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ProMIS Neurosciences Inc (PMN – TSE)

2018 Financial & Operational Results

Based on our DCF model and a 15% discount rate, PMN is valued at approximately $7.00 per share. We apply a 7% probability of eventual sales of portfolio products in global markets.

Current Price (3/19/19)	$0.36
Valuation	**$7.00**

OUTLOOK

ProMIS is developing a portfolio of monoclonal antibodies to address AD, ALS and PD. The company's lead candidate, PMN310, is able to selectively target toxic oligomers which are thought to be the cause of neuron death in AD. Two proprietary, data-intensive algorithms are used to identify targets on misfolded proteins called ProMIS and Collective Coordinates. These allow for precise and efficient target identification.

ProMIS anticipates generating data from its first in-human trial in 2020 following finalization of IND-enabling work and IND submission for PMN310. The indication has a target population of over 10 million patients in the US and over 40 million ex-US with dramatic expected increases over the next decades. There is no existing treatment therapy available, providing a strong case for pricing and penetration if the drug is approved.

With recent FDA guidance regarding trial design, there is clearance for more focused endpoints and the use of biomarkers which may accelerate future development. Previous AD trial results and additional research have refined the optimal drug design and proper target. While still in early stage development, PMN310 makes a compelling case for success and should hold a dominant position in the market if trials are successful and regulatory approval is granted.

SUMMARY DATA

52-Week High	**$0.54**
52-Week Low	**$0.19**
One-Year Return (%)	**-26.5**
Beta	**-2.5**
Average Daily Volume (sh)	**277,023**
Shares Outstanding (mil)	**256**
Market Capitalization ($mil)	**$92.3**
Short Interest Ratio (days)	**1.98**
Institutional Ownership (%)	**N/A**
Insider Ownership (%)	**N/A**
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 2018 Estimate	**N/A**
P/E using 2019 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 $CAD)

	Q1 (Mar)	Q2 (Jun)	Q3 (Sep)	Q4 (Dec)	Year (Dec)
2017	$0.0 A	$0.0 A	$0.0 A	$0.0 A	$0.0 A
2018	$0.0 A	$0.0 A	$0.0 A	$0.0 A	$0.0 A
2019					$0.0 E
2020					$0.0 E

	Q1 (Mar)	Q2 (Jun)	Q3 (Sep)	Q4 (Dec)	Year (Dec)
2017	-$0.01 A	-$0.01A	-$0.01 A	-$0.01 A	-$0.03 A
2018	-$0.01 A	-$0.01 A	-$0.01 A	-$0.01 A	-$0.04 A
2019					-$0.06 E
2020					-$0.06 E

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WHAT'S NEW

2018 Operational and Financial Results

ProMIS Neurosciences Inc. (TSE: PMN) completed 2018 achieving a number of intended milestones including obtaining additional financing, advancing its Alzheimer's Disease (AD), Parkinson's Disease (PD) and amyotrophic lateral sclerosis (ALS) programs and adding to its management team and boards.

ProMIS began the year with an announcement of data demonstrating that lead candidate PMN310 does not bind to amyloid beta (Aβ) plaques in contrast to other Aβ antibodies such as aducanumab and bapineuzumab. This characteristic avoids dose limiting toxicities such as ARIA-E. The data further show the biologic's precise selectivity for toxic oligomers over plaques. These qualities were highlighted in comparison with BAN2401, which binds to both species as evidenced by an immunohistochemistry panel. Additional research demonstrated that PMN310's binding affinity to toxic oligomers was greater than aducanumab in surface plasmon resonance (SPR) testing while maintaining a similar ability to cross the blood brain barrier. In June, the company hired Selexis to begin manufacturing PMN310 and announced the start of producer cell line development.

Advancements on other programs beyond Aβ also took place which target toxic oligomers of α-syneuclein and TDP43. These proteins are implicated in PD and ALS respectively. Several novel targets of α-syneuclein were identified using the company's proprietary discovery platform, leading to the development of antibody candidates capable of neutralizing the toxic proteins. ProMIS was also able to identify misfolded, pathological forms of tau also in support of developing unique antibody candidates that will address them.

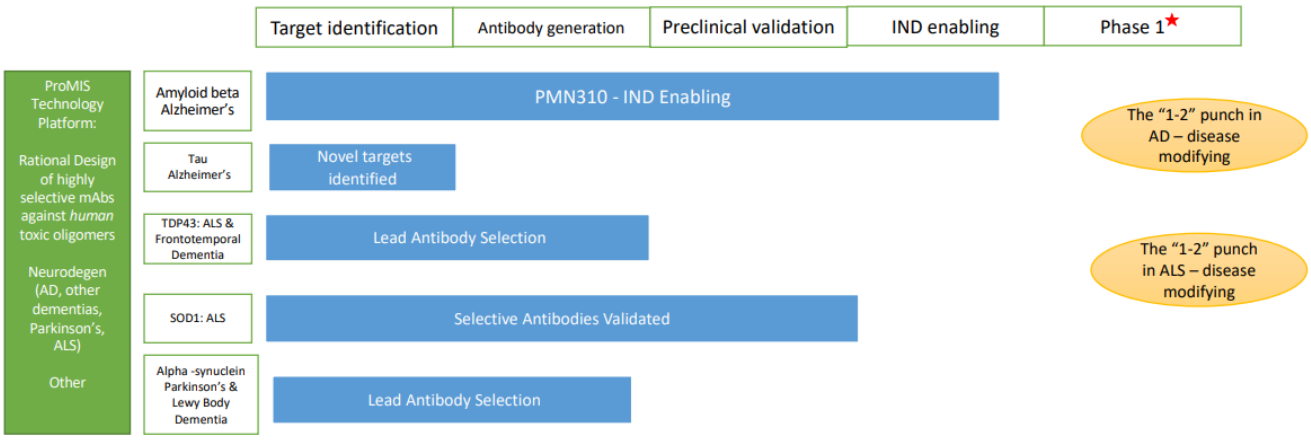
Financial results for 2018 were provided in a press release and SEDAR filings released on March 15, 2019. The company continued to advance its programs in 2018 and expended $10.2 million[1] in this effort. Research and development expenses were $7.4 million, nearly doubling from the prior year due to increased salaries and benefits, employee travel, patent expense and program expenses. General and administrative expenses were $2.8 million for the year, rising modestly on higher professional fees, investor and public relations spend and stock-based compensation partially offset by lower legal expense and share-based compensation. No service or product revenues were generated. We note that ProMIS recasted its 2017 expenditures to reflect a miscategorization of costs and shifted $257,000 from R&D to G&A for that year. We maintain the originally reported costs in our income statement for 2017.

At year end 2018, cash stood at $2.4 million, increasing $0.7 million compared to year end 2017. Cash burn for the year was ($8.6) million which was more than offset by $9.3 million of cash raised from financing. Following the end of the year, the company raised an additional $2.2 million. We expect current cash levels are to provide sufficient funding to support operations into 2Q:19.

ProMIS anticipates continued advancement of the Alzheimer's Disease (AD) portfolio and PMN310 in preclinical development. Phase I clinical trial results for PMN310 are expected to be ready by 2020. Other programs are also targeted for advancement including Tau in AD, TDP43 and SOD1 in amyotrophic lateral sclerosis (ALS) and α-synuclein for Parkinson's Disease (PD) as illustrated below in the company's pipeline.

[1] Currency is denominated in Canadian Dollars

Exhibit I – ProMIS Neurosciences Product Portfolio



Conferences

ProMIS has attended many investor and scientific conferences over the last year. Some of these meetings include Biotech Showcase, NobelCon, Wall Street Investor's Forum, Sachs Biocapital, AAIC and others. Presentations and meetings with investors, peers and companies from the Pacific Northwest, to California, Florida, New York, Canada and other international locations have taken place. These meetings have provided many opportunities for company management to present and explain their product portfolio to investors and the large pharmaceutical companies that may become valuable partners for the PD and ALS programs.

Partnerships

ProMIS has made it clear that they are seeking a partner for their α-synuclein and TDP43 programs while the internal focus centers on the amyloid-β and tau efforts. The company's unique platform to identify unique epitopes provides data that makes the therapeutic antibodies produced very valuable. Discussions are currently underway with unidentified partners to develop these programs. In a recent presentation the company highlighted two deals in the hundreds of millions of dollars with Prothena / Roche and BioArctic / ABBVIE (in blue below) along with a comparison of candidates in the neurodegenerative space.

Exhibit II – Comparison of Drug Properties & Associated Deals

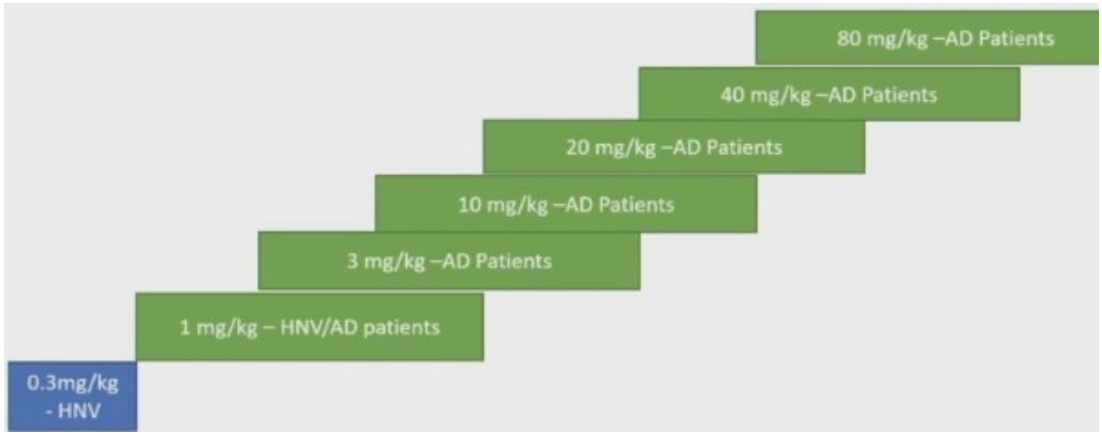
Target Properties	PMN Antibodies	Prothena/ Roche	BioArctic/ ABBVIE	Neurimmune/ Biogen
No binding to monomers	✓	X	+/-	X
No binding to physiological tetramers	✓	X	+/-	X
Binding to toxic oligomers/small soluble fibrils	✓	✓	✓	✓
Binding to native toxic α-syn in LBD/PD brain extract	✓	✓	✓	✓
Little or no binding to insoluble fibrils (Lewy bodies)	✓	X	X	X
		Deal 2013 $645MM + Profit Share	Deal 2016 $735MM + Royalties	

PMN310 Phase I Trial

Based on management commentary, we are expecting the first patient to be enrolled and results from a Phase I trial for PMN310 in AD patients to be available in 2020. Efforts are now focused on finalizing all of the IND-enabling work, including toxicity, final manufacturing and animal studies. We anticipate that a pre-IND meeting will be scheduled upon completion and an IND filed over the next several quarters. For the trial itself, there will be a strong emphasis on selecting useful biomarkers and several are being explored, especially ones that require a blood draw

as opposed to collection of cerebrospinal fluid. One biomarker in particular that has shown promise is Neurofilament Light Chain (NfL), which may be useful for measuring neuronal death. ProMIS will engage with both the FDA and Health Canada and should have seven to eight centers enrolling patients, evenly split between the countries when the Phase I becomes fully active. In addition to measuring safety, the study will use validated biomarkers to measure dose dependent treatment effect. Low doses from 0.3 mg/kg to 1.0 mg/kg will be administered to healthy normal volunteers (HNV) to identify any safety signals. As the trial progresses to higher doses, Alzheimer's patients will be treated at various dose levels ranging from 1, 3, 10, 20 and 40 mg/kg. We anticipate further detail and refinements following the FDA meeting.

Exhibit III – Dose Escalation Design



Additions to Management & Advisory Boards

ProMIS has added several distingushed individuals to its advisory boards and management team over the last year. We see the additions as providing a diverse set of experiences and competencies to the group that will advance the AD, PD and ALS programs. In March, Sharon Cohen, M.D. was added to the Scientific Adviosory Board (SAB). Dr. Cohen is the Medical Director and Principal Investigator of Toronto Memory Program, an internationally respected key opinion leader in the field of dementia and a consultant and advisor to numerous dementia programs. Dr. Rudolph Tanzi, who joined the SAB in December, is Professor of Neurology at Harvard University and Vice-Chair of Neurology, Director of the Genetics and Aging Research Unit, and Co-Director of the Henry and Allison McCance Center for Brain Health at Massachusetts General Hospital. Dr. Tanzi's training is in neuroscience and genetics and his scientific expertise centers on AD and brain health. Timothy Rothwell was added to the Business Advisory Board in February of this year. He has expierence as former U.S. CEO and Chairman for Sanofi-Aventis, CEO of Sandoz Pharmaceuticals and president of Rhone-Poulenc Rorer Pharmaceuticals.

New additions to the employee roster include Ernest Bush, Ph.D. who will be the Head of Pharmacology and Toxicology and Russell Blacher, as head of Manufacturing. Both individuals will be focused on the preclinical efforts required to prepare PMN310 for clinical trials. James Kupiec, MD was added as Chief Medical Officer in September 2018. He came from Pfizer where he was the clinical leader from Parkinson's Disease and Clinical Head of the Neuroscience Research Unit in Cambridge. Dr. Kupiec will lead the clinical development programs, which include the initiation of clinical trials of PMN310 for the treatment of AD.

Significant Event Timeline

ProMIS has a number of recent and upcoming milestones related to development of its pipeline which we chronologically summarize below.

- Private Placement for CAD$7.2 MM – 2Q:18
- Participation in AAIC – 2Q:18
- Appointment of James Kupiec, MD as CMO – 3Q:18
- Identification of α-synuclein targeting candidates for PD – 4Q:18
- Prepare for IND and Phase I trial for PMN310 - 2019
- Generate Phase I biomarker data - 2020

Summary

ProMIS has continued to move forward with its preclinical PMN310 work and is expected to advance its IND-enabling work and identify relevant biomarkers for its clnical trials. Parallel with these efforts is continued interaction with the scientific, investment and corporate community to present the potential of PMN310 and other pipeline candidates to garner KOL support, financing and partnerships. Management has been meeting with possible partners for the α-syneuclein and TDP43 programs which could provide a substantial upfront amount that can fund the internal development of AD candidates with non-dilutive capital.

We believe ProMIS represents an attractive opportunity to gain exposure to an immense disease area with no other approved disease modifying therapies. There are almost six million persons with AD in the US and over 30 million outside of the US that suffer from the disease. Additionally, there is a larger population with mild cognitive impairment (MCI) and pre-Alzheimer's which may benefit even more from toxic oligomer sequestering therapy. The path forward is relatively clear with other assets including aducanumab setting the precedent for trial design and potentially accelerated approaches using biomarkers suggested by regulatory agencies. We update our model to reflect 2018 actuals and maintain our valuation of CAD$7.00.

PROJECTED FINANCIALS

ProMIS Neurosciences Inc - Income Statement

ProMIS Neurosciences Inc.	2017 A	Q1 A	Q2 A	Q3 A	Q4 A	2018 A	2019 E	2020 E
Total Revenues (CAD$)	**$0.0**	**$0.0**	**$0.0**	**$0.0**	**$0.0**	**$0.0**	**$0.0**	**$0.0**
R&D	$4.0	$0.8	$1.5	$1.9	$3.2	$7.4	$14.4	$16.9
G&A	$2.1	$0.8	$0.7	$1.0	$0.3	$2.8	$2.8	$3.1
Operating Income	($6.0)	($1.6)	($2.2)	($2.9)	($3.5)	($10.2)	($17.2)	($20.0)
Operating Margin								
Amort of Financing & Interest	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Pre-Tax Income	($6.0)	$1.6	($2.2)	($2.9)	($3.5)	($10.2)	($17.2)	($20.0)
Taxes & Other	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Tax Rate								
Net Income	($6.0)	($1.6)	($2.2)	($2.9)	($3.5)	($10.2)	($17.2)	($20.0)
Reported EPS	**($0.03)**	**($0.01)**	**($0.01)**	**($0.01)**	**($0.01)**	**($0.04)**	**($0.06)**	**($0.06)**
YOY Growth								
Shares Outstanding	205.8	223.9	239.4	246.4	247.2	239.2	295.0	345.0

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

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HISTORICAL STOCK PRICE

ProMIS Neurosciences Inc – Historical Price Chart[2]



[2] Chart provided courtesy of www.barchart.com

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