

Source: Company Filing // Zacks Investment Research, Inc. Estimates

[12] Financial statement information presents data as originally reported.

HISTORICAL STOCK PRICE

Novan, Inc. – Share Price Chart[13]



[13] Source: Zacks Research System

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