

ProMIS Neurosciences Inc

(PMN – TSE)

Negotiations Underway for Three Targets

Based on our DCF model and a 15% discount rate, PMN is valued at approximately \$5.50 per share. We apply a 7% probability of eventual sales of portfolio products in global markets.

Current Price (11/18/19) **\$0.19**
 Valuation **\$5.50**

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 offers a platform that can generate mAbs specific to toxic forms of proteins found in neurodegenerative disease and determine their efficacy quickly and at low cost using biomarkers. ProMIS has identified trials in AD, PD and ALS that can provide proof of concept data and support further development in target indications. We anticipate continued focus on AD and increased partner involvement.

With recent FDA guidance regarding trial design, there is support for the use of fewer endpoints and employing biomarkers which may accelerate future development in AD. Previous 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 **\$0.44**
 52-Week Low **\$0.18**
 One-Year Return (%) **-20.8**
 Beta **-1.8**
 Average Daily Volume (sh) **247,338**

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

Shares Outstanding (mil) **272**
 Market Capitalization (\$mil) **\$51.7**
 Short Interest Ratio (days) **1.76**
 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 2019 Estimate **N/A**
 P/E using 2020 Estimate **N/A**

Zacks Rank **N/A**

ZACKS ESTIMATES

	Revenue					Year
	(in millions of \$CAD)					
	Q1	Q2	Q3	Q4		
	(Mar)	(Jun)	(Sep)	(Dec)	(Dec)	
2018	\$0.0 A	\$0.0 A	\$0.0 A	\$0.0 A	\$0.0 A	
2019	\$0.0 A	\$0.0 A	\$0.0 A	\$0.0 E	\$0.0 E	
2020					\$0.0 E	
2021					\$0.0 E	

	Earnings					Year
	(in millions of \$CAD)					
	Q1	Q2	Q3	Q4		
	(Mar)	(Jun)	(Sep)	(Dec)	(Dec)	
2018	-\$0.01 A	-\$0.01 A	-\$0.01 A	-\$0.01 A	-\$0.04 A	
2019	-\$0.01 A	-\$0.01 A	-\$0.01 A	-\$0.01 E	-\$0.04 E	
2020					-\$0.06 E	
2021					-\$0.05 E	

WHAT'S NEW

Third Quarter 2019 Operational and Financial Results

During 2019 the environment for β -amyloid (β A) focused Alzheimer's Disease (AD) drug development has been on a roller coaster. In March, Biogen (NASDAQ: BIIB) [announced](#) that its Phase III trials for aducanumab failed to reach their endpoints and the drug would be abandoned. This threw the AD space into chaos and investors pulled back investment from β A-focused work leaving apathy in its midst. Adapting to this environment, ProMIS Neurosciences Inc. (TSE: PMN) shifted its resources towards strengthening their portfolio with candidates aiming at other neurodegenerative targets. Drug candidates were developed for α -synuclein in multiple system atrophy (MSA), Tau in AD and TDP-43 in amyotrophic lateral sclerosis (ALS). This flexibility has allowed the company to remain relevant despite rapidly changing views on the target of choice.

Seven months after their discontinuation announcement, Biogen reversed itself and decided that it would pursue a Biologics License Application (BLA) for aducanumab based on further analysis of later data that became available. And now, ProMIS finds itself in a much stronger position with not only with a broad portfolio that can address a variety of neurodegenerative targets but also a dominant candidate for AD in PMN310.

During the third quarter and to date, ProMIS has added two new individuals to its Scientific Advisory Board, identified new antibodies for AD, MSA and ALS and pursued a private placement to provide capital as management discusses partnership opportunities with large pharmaceutical partners.

Financial results for 3Q:19 were provided in a [press release](#) and SEDAR [filings](#) released on November 13, 2019. The company continued to advance its platform expending \$1.6 million¹ in this effort. Research and development expenses were \$1.1 million, a 44% reduction from prior year levels due to lower contract research organization (CRO) costs, decreased patent expenditures and decreased employee travel partially offset by higher consulting and professional fees and share-based compensation. General and administrative expenses were \$0.6 million, also 44% lower year over year with the contraction attributable to decreased consultant salaries and associated costs, general corporate expenditures and share-based compensation.

As of September 30, cash stood at \$0.4 million, falling \$2.0 million compared to year end 2018. Cash burn for the first nine months of 2019 was (\$4.7) million and (\$0.9) million in the third quarter. On November 18, 2019, ProMIS announced that it had [completed](#) the first closing of its capital raise in the amount of CAD\$2.1 million.

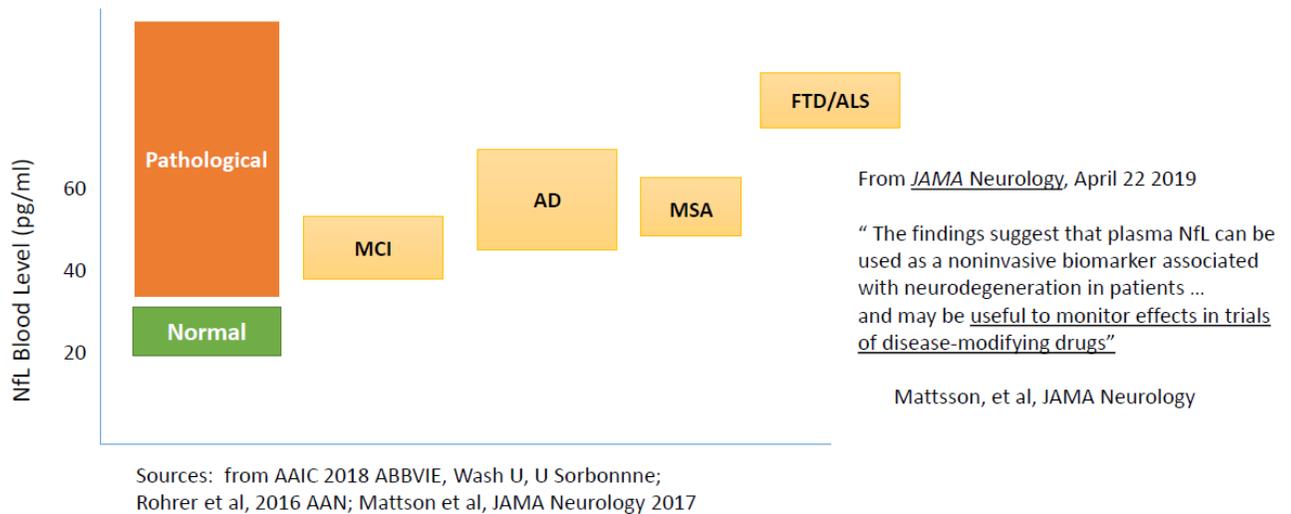
In the constantly changing and uncertain environment of neurodegenerative disease drug development, management has evolved its focus toward its drug discovery platform and highlighted three pillars in the company's value proposition: 1) The root cause of many neurodegenerative diseases is already known, and drugs developed to address the diseases need to focus on the desired target and ignore other proteins. 2) Neurodegenerative diseases are caused by misfolded toxic forms of a protein which can be uniquely identified by ProMIS' proprietary discovery platform. 3) Biomarkers can indicate whether a research program is on the right track early, before substantial capital is spent.

The company is sharing this refined mission with investors and prospective pharmaceutical partners, with whom they are carrying out discussions. While this pushes out our original forecasts for trial launches and ultimate sales, it does open up a wider variety of options that may move forward in the company's portfolio.

Successfully pursuing an indication using biomarkers can be validated with clinical proof of concept trials in enriched populations which can generate meaningful data in six to twelve months for \$5 to \$10 million. The leading biomarker that ProMIS has identified is neurofilament light chain (NfL), which we discussed in further detail [here](#). Not only has the marker proven itself in the lab, but it has also served as a valuable pharmacodynamic marker in multiple sclerosis and spinal muscular atrophy. We see tremendous value in this tool and anticipate it will support an endpoint in ProMIS' future clinical trials.

¹ Currency is denominated in Canadian Dollars

Exhibit I – Neurofilament Light Chain Levels in Neurodegenerative Disease²



MSA, Tau & ALS

In early October, ProMIS announced that it had [identified](#) several antibody therapeutics that target toxic forms of α -synuclein implicated in Multiple System Atrophy (MSA). The antibody candidates demonstrate a high binding coefficient to toxic alpha-synuclein aggregates present in patients diagnosed with MSA.

In a mid-October [release](#), ProMIS demonstrated that several previously identified antibodies that are able to neutralize toxic oligomer forms of Tau protein can block the spread of pathogenic tau aggregate formation in a cellular model. ProMIS employed its discovery platforms to identify unique epitopes of these toxic forms then develop antibodies that can selectively bind to the toxic forms of Tau.

In late October, a set of antibody [candidates](#) were created that target the neurotoxic form of TAR DNA-binding protein 43 (TDP-43). This protein is found in all cells and associated with several diseases such as amyotrophic lateral sclerosis (ALS) and frontotemporal dementia (FTD). The antibodies are uniquely matched to misfolded intracellular aggregates of TDP-43 with no binding to normal TDP-43. The binding profile was confirmed in post-mortem brain tissue from FTD patients.

Partnerships

ProMIS is currently in confidential discussions with potential partners for the antibodies associated with the α -synuclein, Tau and TDP-43 targets. Each of these assets has at least two different prospects. While we do not anticipate a deal being announced prior to year end, we do think that of these potential partnerships, there should be a favorable agreement announced in 1H:20. The deal would enable ProMIS to move the partnered molecule towards the clinic and also provide capital via upfront payments to advance PMN310 into a Phase I trial. An equity capital raise and significant investment from a strategic partner are other mechanisms through which it can raise funds to advance the portfolio.

ProMIS has made it clear that they are seeking a partner to help develop the pipeline. The company's unique platform to identify unique epitopes provides data that makes the therapeutic antibodies produced very valuable. Confidential discussions are currently underway with unidentified partners to develop these programs. The company entered into an agreement to raise CAD\$6.5 million just prior to the third quarter report which will support operations until partnerships can be consummated.

² Source: ProMIS Corporate Presentation August 2019.

Exhibit II – ProMIS Portfolio³

Protein/ Molecular Species Binding Target	Immunizations Epitope-conformation	mAbs selective for toxic species	Current status
Amyloid-beta	EP-300	✓	Lead selected
	EP-301	✓	Clinical candidate (PMN310)
BIND – Toxic Oligomers	EP-302	✓	Lacks biological activity
	EP-303	✓	Lead selected
AVOID – Monomer	EP-304	✓	Lacks biological activity
- Plaque	EP-305	✓	Lead selected
Tau	EP-501a	✓	
BIND – Toxic Oligomers	EP-501b	✓	Initial candidates
AVOID – Monomer, tangles	EP-501c	✓	
Alpha-synuclein	EP-401a	✓	2 candidates + additional under evaluation
BIND – Toxic Oligomers			
- Soluble Fibrils	EP-401c	✓	2 candidates + additional under evaluation
AVOID – Monomer			
- Physiologic Tetramer	EP-402a	✓	2 candidates + additional under evaluation
- Lewy Bodies			
	EP-402b	✓	1 candidate + additional under evaluation
TDP43	EP-201a	✓	1 candidate
	EP-201b	X	---
BIND – Toxic Oligomers	EP-201c	✓	3 candidates
	EP-202a	✓	2 candidates
AVOID – Monomer, Native	EP-202b	✓	1 candidate
Dimer	EP-203	✓	3 candidates
SOD1	EP-101	✓	Lead selected
BIND – Toxic Oligomers	EP-102	✓	Lead selected
AVOID – Native Dimer	EP-103	✓	Lead selected

Additions to the Team

ProMIS has added several distinguished individuals to its advisory boards and management team over the last year. We see the additions as providing a diverse set of relationships, experiences and competencies to the group that will advance the AD, PD and ALS programs.

Timothy Rothwell was added to the Business Advisory Board in February. He has experience as former U.S. CEO and Chairman for Sanofi-Aventis, CEO of Sandoz Pharmaceuticals and president of Rhone-Poulenc Rorer Pharmaceuticals. We see his experience and contacts in the industry as indispensable to making introductions to the decision-makers that comprise the opportunity set for partners in the ALS and PD program assets.

In June, C. Warren Olanow joined ProMIS' [scientific advisory board](#) (SAB) scientific advisory board with considerable experience in neurodegeneration and PD, an area where he has authored over 300 publications. Dr. Olanow will work with the other members of the board to help guide develop the PD, AD and ALS programs.

Dr. Andre Strydom [became](#) a member of the SAB in August. His area of expertise is in Down syndrome where his research has advanced understanding in AD. Specific work includes investigation of biomarkers of cognitive decline including those related to excess amyloid production, oxidative stress, and neurodegeneration. Down syndrome patients show significant levels of amyloid in the brain and are at risk of early onset AD, making this an important population for PMN310 and an area likely to benefit from Dr. Strydom's expertise.

Significant Event Timeline

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

- Confidential discussions with potential partners for platform programs - Ongoing
- CAD\$2.2 million capital raise – January 2019
- PMN310 scale up manufacturing – 2019
- CAD\$1.2 million capital raise – June 2019
- Prepare for IND and Phase I trial for PMN310 – 2019/2020
- Generate Phase I biomarker data – 2020
- CAD\$6.5 million private placement – November 2019

³ Source: ProMIS Corporate Presentation August 2019.

Summary

ProMIS has continued to advance its programs, highlighting three new antibody advancements in October alone. Parallel with these endeavors is continued interaction with the scientific, investment and corporate community to present the potential of the company's platform to garner KOL support, financing and partnerships. Management has refined its message highlighting the need to focus on the toxic forms of misfolded proteins that are the root cause of neurodegenerative disease and the importance of biomarkers that can rapidly and inexpensively demonstrate efficacy. We continue to be impressed with ProMIS' discovery platforms and their ability to identify unique features of toxic misfolded proteins. We anticipate that a pharmaceutical partner deal or large investment will allow the company to advance its candidates into the clinic.

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 it. 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 setting the precedent for trial design and potentially accelerated approaches using biomarkers suggested by regulatory agencies. There is also substantial opportunity for drug development in PD, MSA and ALS.

Due to the volatile and uncertain environment following announcements related to aducanumab, the investment community is waiting to put new money to work in β A programs. This is despite evidence that other programs were focused on the wrong target and substantial research that supports toxic oligomers as the correct target. We continued to believe in the potential for PMN310 and the other candidates in development and the tremendous opportunity in AD and other neurodegenerative diseases due to the lack of effective therapies and the magnitude of the need. We maintain our target price of \$5.50.

PROJECTED FINANCIALS

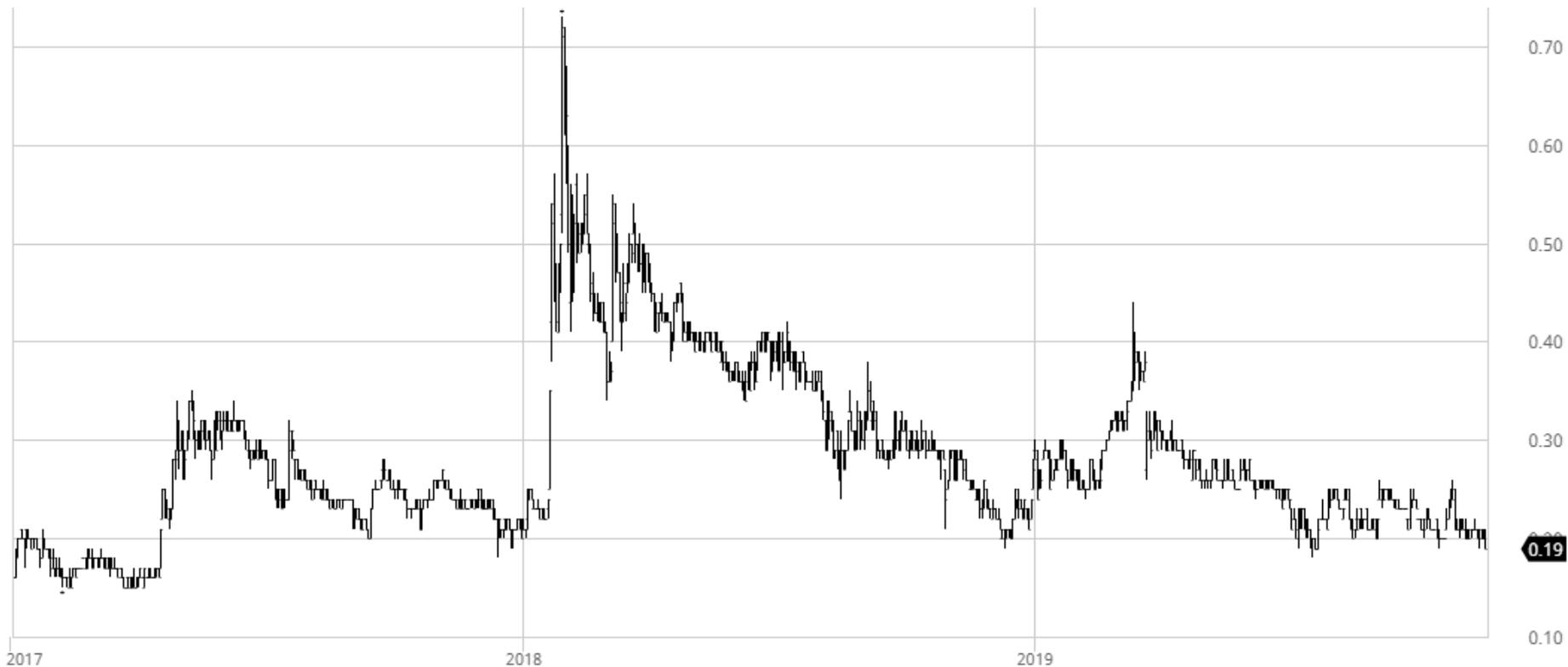
ProMIS Neurosciences Inc - Income Statement

ProMIS Neurosciences Inc.	2018 A	Q1 A	Q2 A	Q3 A	Q4 E	2019 E	2020 E	2021 E
Total Revenues (CAD\$)	\$0.0							
R&D	\$7.4	\$1.8	\$1.0	\$1.1	\$4.0	\$7.9	\$16.9	\$17.5
G&A	\$2.8	\$0.7	\$0.8	\$0.6	\$0.6	\$2.7	\$3.1	\$3.3
Operating Income	(\$10.2)	(\$2.4)	(\$1.9)	(\$1.6)	(\$4.6)	(\$10.5)	(\$20.0)	(\$20.8)
<i>Operating Margin</i>								
Amort of Financing & Interest	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0
Pre-Tax Income	(\$10.2)	(\$2.4)	(\$1.9)	(\$1.6)	(\$4.6)	(\$10.5)	(\$20.0)	(\$20.8)
Taxes & Other <i>Tax Rate</i>	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	\$0.0	
Net Income	(\$10.2)	(\$2.4)	(\$1.9)	(\$1.6)	(\$4.6)	(\$10.5)	(\$20.0)	(\$20.8)
Reported EPS	(\$0.04)	(\$0.01)	(\$0.01)	(\$0.01)	(\$0.01)	(\$0.04)	(\$0.06)	(\$0.05)
<i>YOY Growth</i>								
Shares Outstanding	239.2	254.1	256.9	261.4	318.0	272.6	345.0	400.0

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

HISTORICAL STOCK PRICE

ProMIS Neurosciences Inc – Historical Price Chart⁴



⁴ Chart provided courtesy of www.barchart.com

DISCLOSURES

The following disclosures relate to relationships between Zacks Small-Cap Research ("Zacks SCR"), a division of Zacks Investment Research ("ZIR"), and the issuers covered by the Zacks SCR Analysts in the Small-Cap Universe.

ANALYST DISCLOSURES

I, John Vandermosten, hereby certify that the view expressed in this research report accurately reflect my personal views about the subject securities and issuers. I also certify that no part of my compensation was, is, or will be, directly or indirectly, related to the recommendations or views expressed in this research report. I believe the information used for the creation of this report has been obtained from sources I considered to be reliable, but I can neither guarantee nor represent the completeness or accuracy of the information herewith. Such information and the opinions expressed are subject to change without notice.

INVESTMENT BANKING AND FEES FOR SERVICES

Zacks SCR does not provide investment banking services nor has it received compensation for investment banking services from the issuers of the securities covered in this report or article.

Zacks SCR has received compensation from the issuer directly, from an investment manager or from an investor relations consulting firm engaged by the issuer for providing non-investment banking services to this issuer and expects to receive additional compensation for such non-investment banking services provided to this issuer. The non-investment banking services provided to the issuer includes the preparation of this report, investor relations services, investment software, financial database analysis, organization of non-deal road shows, and attendance fees for conferences sponsored or co-sponsored by Zacks SCR. The fees for these services vary on a per-client basis and are subject to the number and types of services contracted. Fees typically range between ten thousand and fifty thousand dollars per annum. Details of fees paid by this issuer are available upon request.

POLICY DISCLOSURES

This report provides an objective valuation of the issuer today and expected valuations of the issuer at various future dates based on applying standard investment valuation methodologies to the revenue and EPS forecasts made by the SCR Analyst of the issuer's business.

SCR Analysts are restricted from holding or trading securities in the issuers that they cover. ZIR and Zacks SCR do not make a market in any security followed by SCR nor do they act as dealers in these securities. Each Zacks SCR Analyst has full discretion over the valuation of the issuer included in this report based on his or her own due diligence. SCR Analysts are paid based on the number of companies they cover. SCR Analyst compensation is not, was not, nor will be, directly or indirectly, related to the specific valuations or views expressed in any report or article.

ADDITIONAL INFORMATION

Additional information is available upon request. Zacks SCR reports and articles are based on data obtained from sources that it believes to be reliable, but are not guaranteed to be accurate nor do they purport to be complete. Because of individual financial or investment objectives and/or financial circumstances, this report or article should not be construed as advice designed to meet the particular investment needs of any investor. Investing involves risk. Any opinions expressed by Zacks SCR Analysts are subject to change without notice. Reports or articles or tweets are not to be construed as an offer or solicitation of an offer to buy or sell the securities herein mentioned.

CANADIAN DISCLAIMER

This research report is a product of Zacks SCR and prepared by a research analyst who is employed by or is a consultant to Zacks SCR. The research analyst preparing the research report is resident outside of Canada and is not an associated person of any Canadian registered adviser and/or dealer and, therefore, the analyst is not subject to supervision by a Canadian registered adviser and/or dealer, and is not required to satisfy the regulatory licensing requirements of any Canadian provincial securities regulators, the Investment Industry Regulatory Organization of Canada and is not required to otherwise comply with Canadian rules or regulations.