

## Anavex Life Sciences Corp. (NASDAQ/AVXL)

February 7, 2020

### BUY: Cash Through Catalysts

Anavex reported a net loss of \$6.6M in the period ending 12.31 (1Q20) and closed the quarter with \$27.5M in cash. Plenty of capital to fund operations through the next series of catalysts.

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### Investment Highlights

**Anavex's ANAVEX2-72 Represents a New Approach to CNS Disease.** The development of Alzheimer's has been linked to different mechanisms which may trigger negative cascades. Research advances are emerging around what happens when cells undergo stress. Why do some survive, and others degenerate? One answer may relate to individual cell survival mechanisms which in-part may be related to the role of the Sigma-1 Receptor, which is activated (an agonist) by ANAVEX2-73. It is believed that Sigma 1 can help to protect a cell from the accumulation of misfolded proteins, acting to chaperone them out of the cell. As a result, cell metabolism (oxidative stress and mitochondrial dysfunction) are kept in balance. The implications here can have an impact across a wide range of neurodegenerative diseases from Alzheimer's to Parkinson's and niche orphan diseases such as Rett's syndrome, which may represent a "fast path" to establish proof of concept, around Sigma 1 agonism.

### Lots of Clinical Catalysts.

**Alzheimer's Disease.** Anavex is now in a Phase 2b/3 trial that is now 50% enrolled. recruitment is expected to accelerate, given the anticipated international expansion of the study, which is set to increase the total number of sites from 15 to approximately 45 in 2020. The study could complete by YE2020 setting up commercialization by YE2022.

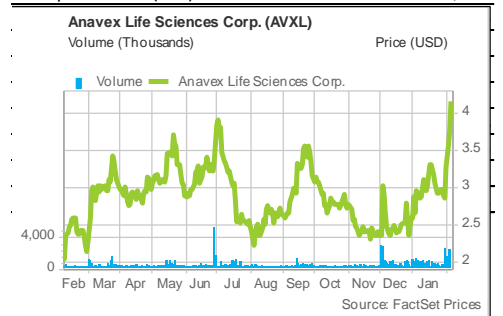
Anavex also announced that the company has met its enrollment target for the ANAVEX2-73 (blarcamesine) Phase 2 study in Parkinson's Disease Dementia (PDD). The study enrolled over 120 patients at 20 sites across Spain and three sites in Australia. The company expects to announce topline results from this study by mid-2020.

**Rett Syndrome. This program is now fast-tracked at the FDA.** As a Reminder, the Preliminary Data Looks Good. Anavex late last year announced preliminary clinical data from the ANAVEX2-73-RS-001 study on the first six-patient cohort. Patients are continuing participation in the ANAVEX2-73-RS-001 open-label extension study. Both efficacy endpoints, the Rett Syndrome Behavior Questionnaire (RSBQ) and the Clinical Global Impression - Improvement (CGI-I), showed significant improvement with respect to baseline after seven weeks of treatment.

Current Price **\$4.15**  
 Price Target **\$14.00**

Estimates	F2019E	F2020E	F2021E
<b>Expenses (\$000s)</b>	\$ 30,462	\$ 32,962	\$ 34,205
1Q March	\$ 7,474	\$ 8,192	\$ 8,502
2Q June	\$ 8,140	\$ 8,224	\$ 8,535
3Q September	\$ 7,147	\$ 8,256	\$ 8,568
4Q December	\$ 7,701	\$ 8,289	\$ 8,600
	F2019E	F2020E	F2021E
<b>EPS (diluted)</b>	\$ (0.59)	\$ (0.59)	\$ (0.30)
1Q March	\$ (0.16)	\$ (0.15)	\$ (0.08)
2Q June	\$ (0.17)	\$ (0.15)	\$ (0.07)
3Q September	\$ (0.14)	\$ (0.15)	\$ (0.07)
4Q December	\$ (0.12)	\$ (0.15)	\$ (0.07)

EBITDA/Share			
EV/EBITDA (x)			
<b>Stock Data</b>			
52-Week Range	\$1.99	-	\$4.40
Shares Outstanding (mil.)			56.1
Market Capitalization (mil.)			\$233
Enterprise Value (mil.)			\$213



**Valuation:** We model ANAVEX2-73 in the Alzheimer's, Rett Syndrome, and Parkinson's Disease Dementia markets. We use just a 25% probability of success in our therapeutic models and a 30% discount rate in our FCFF, discounted EPS, and sum-of-the-parts models to arrive at a \$16.00 price target.

**Risk to our thesis, include the following:** (1) commercial; (2) regulatory; (3) clinical; (4) manufacturing; (5) financial; (6) liability; and (7) intellectual property. We review these risks in the risk section of this report.

**Valuation.** Our valuation is based on our therapeutic models and associated assumptions projected to 2030. Our model assumes multiple financial raises, and as such, our share count is based on a fully diluted out year basis. Given the early nature of the company and its dependence on clinical trial outcomes in the CNS space, we apply just a 25% probability of success in our models. On top of this, we also add a 30% risk rate in our free cash flow to the firm (FCFF), our discounted EPS (dEPS) and sum-of-the-parts (SOP) models. We equal weight and average these metrics and then round to the nearest whole number to derive our price target.

### Exhibit 1. FCFF Model

Average	\$	16
Price Target	\$	18
Year		2020

DCF Valuation Using FCF (mln):													
Units ('000)	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E
EBIT	(17,381)	(29,545)	(32,990)	(27,593)	(33,585)	89,971	914,613	1,344,059	1,458,319	1,673,583	1,546,163	1,781,701	1,974,055
Tax Rate	0%	0%	0%	0%	5%	10%	18%	18%	30%	31%	31%	39%	39%
EBIT(1-t)	(17,381)	(29,545)	(32,990)	(27,593)	(31,905)	80,974	749,983	1,102,128	1,020,823	1,154,772	1,066,853	1,086,838	1,204,174
CapEx	-	-	-	-	-	-	-	-	-	-	-	-	-
Depreciation	-	-	-	-	-	-	-	-	-	-	-	-	-
Change in NWC (ex cash)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
FCF	(17,381)	(29,545)	(32,990)	(27,593)	(31,905)	80,974	749,983	1,102,128	1,020,823	1,154,772	1,066,853	1,086,838	1,204,174
PV of FCF	(29,373)	(38,409)	(32,990)	(21,226)	(18,879)	36,856	262,590	296,835	211,490	184,032	130,785	102,488	87,349
Discount Rate	30%												
Long Term Growth Rate	1%												
Terminal Cash Flow	4,193,846.00												
Terminal Value YE2030	304,214												
NPV	1,543,544												
NPV-Debt	-												
Projected Shares out (thousands)	83,610 2030E												
NPV Per Share	\$ 18.46												

Source: Dawson James

### Exhibit 21. Discounted EPS Model

Current Year	2020
Year of EPS	2030
Earnings Multiple	15
Discount Factor	30%
Selected Year EPS	\$ 14.40
NPV	\$ 15.67

Discount Rate and Earnings Multiple Varies, Year is Constant							
2030 EPS							
Earnings Multiple	15.67	5%	10%	15%	20%	25%	30%
1	\$8.84	\$5.55	\$3.56	\$2.33	\$1.55	\$1.04	\$1.04
5	\$44.20	\$27.76	\$17.80	\$11.63	\$7.73	\$5.22	\$5.22
10	\$88.39	\$55.51	\$35.59	\$23.25	\$15.46	\$10.44	\$10.44
15	\$132.59	\$83.27	\$53.39	\$34.88	\$23.19	\$15.67	\$15.67
20	\$176.78	\$111.02	\$71.18	\$46.51	\$30.92	\$20.89	\$20.89
25	\$220.98	\$138.78	\$88.98	\$58.13	\$38.65	\$26.11	\$26.11
30	\$265.18	\$166.53	\$106.77	\$69.76	\$46.38	\$31.33	\$31.33
35	\$309.37	\$194.29	\$124.57	\$81.39	\$54.11	\$36.55	\$36.55

Source: Dawson James

### Exhibit 3. Sum of the Parts Model

Anavex Sum of the Parts	LT Gr	Discount Rate	Yrs. to Mkt	% Success	Peak Sales MMs	Term Val
AVXL 2-73 U.S. AD	1%	30%	5	50%	\$2,697	\$9,298.91
NPV						\$3.74
AVXL 2-73 ROW AD	1%	30%	5	50%	\$3,214	\$11,081.54
NPV						\$4.46
AVXL 2-73 Rett's Syndrome	1%	30%	3	50%	\$1,905	\$6,568.76
NPV						\$4.47
AVXL 2-73 PDD	1%	30%	3	50%	\$961	\$3,315.39
NPV						\$2.26
Net Margin						25%
MM Shrs OS (2030E)						84
Total						\$14.9

Source: Dawson James

**Exhibit 4. Income Statement**

Anavex Life Sciences Corp																				
Anavex: YE Sept 30	1Q19A	2Q19A	3Q19A	4Q19A	2019A	1Q20E	2Q20E	3Q20E	4Q20E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E
<b>Revenue</b>																				
Anavex-73 AD U.S.						-	-	-	-	-	-	-	-	191,826	338,892	498,171	666,126	533,641	622,073	674,171
Anavex-73 AD ROW											-	-		555,169	735,599	617,903	642,619	551,582	675,136	803,412
Anavex-73 Rett's Syndrome											6,642	67,744	207,296	317,162	395,395	439,967	448,767	457,742	466,897	476,235
Anavex-73 Parkinson's Dementia PDD														14,229	58,055	88,824	120,801	184,826	219,943	240,366
<b>Total Product Revenues</b>											6,642	67,744	207,296	1,078,386	1,527,942	1,644,866	1,878,313	1,727,790	1,984,048	2,194,184
<b>% Chg</b>																				
<b>% Sequential Growth</b>																				
<b>Milestones</b>																				
<b>% Sequential Growth</b>																				
<b>Total Revenues (\$000)</b>											6,642	67,744	207,296	1,078,386	1,527,942	1,644,866	1,878,313	1,727,790	1,984,048	2,194,184
<b>Expenses</b>																				
Cost of Goods Sold (10%)						-	-	-	-	-	-	-	-	74,699	107,449	111,607	130,875	108,522	129,721	147,758
Accounting and Audit Fees																				
Amortization and depreciation	0	0	0	0	2	0	0	0	0	2	2	2	2	2	2	2	2	2	2	2
Bank charges and interest																				
Consulting Fees																				
Insurance																				
Investor relations																				
Legal fees																				
Management fees																				
Office and miscellaneous expense																				
Registration and filing fees																				
Rent and administration																				
Research and Development	5,712	6,079	5,758	6,349	23,898	6,380	6,412	6,444	6,477	25,714	26,232	21,302	17,298	14,047	11,407	9,263	7,522	6,109	4,961	4,028
Salaries and wages																				
Travel																				
Website design and maintenance																				
General and Administrative	1,761	2,061	1,388	1,352	6,588	1,812	1,812	1,812	1,812	7,247	7,972	80,000	100,000	75,000	65,000	65,650	66,307	66,970	67,639	68,316
<b>Operating expenses</b>	<b>7,474</b>	<b>8,140</b>	<b>7,147</b>	<b>7,701</b>	<b>30,462</b>	<b>8,192</b>	<b>8,224</b>	<b>8,256</b>	<b>8,289</b>	<b>32,962</b>	<b>34,205</b>	<b>101,303</b>	<b>117,300</b>	<b>163,748</b>	<b>183,858</b>	<b>186,522</b>	<b>204,705</b>	<b>181,602</b>	<b>202,322</b>	<b>220,104</b>
Oper. Inc. (Loss)	(7,474)	(8,140)	(7,147)	(7,701)	(30,462)	(8,192)	(8,224)	(8,256)	(8,289)	(32,962)	(27,563)	(33,560)	89,996	914,638	1,344,084	1,458,344	1,673,608	1,546,188	1,781,726	1,974,080
Oper Margin	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	0	1	1	1	1	1	1	1
Other income (expense)	75	75	75	75	75															
Research and Development incentive				943	943															
Interest and financing fees	79	51	35	47	(27)	(7)	(7)	(7)	(7)	(28)	(30)	(25)	(25)	(25)	(25)	(25)	(25)	(25)	(25)	(25)
Accretion of debt discount				37																
Change in fair value of derivative liability																				
Debt conversion expense																				
Loss on settlement of accounts payable																				
Loss on extinguishment of debt																				
Foreign exchange gain (loss)	(5)	54	(55)	53																
Financing related charges and adjustments																				
Other non-operating income																				
Non-operating income (expense)	149	180	92	1,118	917	(7)	(7)	(7)	(7)	(28)	(30)	(25)	(25)	(25)	(25)	(25)	(25)	(25)	(25)	(25)
Financial Income, Net																				
<b>Financial Expenses, Net</b>																				
<b>Pretax Income</b>	<b>(7,325)</b>	<b>(7,960)</b>	<b>(7,055)</b>	<b>(6,583)</b>	<b>(29,545)</b>	<b>(8,199)</b>	<b>(8,231)</b>	<b>(8,263)</b>	<b>(8,296)</b>	<b>(32,990)</b>	<b>(27,593)</b>	<b>(33,585)</b>	<b>89,971</b>	<b>914,613</b>	<b>1,344,059</b>	<b>1,458,319</b>	<b>1,673,583</b>	<b>1,546,163</b>	<b>1,781,701</b>	<b>1,974,055</b>
Pretax Margin	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Income Tax Benefit (Provision)	(9)	(48)	(19)	(9)							(10,210)	(1,679)	8,997	164,630	389,777	481,245	602,490	603,004	694,863	769,881
Tax Rate	0	0	0	0	-	0	0	0	0	-	5%	10%	18%	29%	30%	31%	31%	31%	31%	31%
<b>GAAP Net Income (loss)</b>	<b>(7,333)</b>	<b>(8,008)</b>	<b>(7,074)</b>	<b>(6,592)</b>	<b>(29,545)</b>	<b>(8,199)</b>	<b>(8,231)</b>	<b>(8,263)</b>	<b>(8,296)</b>	<b>(32,990)</b>	<b>(17,384)</b>	<b>(31,905)</b>	<b>80,974</b>	<b>749,983</b>	<b>954,282</b>	<b>977,074</b>	<b>1,071,093</b>	<b>943,160</b>	<b>1,086,838</b>	<b>1,204,174</b>
Net Margin	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	0.39	0.70	0.62	0.59	0.57	0.55	0.55	0.55
GAAP-EPS	(0.16)	(0.17)	(0.14)	(0.12)	(0.59)	(0.15)	(0.15)	(0.15)	(0.15)	(0.59)	(0.30)	(0.53)	1.28	11.39	13.93	13.70	14.43	12.21	13.52	14.40
Non GAAP EPS (dil)	(0.16)	(0.17)	(0.14)	(0.12)	(0.59)	(0.15)	(0.15)	(0.15)	(0.15)	(0.59)	(0.30)	(0.53)	1.28	11.39	13.93	13.70	14.43	12.21	13.52	14.40
Wtd Avg Shrs (Bas)	46,327	47,135	49,622	54,774	49,464	55,828	55,884	55,940	55,996	55,912	56,136	56,361	56,587	56,814	57,041	57,270	57,499	57,729	57,961	58,193
Wtd Avg Shrs (Dil)	46,327	47,135	49,622	54,774	49,464	55,321	55,875	56,433	56,988	56,157	58,437	60,810	63,279	65,848	68,522	71,304	74,199	77,212	80,347	83,610

Source: Dawson James

## Risk Analysis

**Clinical Trial Risk.** Anavex is dependent on the outcome of multiple clinical trials. The failure rates associated with disease conditions such as Alzheimer's is historically very high.

**Commercial Risk.** Anavex hopes to compete in the CNS markets which have traditionally been dominated by large pharma and biotechnology companies with deep pockets (funding and resources), which may make it difficult for Anavex to compete unless the molecule is deemed to be truly differentiated.

**Financial Risk.** Anavex is likely to require additional capital raises before the company can be self-sustaining. There can be no guarantees that the company will be able to raise the needed capital.

**Investment Risk.** Anavex is a small capital company, which can translate into high volatility and risk for investors. The company has no revenues and is dependent on the clinical progress of its therapeutics.

**Intellectual Property.** Anavex may face IP challenges, forcing the company to defend its patents or claiming the company is infringing on other patents. We do know that the lead product is protected by a composition of matter patent to 2033.

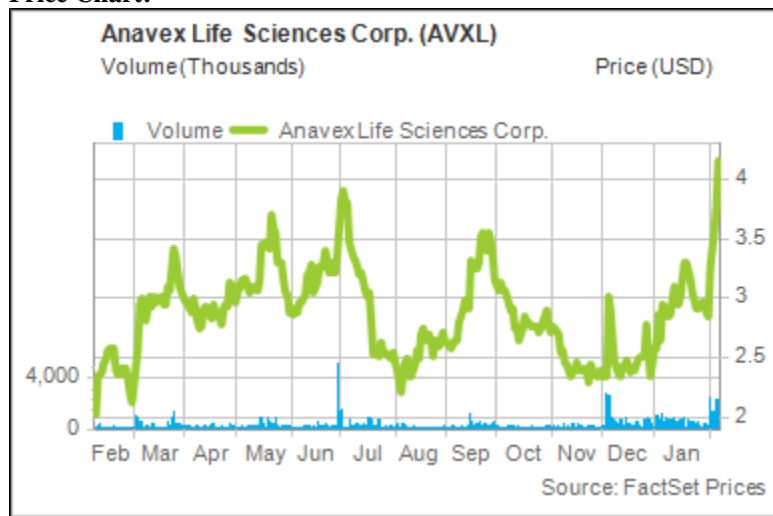
**Market Share Risk.** The central nervous system (CNS) market is competitive and tends to be dominated by large pharma and large well established biotechnology companies.

**Regulatory Risk.** Anavex, even with good clinical data, could face extensive delays and other regulatory setbacks.

Companies mentioned in this report

Important Disclosures:

**Price Chart:**



Price target and rating changes over the past three years:

- Initiated – Buy – July 24, 2019 – Price Target \$16.00
- Update – Buy – July 31, 2019 – Price Target \$16.00
- Update – Buy – August 7, 2019 – Price Target \$16.00
- Update – Buy – September 5, 2019 – Price Target \$16.00
- Update – Buy – September 17, 2019 – Price Target \$16.00
- Update – Buy – October 24, 2019 – Price Target \$16.00
- Update – Buy – December 2, 2019 – Price Target \$16.00
- Update – Buy – December 4, 2019 – Price Target \$16.00
- Update – Buy – February 4, 2020 – Price Target \$16.00
- Update – Buy – February 7, 2020 – Price Target \$16.00

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- 1) **Buy:** The analyst believes the price of the stock will appreciate and produce a total return of at least 20% over the next 12-18 months;
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- 3) **Sell:** The analyst believes the price of the stock will decline by at least 20% over the next 12-18 months and should be sold.

The following chart reflects the range of current research report ratings for all companies followed by the analysts of the Firm. The chart also reflects the research report ratings relating to those companies for which the Firm has performed investment banking services.

Ratings Distribution	Company Coverage		Investment Banking	
	# of Companies	% of Total	# of Companies	% of Totals
Market Outperform (Buy)	23	88%	3	13%
Market Perform (Neutral)	3	12%	1	33%
Market Underperform (Sell)	0	0%	0	0%
Total	26	100%	4	15%

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