

January 30, 2023

## SVA.TO: Thyroid Autotransplant With Cell Pouch Reestablishes Thyroid Hormone Production in Animals

Sernova is a cell therapy and regenerative medicine platform focused on delivering immune-protected therapeutic cells through an implantable device called the Cell Pouch. The Cell Pouch, when packed with cadaveric islet cells, has shown efficacy in humans by in reducing/eliminating insulin dependence among patients with type 1 diabetes. Today Sernova announced preclinical data demonstrating that auto-transplantation of thyroid tissue into the Cell Pouch can compensate for the removal of the thyroid gland (total thyroidectomy) and restore normal thyroid hormone levels in an animal model. Sernova's cell therapy programs are type 1 diabetes (clinical), hypothyroidism, and hemophilia A (preclinical). See more on Sernova and its programs in our [initiation report](#).

In this animal study, the Cell Pouch was pre-implanted for several weeks so blood vessels could grow in and around the Cell Pouch. A total thyroidectomy was performed on each subject. The thyroid gland of each test subject was removed, prepared with minimal manipulation, and transplanted in the pre-implanted Cell Pouch in subjects in the treatment group. Subjects in the control group did not receive any thyroid tissue.

Circulating thyroid hormone triiodothyronine (T3) and thyroxine (T4) in the test subjects were monitored over several months with weekly measurements. Following thyroidectomy in the treatment group, the T3 and T4 levels fell initially but then recovered to normal or near-normal levels following the transplant into the Cell Pouch. Subjects in the control group experienced a rapid decrease in their T3 and T4 levels, which remained below baseline concentrations throughout the study.

These data support the development of a hormone replacement/drug-free solution for hypothyroidism. Sernova will present data from its Thyroid development program as a scientific conference in 2023. The company has engaged with regulatory authorities towards initiating clinical development of a prospective therapy for hypothyroidism.

Our C\$5.00 price target is based on a risk-adjusted utility of Sernova's Cell Pouch in type 1 diabetes. Factors that could prevent achievement of our price target include financial, regulatory, manufacturing, competitive, reimbursement and product demand risks.

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### MARKET DATA

<b>Rating</b>	Buy
<b>Price Target</b>	C\$5.00
<b>Price</b>	C\$1.15
<b>Average Daily Volume</b>	30
<b>Market Cap (\$M)</b>	C\$328.3
<b>Enterprise Value (\$M)</b>	\$256.9
<b>Dividend Yield</b>	0.0%

### ESTIMATES

		2021A	2022E	2023E
EPS --	Q1	(0.01)	(0.03)	(0.02)
	Q2	(0.01)	(0.02)	(0.02)
	Q3	(0.01)	(0.02)	(0.02)
	Q4	(0.01)	(0.02)	(0.02)
	FY	(0.03)	(0.08)	(0.08)
P/E		(28.7)x	(10.8)x	(10.8)x

### One Year Performance Chart



Please see analyst certification and important disclosures on page 3 of this report.

EF Hutton  
**SVA.TO | Sernova Corp.**  
Statement of Operations (CAD million except EPS in CAD and shares outstanding)

	Oct '21	Jan '22	Apr '22	Jul '22	Oct '22	Oct '22	Jan '23	Apr '23	Jul '23	Oct '23	Oct '23	Oct '24	Oct '25	Oct '26	Oct '27	Oct '28	Oct '29
	FY2021A	Q122A	Q222E	Q322E	Q422E	FY2022E	Q123E	Q223E	Q323E	Q423E	FY2023E	FY2024E	FY2025E	FY2026E	FY2027E	FY2028E	FY2029E
<b>Revenue</b>																	
Type 1 diabetes, cadaveric cells, risk-adjusted	-					-					-	-	-	6.8	21.2	44.0	-
Type 1 diabetes, conformal coating, risk-adjusted														-	-	-	89.1
Other	-					-					-						
<b>Total revenue</b>	<b>-</b>	<b>6.8</b>	<b>21.2</b>	<b>44.0</b>	<b>89.1</b>												
<b>Operating and non-operating costs</b>																	
Cost of goods sold, risk-adjusted						-					-			0.9	2.9	5.9	11.8
<i>Gross margin</i>														86.3%	86.5%	86.6%	86.7%
Research and development	4.6	3.2	3.2	4.0	4.2	14.5	4.4	4.6	5.4	5.8	20.3	40.6	60.8	91.3	136.9	205.3	213.5
General and administrative	2.3	2.3	1.8	1.9	2.0	7.9	2.3	2.4	2.4	2.4	9.4	10.8	16.2	19.5	20.3	24.3	25.3
Sales and marketing													30.0	72.5	108.8	113.1	117.6
Royalty	-					-					-			-	-	-	12.5
<b>Total operating expenses</b>	<b>6.9</b>	<b>5.5</b>	<b>4.9</b>	<b>5.9</b>	<b>6.1</b>	<b>22.4</b>	<b>6.7</b>	<b>7.0</b>	<b>7.8</b>	<b>8.2</b>	<b>29.7</b>	<b>51.4</b>	<b>107.1</b>	<b>184.2</b>	<b>268.8</b>	<b>348.7</b>	<b>380.8</b>
<b>Operating income (loss)</b>	<b>(6.9)</b>	<b>(5.5)</b>	<b>(4.9)</b>	<b>(5.9)</b>	<b>(6.1)</b>	<b>(22.4)</b>	<b>(6.7)</b>	<b>(7.0)</b>	<b>(7.8)</b>	<b>(8.2)</b>	<b>(29.7)</b>	<b>(51.4)</b>	<b>(107.1)</b>	<b>(177.4)</b>	<b>(247.6)</b>	<b>(304.7)</b>	<b>(291.7)</b>
Interest income (expense)	0.0	0.0	0.0	0.1	0.2	0.3	0.2	0.2	0.4	0.4	1.2	1.3	2.3	3.2	3.7	3.8	3.8
Other income (expense)	(0.0)	(0.0)				(0.0)					-						
<b>Total non-operating income (loss)</b>	<b>(0.0)</b>	<b>(0.0)</b>	<b>0.0</b>	<b>0.1</b>	<b>0.2</b>	<b>0.3</b>	<b>0.2</b>	<b>0.2</b>	<b>0.4</b>	<b>0.4</b>	<b>1.2</b>	<b>1.3</b>	<b>2.3</b>	<b>3.2</b>	<b>3.7</b>	<b>3.8</b>	<b>3.8</b>
Pre-tax income (loss)	(7.0)	(5.5)	(4.9)	(5.8)	(5.9)	(22.1)	(6.5)	(6.8)	(7.4)	(7.8)	(28.5)	(50.1)	(104.8)	(174.2)	(243.9)	(300.8)	(287.9)
Tax payable (benefit)	-					-					-			-	-	-	-
<i>Tax rate (%)</i>		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Net income (loss)</b>	<b>(7.0)</b>	<b>(5.5)</b>	<b>(4.9)</b>	<b>(5.8)</b>	<b>(5.9)</b>	<b>(22.1)</b>	<b>(6.5)</b>	<b>(6.8)</b>	<b>(7.4)</b>	<b>(7.8)</b>	<b>(28.5)</b>	<b>(50.1)</b>	<b>(104.8)</b>	<b>(174.2)</b>	<b>(243.9)</b>	<b>(300.8)</b>	<b>(287.9)</b>
<b>Shares</b>																	
<b>EPS (basic)</b>	<b>(0.03)</b>	<b>(0.02)</b>	<b>(0.02)</b>	<b>(0.02)</b>	<b>(0.02)</b>	<b>(0.08)</b>	<b>(0.02)</b>	<b>(0.02)</b>	<b>(0.02)</b>	<b>(0.02)</b>	<b>(0.08)</b>	<b>(0.14)</b>	<b>(0.27)</b>	<b>(0.43)</b>	<b>(0.57)</b>	<b>(0.67)</b>	<b>(0.62)</b>
<b>EPS (diluted)</b>	<b>(0.03)</b>	<b>(0.02)</b>	<b>(0.02)</b>	<b>(0.02)</b>	<b>(0.02)</b>	<b>(0.08)</b>	<b>(0.02)</b>	<b>(0.02)</b>	<b>(0.02)</b>	<b>(0.02)</b>	<b>(0.08)</b>	<b>(0.14)</b>	<b>(0.27)</b>	<b>(0.43)</b>	<b>(0.57)</b>	<b>(0.67)</b>	<b>(0.62)</b>
S/O (basic)	245.5	261.5	262.5	270.3	300.4	273.7	322.0	339.5	341.2	342.9	336.4	365.3	388.1	409.7	429.5	447.3	462.4
S/O (basic)	245.5	261.5	262.5	270.3	300.4	273.7	322.0	339.5	341.2	342.9	336.4	365.3	388.1	409.7	429.5	447.3	462.4

Source: Company filings, EF Hutton Estimates

<b>Margins</b>																		
COGS																	13.4%	13.3%
R&D																	466.7%	239.8%
G&A																	55.3%	28.4%
S&M																	257.1%	132.1%
Royalty																	0.0%	14.0%
OPEX																	792.5%	427.6%
<b>Drivers</b>																		
Cost to treat per patient (million CAD)														0.05	0.05	0.05	0.05	
Number of patients treated														25	75	151	446	
Annual COGS growth (%)														2.0%	2.0%	2.0%	2.0%	
R&D growth (%)					120.0%		40.0%	45.0%	35.0%	40.0%		100.0%	50.0%	50.0%	50.0%	50.0%	4.0%	
G&A growth (%)					250.0%		0.0%	35.0%	25.0%	20.0%		15.0%	50.0%	20.0%	4.0%	20.0%	4.0%	
Sales force headcount														30	100	150		
Sales expenses growth (%)																	4.0%	4.0%
Marketing expenses growth (%)														50.0%	50.0%	4.0%	4.0%	
Royalty to Alice Tomei																		2.0%
Royalty/payments to Evotec																		12.0%
Cash in hand (CAD, million)		27.2	24.2	42.0	42.9		36.3	79.6	72.2	64.3		114.2	159.4	185.2	191.4	190.6	202.7	

## Important Disclosures

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I, Fozia Ahmed, Ph.D., certify that all of the views expressed in this research report accurately reflect my personal views about the subject security(ies) and subject company(ies). I also certify that no part of my compensation was, is, or will be, directly or indirectly, related to the specific recommendations or views expressed in this research report.

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**BUY (B)** - Total return expected to exceed S&P 500 by at least 10%

**HOLD (H)** - Total return expected to be in-line with S&P 500

**SELL (S)** - Total return expected to underperform S&P 500 by at least 10%

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Rating	Count	Percent	IB Serv./Past 12 Mos.	
			Count	Percent

Sernova Corp. Rating History as of 01/27/2023

