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CytoSorbents Corporation (NASDAQ/CTSO)

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BUY: How did CytoSorb Perform in 50 COVID Patients?

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A recent publication in the peer-reviewed journal, *Artificial Organs*, entitled "Continuous renal replacement therapy with the addition of CytoSorb cartridge in critically ill patients with COVID-19 plus acute kidney injury: a case-series," reports on the use of CytoSorb in all 50 critically ill COVID-19 patients that required renal replacement therapy for acute kidney injury at their institution during June and July of this year. See the full report for details.

Current Price \$8.39
Price Target \$16.00

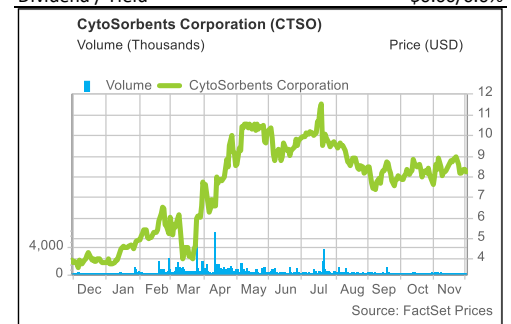
Investment Highlights

Background for the Study: CytoSorb was evaluated in critically ill COVID Patients – The average age in the critically ill patients in the study was 49.6 ± 8.9 years with a mean Acute Physiology and Chronic Health Evaluation II (APACHE 2) score of 22.5 ± 1.1 , conferring a mortality risk of greater than 40%.

- Patients were treated continuously with CytoSorb and continuous renal replacement therapy (CRRT), exchanging the CytoSorb cartridge every 24 hours, until the achievement of all of the following: normalization of oxygenation, reversal of shock without the need for vasopressors, and the absence of electrolyte and metabolic abnormalities. In addition to CytoSorb, all patients received standard of care therapy.
- **In this retrospective case series, 28-day survival post-ICU admission was 70%. Survivors averaged 2 ± 1 CytoSorb treatments to achieve statistically significant improvements in a wide range of inflammatory and clinical parameters, compared to before CytoSorb treatment ($p < 0.05$).**
- All survivors were successfully weaned from mechanical ventilation and vasopressors and discharged from the hospital or rehabilitation to home by 32 ± 12 days post-ICU admission.
- Non-survivors (30%) did not respond to CytoSorb therapy and had progressive disease. Non-responders had evidence of generally greater blood clot burden and more advanced thromboembolic disease upon ICU admission, with average D-dimers (degradation byproducts of blood clots) of $3,940 \pm 1,780$ ng/mL compared to $2,860 \pm 780$ ng/mL in survivors. In addition, patients with pulmonary emboli were more likely to die ($p < 0.05$), a common finding in approximately half of all deaths. Given that cytokine reduction does not dissolve blood clots, it could explain the lack of response to CytoSorb therapy in these patients.

Recall that the FDA granted Emergency Use Authorization (EUA) to CytoSorb for use in adult, critically ill COVID-19 patients with imminent or confirmed respiratory failure, enabling commercial sales to all hospitals in the U.S. for this application. Its estimated 2,800 patients have already been treated.

Estimates	F2019A	F2020E	F2021E
Expenses (\$000s)	\$ 43,924	\$ 49,531	\$ 56,863
1Q March	\$ 9,475	\$ 11,186	\$ 13,078
2Q June	\$ 9,862	\$ 13,093	\$ 13,647
3Q September	\$ 11,723	\$ 12,506	\$ 14,784
4Q December	\$ 12,864	\$ 12,746	\$ 15,353
	F2019A	F2020E	F2021E
EPS (diluted)	\$ (0.62)	\$ (0.25)	\$ 0.27
1Q March	\$ (0.15)	\$ (0.10)	\$ 0.06
2Q June	\$ (0.11)	\$ (0.08)	\$ 0.06
3Q September	\$ (0.21)	\$ (0.02)	\$ 0.07
4Q December	\$ (0.14)	\$ (0.05)	\$ 0.07
EBITDA/Share	(\$0.63)	(\$0.26)	\$0.30
EV/EBITDA (x)	0.0	0.0	0.0
Stock Data			
52-Week Range	\$3.49	-	\$11.74
Shares Outstanding (mil.)	43.2		
Market Capitalization (mil.)	\$362		
Enterprise Value (mil.)	\$342		
Debt to Capital	0%		
Book Value/Share	\$0.35		
Price/Book	36.7		
Average Three Months Trading Volume (K)	474		
Insider Ownership	11.3%		
Institutional Ownership	27.1%		
Short interest (mil.)	6.6%		
Dividend / Yield	\$0.00/0.0%		



Valuation. We use a series of therapeutic models across the various indications and geographies and project product revenues for the Company out to the year 2030. In our U.S. therapeutic models, we apply a 30% risk cut (70% success probability) that both U.S. approvals and our market share forecasts can be realized. For us, valuation becomes an interesting question when we discuss the appropriate "r" risk-rate to use in our three model metrics, free cash flow to the firm (FCFF), Discounted EPS, and Sum-Of-The-Parts (SOP) models, which are equal-weighted, averaged and rounded to the nearest whole number. Typically for early-stage companies with no revenues, we use 30%, and for companies with established products and revenues, we use a lower 15%. CytoSorbents arguably is somewhere in the middle, as products are approved and selling in Europe but not yet in the U.S. If we select a conservative 30%, we derive a \$9.00 price target. If we select a more aggressive 15%, we arrive at a \$26.00 target. If we select a mid-point (22.5%), we derive a \$16.00 target, which reflects the revised share count from the recent capital raise.

Risks. Market risks, Regulatory risks, Financial risks, and Commercialization risks.

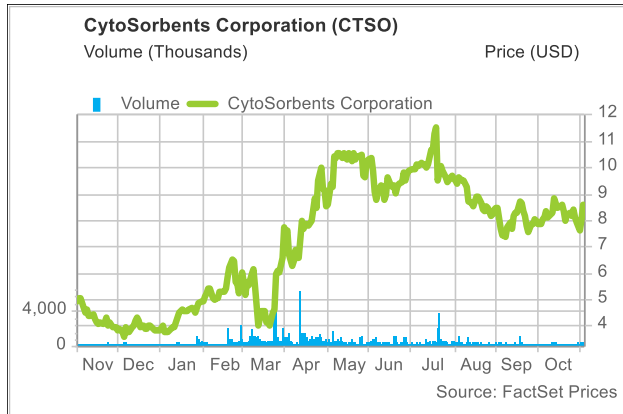
Exhibit 1. Income Statement

CTSO: Income Statement (\$000)																				
YE December 31	1Q19A	2Q19A	3Q19A	4Q19A	2019A	1Q20A	2Q20A	3Q20A	4Q20E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E
Revenue:																				
CytoSorb Direct Sales (Germany, Austria, Switzerland)	4,576	5,850	5,728	6,612	22,766	5,050	5,500	6,930	7,000	24,480	40,239	54,439	69,046	84,070	99,520	115,405	131,735	148,520	150,699	150,699
CytoSorb Distributor (Rest of EU)	-	-	-	-	-	2,350	2,800	2,497	2,593	10,240	13,336	21,587	27,297	41,422	55,871	70,651	85,766	86,763	87,771	87,771
CytoSorb (Cardiac surgery EU)	-	-	-	-	-	710	1,160	780	810	3,460	6,866	9,218	11,604	14,022	16,474	16,589	16,705	16,822	16,940	16,940
CytoSorb (Cardiac surgery US)	-	-	-	-	-	-	-	-	-	-	-	-	16,294	21,899	27,593	66,755	67,290	67,829	68,373	68,373
CytoSorb (sepsis US)	-	-	-	-	-	-	-	-	-	-	8,773	17,846	45,376	92,302	187,755	200,508	223,353	246,919	271,225	271,225
VetResQ	-	-	-	-	-	45	60	39	41	185	194	204	214	225	236	-	-	-	-	-
Other Sales	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Product Sales	4,576	5,850	5,728	6,612	22,766	8,155	9,520	10,246	10,444	38,365	69,409	103,293	169,831	253,939	387,449	469,908	524,849	566,853	595,008	595,008
Royalty (HemoDefend US)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Grant revenue	615	382	367	820	2,184	551	275	301	-	1,127	-	-	-	-	-	-	-	-	-	-
Other revenue	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Revenue	5,191	6,232	6,095	7,432	24,950	8,706	9,795	10,547	10,444	39,492	69,409	103,293	169,831	253,939	387,449	469,908	524,849	566,853	595,008	595,008
Expenses:																				
Costs of Goods Sold	1,738	1,834	1,696	2,096	7,364	2,385	3,250	2,890	2,946	11,471	13,882	20,659	33,966	50,788	77,490	93,982	104,970	113,371	119,002	119,002
	38%	29%	25%	25%	25%	29%	20%	28%	28%	28%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
Research and Development	2,418	2,930	3,185	3,559	12,092	1,965	2,406	1,753	2,000	8,125	8,937	9,831	10,814	11,895	13,085	14,394	15,833	17,416	19,158	21,074
	53%	50%	56%	54%	53%	24%	25%	17%	19%	21%	13%	10%	9%	5%	3%	3%	3%	3%	3%	4%
Selling, General and Administrative	4,758	4,506	6,108	6,634	22,006	6,317	6,591	7,282	7,200	27,390	31,499	34,649	35,342	36,048	36,769	37,505	38,255	39,020	39,800	40,596
	104%	77%	107%	100%	97%	77%	69%	71%	69%	71%	45%	34%	21%	14%	9%	8%	7%	7%	7%	7%
Legal, financial and other counseling	561	592	733	576	2,462	519	846	580	600	2,545	2,545	2,545	2,545	2,545	2,545	2,545	2,545	2,545	2,545	2,545
Total Expenses	9,475	9,862	11,723	12,864	43,924	11,186	13,093	12,506	12,746	49,531	56,863	67,683	82,667	101,277	129,889	148,425	161,603	172,352	180,505	183,216
Operating Income (Loss)	(4,284)	(3,630)	(5,628)	(5,432)	(18,974)	(2,480)	(3,298)	(1,960)	(2,302)	(10,040)	12,546	35,610	87,164	152,663	257,560	321,483	363,247	394,501	414,503	411,791
Interest income (expense), net	(205)	(214)	(302)	-	-	(306)	705	1,381	-	-	-	-	-	-	-	-	-	-	-	-
Gain (loss) on foreign currency transactions	(393)	297	(956)	(332)	(1,384)	(668)	(274)	(261)	-	-	-	-	-	-	-	-	-	-	-	-
Change in warrant liability	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other income (expense), net	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Other Income	(598)	83	(1,258)	(332)	(1,384)	(974)	431	1,120	-	-	-	-	-	-	-	-	-	-	-	-
Pretax Income	(4,882)	(3,547)	(6,886)	(5,764)	(20,358)	(3,454)	(2,867)	(840)	(2,302)	(10,040)	12,546	35,610	87,164	152,663	257,560	321,483	363,247	394,501	414,503	411,791
Income Tax Benefit (Provision)	-	-	-	1,092	1,092	-	-	-	(184)	(803)	1,255	4,273	13,075	27,479	54,088	77,156	101,709	130,185	136,786	135,891
Tax Rate	0%	5%	5%	5%	5%	8%	8%	8%	8%	8%	10%	12%	15%	18%	21%	24%	28%	33%	33%	33%
GAAP Net Income (Loss)	(4,882)	(3,547)	(6,886)	(4,672)	(19,266)	(3,454)	(2,867)	(840)	(2,118)	(9,237)	11,291	31,337	74,089	125,183	203,472	244,327	261,638	264,316	277,717	275,900
GAAP-EPS	(0.15)	(0.11)	(0.21)	(0.14)	(0.62)	(0.10)	(0.08)	(0.02)	(0.05)	(0.25)	0.27	0.75	1.76	2.96	4.80	5.74	6.12	6.16	6.44	6.38
GAAP-EPS (Dil)	(0.15)	(0.11)	(0.21)	(0.14)	(0.60)	(0.10)	(0.08)	(0.02)	(0.05)	(0.24)	0.27	0.75	1.76	2.96	4.80	5.74	6.12	6.16	6.44	6.38
Wgtd Avg Shrs (Bas) - '000s	31,931	32,267	32,366	32,450	32,253	33,981	36,483	41,593	41,635	38,423	41,739	41,906	42,074	42,243	42,412	42,582	42,752	42,924	43,096	43,268
Wgtd Avg Shrs (Dil) - '000s	31,931	32,267	32,366	32,450	32,253	33,981	36,483	41,593	41,635	38,423	41,739	41,906	42,074	42,243	42,412	42,582	42,752	42,924	43,096	43,268

Source: Dawson James estimates and company reports

Important Disclosures:

Price Chart:



Price target and rating changes over the past three years:

- Initiated – Buy – July 11, 2019 – Price Target \$15.00
- Update – Buy – August 12, 2019 – Price Target \$15.00
- Update – Buy – August 15, 2019 – Price Target \$15.00
- Update – Buy – August 19, 2019 – Price Target \$15.00
- Update – Buy – November 6, 2019 – Price Target \$15.00
- Update – Buy – February 19, 2020 – Price Target \$15.00
- Price Target Increase – Buy – March 9, 2020 – Price Target \$17.00
- Update – Buy – March 25, 2020 – Price Target \$17.00
- Update – Buy – April 13, 2020 – Price Target \$17.00
- Update – Buy – May 6, 2020 – Price Target \$17.00
- Update – Buy – June 9, 2020 – Price Target \$17.00
- Update – Buy – July 31, 2020 – Price Target \$15.00
- Update – Buy – August 12, 2020 – Price Target \$16.00
- Update – Buy – September 16, 2020 – Price Target \$16.00
- Update – Buy – October 14, 2020 – Price Target \$16.00
- Update – Buy – November 5, 2020 – Price Target \$16.00
- Update – Buy – December 2, 2020 – Price Target \$16.00

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- 2) **Neutral:** The analyst believes the price of the stock is fairly valued for the next 12-18 months;
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Ratings Distribution	Company Coverage		Investment Banking	
	# of Companies	% of Total	# of Companies	% of Totals
Market Outperform (Buy)	21	78%	4	19%
Market Perform (Neutral)	6	22%	1	17%
Market Underperform (Sell)	0	0%	0	0%
Total	27	100%	5	19%

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