

## Celsion Corporation (NASDAQ/CLSN)

February 6, 2020

### BUY: Celsion – Hitting on All Cylinders: ThermoDox & OVATION

Two Updates: 1. ThermoDox Listen to the experts: “Thermally-Sensitive Ablation Enhancers: Where Do We Stand?” a talk by Professor Riccardo Lencioni and 2. OVATION: Celsion announced that the independent Data Safety Monitoring Board (DSMB) has completed its initial safety review of data from the first fifteen patients treated with the first four neoadjuvant doses of GEN-1 at 100 mg/m<sup>2</sup> in the ongoing OVATION 2 Study.

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### Investment Highlights

**Prof. Riccardo Lencioni, M.D., FSIR, EBIR delivered a presentation titled “Thermally-Sensitive Ablation Enhancers: Where Do We Stand?” at the SPECTRUM 2020 Interventional Oncology Conference held in Miami, FLA last month.** Prof. Lencioni focused on the HEAT Study subgroup analysis showing the duration of RFA heating time per tumor volume of 45 minutes or longer plus ThermoDox® was key to overall survival benefit in this patient population. He noted that in early-stage HCC, nearly 50% of patients with a solitary lesion of less than 5 cm on imaging have microsatellites on histology. While RFA and other energy sources are not able to treat these microsatellites, a thermosensitive drug carrier such as ThermoDox® would deposit increased amounts of doxorubicin in the margins of a tumor given increased ablation time.

**Switching Gears to GEN-1 (Ovarian Cancer).** The DSMB has now completed its safety review of data from the first N=15 patients enrolled in the ongoing Phase 1/2 OVATION 2 Study. Based on the DSMB’s recommendation, the study will continue as planned, and the Company will proceed with completing enrollment in the Phase 1 portion of the trial. The OVATION 2 Study combines GEN-1, the Company’s IL-12 gene-mediated immunotherapy, with the standard of care for the treatment of newly diagnosed patients with Stage III and IV ovarian cancer who will undergo standard neoadjuvant chemotherapy (NACT) followed by interval debulking surgery (IDS).

**As a reminder, the independent Data Monitoring Committee (iDMC) unanimously recommends the OPTIMA Study (Liver Cancer) continue according to protocol.** The reported interim analysis reviewed 128 events (from 556 patients) or >60% of the total number required for the final analysis. The hazard ratio for success at 128 events is approximately 0.637, which represents a 57% improvement in immediate survival vs. control. We note that this is consistent with the 0.65 hazard ratio, or 55% improvement seen in the prospective HEAT Study subgroup (which OPTIMA is based upon), which demonstrated a two-year overall survival advantage and a median time to death of more than 7 ½ years.

<b>Current Price</b>	<b>\$1.44</b>
<b>Price Target</b>	<b>\$4.00</b>

Expenses (\$000s)	\$ 22,643	\$ 23,775	\$ 14,859
1Q January	\$ 4,986	\$ 5,706	\$ 3,566
2Q April	\$ 5,695	\$ 5,944	\$ 3,715
3Q July	\$ 5,513	\$ 5,944	\$ 3,715
4Q October	\$ 6,450	\$ 6,182	\$ 3,863

EPS (diluted)	\$ (0.96)	\$ (0.53)	\$ (0.22)
1Q January	\$ (0.12)	\$ (0.13)	\$ (0.05)
2Q April	\$ (0.29)	\$ (0.13)	\$ (0.05)
3Q July	\$ (0.25)	\$ (0.13)	\$ (0.05)
4Q October	\$ (0.30)	\$ (0.14)	\$ (0.06)

<b>EBITDA/Share</b>	
<b>EV/EBITDA (x)</b>	

<b>52-Week Range</b>	\$1.05	-	\$2.63
<b>Shares Outstanding (mil.)</b>	22.8		
<b>Market Capitalization (mil.)</b>	\$33		



**ThermoDox and GEN-1.** Celsion has recently completed enrollment of its Phase 3 OPTIMA study using ThermoDox to treat Primary Liver Cancer (hepatocellular carcinoma). The OPTIMA study is a global Phase 3 trial in HCC with first interim data (now reported). ThermoDox has also shown potential in treating non-muscle invasive bladder cancer and is currently in early development for that indication. Celsion is also currently enrolling the Phase 1/2 OVATION study with GEN-1 in treating Ovarian cancer. GEN-1 has also shown potential to treat Glioblastoma. The principal target indications are hepatocellular (HCC) and ovarian cancer, both of which represent large commercial opportunities for these nanoparticle-based platforms, as the need for effective treatments is great. HCC represents a global incidence of over 755,000 people, growing 3% annually. With a median survival time less than three years and a 5-year survival rate less than 10%, the need for more effective treatment is apparent, and Celsion hopes to deliver incremental improvements to the treatment paradigm.

**Market Opportunity for Hepatocellular Carcinoma and Ovarian Cancer.** Celsion is targeting its efforts towards HCC in the global market. As HCC continues to rise in incidence, it is expected to become the most common type of cancer, surpassing lung cancer by 2020. About half of all new cases arise in China, and almost three-quarters of all new cases occur in Asia. Current curative treatment options are almost exclusively limited to surgery, which is only possible in about 20% of patients. RFA remains the therapy of choice for non-surgical candidates and is the current standard of treatment for non-resectable liver cancers. Despite this, the recurrence rate for lesions over three centimeters is about 50%, leaving a highly underserved population. ThermoDox, in combination with RFA, addresses the limitations of the current standard of care by expanding the treatment zone and using a probe placed directly in the tumor, killing tumor cells within its immediate vicinity. The RFA then creates a thermal zone in the margin surrounding the tumor where RFA misses micro-metastases outside the ablation zone. Doxorubicin is then released in the thermal zone, expanding treatment and surrounding areas, killing the metastases outside the ablation zone.

**Ovarian Cancer.** Celsion's GEN-1 IL-12 is a powerful immune-modulating agent, capable of inducing anti-cancer immunity through multiple mechanisms. With an incidence of 225,000 women worldwide and over 22,280 women in the US, ovarian cancer ranks fifth among the highest cancer mortality rates among women. The five-year survival rate is below 50%, and only about 15% of diagnosed patients with localized cancer are eligible for potentially curative surgery. With an addressable market opportunity over 100,000 patients and a lack of treatment options in advanced ovarian cancer, Using Interleukin 12 (IL-12), Celsion has developed mechanisms that can induce anti-cancer immunity such as activation/proliferation, maturation/proliferation, anti-angiogenesis, and inhibition of immune suppression.

**Valuation:** Celsion's success as a company is dependent on the clinical outcomes for ThermoDox and GEN-1. For the purposes of our model we project timelines through the year 2030. Our therapeutic models are risk-adjusted. For the U.S. for ThermoDox we use just a 75% risk rate (25% probability of success), and in China we reduce this to 50%. For GEN-1 we assume just a 10% probability of success. Our models factor in assumed financings and use a fully diluted out-year (2030) share count. We triangulate FCFF, discounted EPS, and sum-of-the-parts models. We then averaged and equally weighted each model to derive the NPV and round to the nearest whole number to set our target price. Investors should recognize that this modeling exercise, which models out for ten years, while projected based on the current data and estimates, is limited in its ability to predict a 12-month target. The price of the stock will ultimately be driven near term by factors such as news flow, early trial data, and cyclic concerns of financings (dilution).

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

**Modeling Assumptions:**

- Price & Timing for ThermoDox.** We assume a price of \$40,000 for ThermoDox in Hepatocellular Carcinoma in both the United States and China with commercialization by 2023, which could prove conservative. We apply a 75% risk cut, or 25% probability of success in our U.S. model and 50% in our China model for conservatism. Clinical success suggests our valuation could be too low. We assume a modest market penetration that ramps up over five years as the patient population grows and these numbers also could prove to be too conservative.
- Incidence and Prevalence of HCC:** Hepatocellular Carcinoma has the fourth highest mortality rate of all cancers with a median survival from time of diagnosis at less than three years. The five-year survival rate is less than ten percent, and less than twenty percent of early and intermediate stage patients are eligible for curative surgery. HCC has a global incidence of about 755,000 growing at 3% annually. The U.S. incidence is about 35,000, and the EU incidence is about 65,000, while China remains the largest market with an incidence over 375,000.
- Price & Timing for Gen-1.** We also assume a price of \$40,000 for GEN-1 in Ovarian Cancer with commercialization by 2025. We apply a 90% risk cut or 10% probability of success in our model and assume a modest market penetration.
- Incidence and Prevalence of Ovarian Cancer:** Ovarian Cancer holds the fifth highest mortality rate of all cancers among women with a five-year survival rate for all stages of less than 50%. Over 70% of women are diagnosed in advanced stages (III/IV), and only 15% of those diagnosed with localized cancer are eligible for potentially curative surgery. The survival rate is significantly reduced in non-localized cancer, and the most common site of recurrence is the abdomen. Intraperitoneal-administered therapy is an important clinical strategy. Ovarian Cancer remains the 8<sup>th</sup> most diagnosed cancer among women with a global incidence rate of 225,000. The incidence rate in the US is about 22,280 and 100,000 in developed countries.
- Patient Eligibility:** For the Phase 3 OPTIMA Study Design, patient's eligibility includes having nonresectable HCC, singles lesions, lesion > 3cm but not > 7cm, treatment naïve, and child-pugh A. In ovarian cancer, over 75% of incidence is within stage III/IV, and we assume that only the platinum-resistant proportion of ovarian cancer patients will be eligible for treatment.

**Exhibit 1a. Therapeutic Models**

Hepatocellular Carcinoma, (US) (ThermoDox)	2017E	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E
Incidence	30,000	31,200	32,448	33,746	35,096	36,500	37,960	39,478	41,057	42,699	44,407	46,184	48,031	49,952
Increase in incidence	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Patients with single lesion receiving RF only (20%)	6,000	6,240	6,490	6,749	7,019	7,300	7,592	7,896	8,211	8,540	8,881	9,237	9,606	9,990
Patients with 3-7cm lesion meeting ThermoDox criteria (20%)	6,000	6,240	6,490	6,749	7,019	7,300	7,592	7,896	8,211	8,540	8,881	9,237	9,606	9,990
Total RF patients that could benefit from ThermoDox	12,000	12,480	12,979	13,498	14,038	14,600	15,184	15,791	16,423	17,080	17,763	18,473	19,212	19,981
% Market share	0%	0%	0%	0%	0%	0%	1%	2%	3%	4%	5%	5%	5%	5%
Total patients receiving ThermoDox	0	0	0	0	0	0	151,84	316	493	683	888	924	961	999
Cost of therapy	\$ 40,000	\$ 40,000	\$ 40,000	\$ 40,000	\$ 40,000	\$ 40,000	\$ 40,000	\$ 40,400	\$ 40,804	\$ 41,212	\$ 41,624	\$ 42,040	\$ 42,461	\$ 42,885
Change in cost of therapy							0%	1%	1%	1%	1%	1%	1%	1%
Sales	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 6,074	\$ 12,759	\$ 20,108	\$ 28,166	\$ 36,989	\$ 46,082	\$ 55,561	\$ 65,444
Risk Adjusted							75%	75%	75%	75%	75%	75%	75%	75%
Total Revenue (Millions)							1,518	3,190	5,028	7,039	9,242	11,708	14,197	16,711
Hepatocellular Carcinoma, (China) (ThermoDox)	2017E	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E
Incidence	378,000	389,340	401,020	413,051	425,442	438,206	451,352	464,892	478,839	493,204	508,000	523,240	538,938	555,108
Increase in incidence	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Patients with single lesion receiving RF only (20%)	75,600	77,868	80,204	82,610	85,088	87,641	90,270	92,978	95,768	98,641	101,600	104,648	107,788	111,021
Patients with 3-7cm lesion meeting ThermoDox criteria (20%)	75,600	77,868	80,204	82,610	85,088	87,641	90,270	92,978	95,768	98,641	101,600	104,648	107,788	111,021
Total RF patients that could benefit from treatment	200,000	202,000	204,020	206,060	208,121	210,202	212,304	214,427	216,571	218,737	220,924	223,134	225,365	227,619
% Market share	0%	0%	0%	0%	0.00%	0.00%	0.5%	0.5%	1%	1%	1.5%	2%	2.5%	3%
Total patients receiving treatment	-	-	-	-	-	-	1,082	1,072	2,166	2,187	3,314	4,463	5,634	6,829
Cost of therapy	\$ 40,000	\$ 40,000	\$ 40,000	\$ 40,000	\$ 40,000	\$ 40,000	\$ 40,000	\$ 40,400	\$ 40,804	\$ 41,212	\$ 41,624	\$ 42,040	\$ 42,461	\$ 42,885
Change in cost of therapy							0%	1%	1%	1%	1%	1%	1%	1%
Sales							42,461	44,181	88,370	90,146	137,937	187,813	239,229	292,848
Risk Adjusted							50%	50%	50%	50%	50%	50%	50%	50%
Total Revenue (Millions)							21,230	22,090	44,165	45,073	88,968	93,806	119,615	146,423
Ovarian Cancer (Gen-1)	2017E	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E
Incidence	225,000	227,250	229,523	231,818	234,136	236,477	238,842	241,230	243,643	246,079	248,540	251,025	253,536	256,071
Change in incidence	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Patients Population in US and developed countries	122,280	123,503	124,739	125,985	127,245	128,518	129,803	131,101	132,412	133,738	135,079	136,424	137,783	139,166
Platinum resistant population in Europe and US	30,570	30,876	31,184	31,496	31,811	32,129	32,451	32,775	33,103	33,434	33,768	34,106	34,447	34,792
% Market share	0%	0%	0%	0%	0%	0%	0%	0%	0%	4%	4%	8%	10%	11%
Total patients receiving treatment	-	-	-	-	-	-	-	-	662	1,337	2,701	3,411	3,789	4,175
Cost of therapy	\$ 40,000	\$ 40,000	\$ 40,000	\$ 40,000	\$ 40,000	\$ 40,000	\$ 40,000	\$ 40,000	\$ 40,000	\$ 40,400	\$ 40,804	\$ 41,212	\$ 41,624	\$ 42,040
Change in cost of therapy									0%	1%	1%	1%	1%	1%
Sales									26,462	54,029	110,231	140,558	157,721	175,516
Risk adjustment									90%	90%	90%	90%	90%	90%
Total Revenue (Millions)									2,648	5,403	11,023	14,056	15,772	17,552
Glioblastoma (Gen-1)	2017E	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E
Incidence	22,850	22,850	23,079	23,309	23,542	23,776	24,016	24,256	24,496	24,743	24,991	25,241	25,493	25,748
Change in incidence	0%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Patients eligible for treatment, insurance coverage, 75%	17,138	17,138	17,309	17,479	17,649	17,819	17,989	18,159	18,329	18,499	18,669	18,839	19,009	19,179
% Market share	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Total patients receiving treatment	-	-	-	-	-	-	-	-	367	742	1,125	1,136	1,147	1,159
Annual cost of treatment	\$ 40,000	\$ 40,000	\$ 40,000	\$ 40,000	\$ 40,000	\$ 40,000	\$ 40,000	\$ 40,000	\$ 40,000	\$ 40,400	\$ 40,804	\$ 41,212	\$ 41,624	\$ 42,040
Increase in price									0%	1%	1%	1%	1%	1%
Sales									14,699	29,969	45,887	46,810	47,751	48,710
Risk adjustment									100%	100%	100%	100%	100%	100%
Total Revenue (Millions)									14,699	29,969	45,887	46,810	47,751	48,710
Bladder (ThermoDox)	2017E	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E
Incidence	80,470	82,079	83,721	85,395	87,103	88,845	90,622	92,435	94,283	96,169	98,092	100,054	102,055	104,097
Change in incidence	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Patients Population in US	700,000	714,000	728,280	742,846	757,703	772,857	788,314	804,080	820,162	836,565	853,296	870,362	887,769	905,525
Patients eligible for treatment	70,000	71,400	72,828	74,285	75,770	77,286	78,831	80,408	82,016	83,656	85,330	87,038	88,777	90,552
% Market share	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Total patients receiving treatment	-	-	-	-	-	-	-	-	-	4,100.81	8,366	12,799	13,055	13,317
Cost of therapy	\$ 20,000	\$ 20,000	\$ 20,000	\$ 20,000	\$ 20,000	\$ 20,000	\$ 20,000	\$ 20,000	\$ 20,000	\$ 30,000	\$ 30,300	\$ 30,603	\$ 30,909	\$ 31,216
Increase in price									0%	1%	1%	1%	1%	1%
Sales									123,024	253,479	391,701	403,531	415,717	428,272
Risk adjustment									100%	100%	100%	100%	100%	100%
Total Revenue (Millions)									123,024	253,479	391,701	403,531	415,717	428,272

Source: Dawson James

## VALUATION

Our valuation is derived by our revenue projections for ThermoDox and GEN-1 in their respective indications of Hepatocellular carcinoma and ovarian cancer. We do not model any potential revenues from these programs until at least 2023 and project our model through the year 2030. Our therapeutic models are risk-adjusted. For the U.S. for ThermoDox we use just a 75% risk rate (25% probability of success), and in China we reduce this to 50%. For GEN-1 we assume just a 10% probability of success. Our models factor in assumed financings and use a fully diluted out-year (2030) share count. We triangulate FCF, discounted EPS, and sum-of-the-parts models. We then averaged and equally weighted each model to derive the NPV and round to the nearest whole number to set our target price. Investors should recognize that this modeling exercise, which models out for ten years, while projected based on the current data and estimates, is limited in its ability to predict a 12-month target. The price of the stock will ultimately be driven near term by factors such as news flow, early trial data, and cyclic concerns of financings (dilution).

### Exhibit 1. Free Cash Flow Model

Average	\$	3.61
Price Target	\$	3.13
Year		2020

#### DCF Valuation Using FCF (mln):

units ('000)	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E
EBIT	(20,899)	(24,595)	(15,678)	(16,421)	2,135	3,721	26,237	30,830	59,579	87,613	115,532	142,081
TaxRate	0%	0%	0%	0%	0%	5%	10%	15%	20%	25%	26%	27%
EBIT(1-)	(20,899)	(24,595)	(15,678)	(16,421)	2,135	3,535	23,613	26,205	47,663	65,710	85,494	103,719
CapEx	-	-	-	-	-	-	-	-	-	-	-	-
Depreciation	-	-	-	-	-	-	-	-	-	-	-	-
Change in NWC	-	-	-	-	-	-	-	-	-	-	-	-
FCF	(20,899)	(24,595)	(15,678)	(16,421)	2,135	3,535	23,613	26,205	47,663	65,710	85,494	103,719
PV of FCF	(24,034)	(24,595)	(13,633)	(12,417)	1,404	2,021	11,740	11,329	17,918	21,481	24,303	25,638
Discount Rate	15%											
Long Term Growth Rate	1%											
Terminal Cash Flow	748,261											
Terminal Value YE2030	184,959											
NPV	226,114											
NPV-Debt	72,232											
Shares out (thousands)	72,232	2030E										
NPV Per Share	\$	3.13										

Source: Dawson James

### Exhibit 2. Discounted EPS Model

Current Year	2020
Year of EPS	2030
Earnings Multiple	10
Discount Factor	15%
Selected Year EPS	\$ 1.44
NPV	\$ 3.55

Source: Dawson James Estimates

		Discount Rate and Earnings Multiple Varies, Year is Constant					
		2030 EPS					
Earnings Multiple		5%	10%	15%	20%	25%	30%
		1		\$0.88	\$0.55	\$0.36	\$0.23
5		\$4.41	\$2.77	\$1.78	\$1.16	\$0.77	\$ 0.52
10		\$8.83	\$5.54	\$3.55	\$2.32	\$1.54	\$ 1.04
15		\$13.24	\$8.32	\$5.33	\$3.48	\$2.32	\$ 1.56
20		\$17.65	\$11.09	\$7.11	\$4.64	\$3.09	\$ 2.09
25		\$22.07	\$13.86	\$8.89	\$5.81	\$3.86	\$ 2.61
30		\$26.48	\$16.63	\$10.66	\$6.97	\$4.63	\$ 3.13
35		\$30.90	\$19.40	\$12.44	\$8.13	\$5.40	\$ 3.65

Source: Dawson James

### Exhibit 3. Sum of the Parts Model

	LT Gr	Discount Rate	Yrs. to Mkt	% Success	Peak Sales MM's	Term Val
ThermoDox/HCC (US)	1%	15%	4	65%	\$11	\$76.51
NPV						\$0.26
Thermodox/HCC (China)	1%	15%	4	65%	\$146	\$1,046
NPV						\$3.55
Gen1/Ovarian Cancer (US)	1%	15%	6	65%	\$18	\$125
NPV						\$0.32
Net Margin						65%
MM Shrs OS (2030E)						71
Total						\$4.13

Source: Dawson James

## Risk Analysis

**Investment Risk:** The company faces multiple investment risks from product management, market share adoption, and commercialization to regulatory and competitive environment associated risks.

**Clinical and regulatory risk:** Celsion is currently in the process of completing its FDA clinical trials. There is no assurance that their product will be approved by the FDA and that even if approved if it will be reimbursed by insurance or successfully commercialized.

**Commercial risk:** The focus of the company is on successfully developing their products and eventually bring them to the mass market. We can make no assurances that the company will be able to achieve a critical level of market share to become profitable in this indication and or in additional planned indications.

**Employee risk:** Celsion's core management team is experienced and has clear expectations for the future of the company. Atossa plans to bring their proposed products to market as efficiently as possible, and their success will depend heavily upon the experience, abilities, and continued services of its senior officers, sales staff, and key scientific personnel.

**Financial risk:** Celsion may need to raise additional capital in the marketplace to continue to fund operations through more trials and eventually an NDA and possible commercial launch. There can be no assurances that the company will be able to successfully raise capital and do so on favorable terms.

**Intellectual property risk:** Celsion may have to defend its patents and technical know-how, and there can be no assurances that the patents will not be infringed or will be held as valid if challenged, and the company may infringe on third party's patents.

**Reimbursement and insurance payment risk:** Insurance payment for products may be an additional hurdle for adoption.

**Exhibit 4. Income Statement**

Celsion Corporation: Income Statement (\$000)																										
YE December 31	1Q18A	2Q18A	3Q18A	4Q18A	2018A	1Q19A	2Q19A	3Q19E	4Q19E	2019E	1Q20E	2Q20E	3Q20E	4Q20E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	
<b>Product sales</b>																										
Hepatocellular Carcinoma; (US) (ThermoDox)				0	-	-	-	-	-	-	-	-	-	-	-	-	-	1,518	3,190	5,026	7,039	9,242	9,708	10,197	10,711	
Hepatocellular Carcinoma; (China) (ThermoDox)					-	-	-	-	-	-	-	-	-	-	-	-	-	21,230	22,090	44,185	45,073	68,968	93,806	119,615	146,423	
Ovarian Cancer (Gen-1)					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2,648	5,403	11,023	14,056	15,772	17,552	
Glioblastoma (pre-clinical)					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Non-Muscle Invasive bladder cancer (Pre-clinical)					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Licensing Revenue	125	125	125	125	500	125	125	-	-	250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>Total Product Sales</b>	<b>125</b>	<b>125</b>	<b>125</b>	<b>125</b>	<b>500</b>	<b>125</b>	<b>125</b>	<b>-</b>	<b>-</b>	<b>250</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>22,749</b>	<b>25,280</b>	<b>51,859</b>	<b>57,515</b>	<b>89,234</b>	<b>117,570</b>	<b>145,584</b>	<b>174,686</b>
<b>Operating Expenses</b>																										
Cost of Goods Sold																			3,412	3,539	6,742	6,902	8,923	8,230	7,279	8,734
																			15%	14%	13%	12%	10%	7%	5%	5%
Research and Development	2,741	4,594	2,187	2,344	11,866	2,788	3,558	3,115	3,018	12,459	3,140	3,270	3,270	3,401	13,082	13,736	14,423	15,144	15,901	16,696	17,531	18,407	19,328	20,294	21,309	
General and Administrative	1,665	3,543	1,960	2,532	9,700	2,218	2,137	2,137	3,693	10,184	2,566	2,673	2,673	2,780	10,694	1,123	1,179	1,238	1,300	1,365	1,433	1,505	1,580	1,659	1,742	
																			5%							
Acquisition Costs																										
<b>Total expenses</b>	<b>4,406</b>	<b>8,136</b>	<b>4,147</b>	<b>4,875</b>	<b>21,565</b>	<b>4,986</b>	<b>5,695</b>	<b>5,251</b>	<b>6,712</b>	<b>22,643</b>	<b>5,706</b>	<b>5,944</b>	<b>5,944</b>	<b>6,182</b>	<b>23,775</b>	<b>14,859</b>	<b>15,602</b>	<b>19,794</b>	<b>20,740</b>	<b>24,802</b>	<b>25,866</b>	<b>28,835</b>	<b>29,138</b>	<b>29,232</b>	<b>31,785</b>	
<b>Operating Income (Loss)</b>	<b>(4,281)</b>	<b>(8,011)</b>	<b>(4,022)</b>	<b>(4,750)</b>	<b>(21,065)</b>	<b>(4,861)</b>	<b>(5,570)</b>	<b>(5,251)</b>	<b>(6,712)</b>	<b>(22,393)</b>	<b>(5,706)</b>	<b>(5,944)</b>	<b>(5,944)</b>	<b>(6,182)</b>	<b>(23,775)</b>	<b>(14,859)</b>	<b>(15,602)</b>	<b>2,955</b>	<b>4,540</b>	<b>27,057</b>	<b>31,649</b>	<b>60,398</b>	<b>88,432</b>	<b>116,352</b>	<b>142,901</b>	
Investment income, net	74	73	107	100	354	114	145	145	145	548	145	145	145	145	578	578	578	578	578	578	578	578	578	578	578	
Interest expense	-	(15)	(346)	(351)	(712)	(351)	(349)	(349)	(349)	(1,399)	(349)	(349)	(349)	(349)	(1,398)	(1,398)	(1,398)	(1,398)	(1,398)	(1,398)	(1,398)	(1,398)	(1,398)	(1,398)	(1,398)	
Gain (loss) from change in valuation of common stock warrant liability																										
Loss from impairment of in-process research and development				(4,510)	(4,510)																					
Other income (expense)	1	(1)	0	(0)	0	0	(3)	-	-	(3)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Loss from valuation of earn-out milestone liability	(270)	(277)	4,115	63	3,631	3,130	(127)	(127)	(127)	2,749	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Fair value of warrants issued in connection with amendment						(400)	-	-	-	(400)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>Total other income</b>	<b>(196)</b>	<b>(219)</b>	<b>(634)</b>	<b>(188)</b>	<b>(1,237)</b>	<b>2,493</b>	<b>(335)</b>	<b>(332)</b>	<b>(332)</b>	<b>1,495</b>	<b>(205)</b>	<b>(205)</b>	<b>(205)</b>	<b>(205)</b>	<b>(819)</b>	<b>(819)</b>	<b>(819)</b>	<b>(819)</b>	<b>(819)</b>	<b>(819)</b>	<b>(819)</b>	<b>(819)</b>	<b>(819)</b>	<b>(819)</b>	<b>(819)</b>	
<b>Pretax Income</b>	<b>(4,477)</b>	<b>(8,231)</b>	<b>(4,656)</b>	<b>(4,939)</b>	<b>(22,302)</b>	<b>(2,367)</b>	<b>(5,905)</b>	<b>(5,583)</b>	<b>(7,044)</b>	<b>(20,899)</b>	<b>(5,911)</b>	<b>(6,149)</b>	<b>(6,149)</b>	<b>(6,386)</b>	<b>(24,595)</b>	<b>(15,678)</b>	<b>(16,421)</b>	<b>2,135</b>	<b>3,721</b>	<b>26,237</b>	<b>30,830</b>	<b>59,579</b>	<b>87,613</b>	<b>115,532</b>	<b>142,081</b>	
Income Tax Benefit (Provision)					10,419														186	2,624	4,624	11,916	21,903	30,038	38,362	
<b>Tax Rate</b>																			0%	5%	10%	15%	20%	25%	26%	27%
<b>GAAP Net Income (loss)</b>	<b>(4,477)</b>	<b>(8,231)</b>	<b>(4,656)</b>	<b>(4,939)</b>	<b>(11,883)</b>	<b>(2,367)</b>	<b>(5,905)</b>	<b>(5,583)</b>	<b>(7,044)</b>	<b>(20,899)</b>	<b>(5,911)</b>	<b>(6,149)</b>	<b>(6,149)</b>	<b>(6,386)</b>	<b>(24,595)</b>	<b>(15,678)</b>	<b>(16,421)</b>	<b>2,135</b>	<b>3,535</b>	<b>23,613</b>	<b>26,205</b>	<b>47,663</b>	<b>65,710</b>	<b>85,494</b>	<b>103,719</b>	
Deemed dividend related to warrant modification																										
<b>Net Income attributable to common shareholders(loss)</b>					<b>(11,883)</b>																					
<i>Basic and Diluted</i>	<b>0.25</b>	<b>(0.46)</b>	<b>(0.26)</b>	<b>(0.21)</b>	<b>(0.68)</b>	<b>(0.12)</b>	<b>(0.29)</b>	<b>(0.27)</b>	<b>(0.34)</b>	<b>(1.01)</b>	<b>(0.13)</b>	<b>(0.14)</b>	<b>(0.14)</b>	<b>(0.14)</b>	<b>(0.54)</b>	<b>(0.22)</b>	<b>(0.23)</b>	<b>0.1</b>	<b>0.0</b>	<b>0.3</b>	<b>0.4</b>	<b>0.7</b>	<b>0.9</b>	<b>1.2</b>	<b>1.4</b>	
<b>GAAP-EPS</b>	<b>(0.25)</b>	<b>(0.46)</b>	<b>(0.26)</b>	<b>(0.28)</b>	<b>(0.68)</b>	<b>(0.12)</b>	<b>(0.29)</b>	<b>(0.27)</b>	<b>(0.34)</b>	<b>(1.01)</b>	<b>(0.13)</b>	<b>(0.14)</b>	<b>(0.14)</b>	<b>(0.14)</b>	<b>(0.54)</b>	<b>(0.22)</b>	<b>(0.23)</b>	<b>0.1</b>	<b>0.0</b>	<b>0.3</b>	<b>0.4</b>	<b>0.7</b>	<b>0.9</b>	<b>1.2</b>	<b>1.4</b>	
GAAP EPS (dil)						(0.12)	(0.29)	(0.27)	(0.34)	(1.01)	(0.13)	(0.14)	(0.14)	(0.14)	(0.54)	(0.22)	(0.23)	0.1	0.0	0.3	0.4	0.7	0.9	1.2	1.4	
Wght Avg Shrs (Bas) - '000s	17,684	17,743	17,801	17,801	17,583	19,105	20,606	20,812	21,020	20,386	45,406	45,451	45,497	45,542	45,474	70,625	70,802	70,979	71,157	71,335	71,514	71,693	71,872	72,052	72,232	
Wght Avg Shrs (Dil) - '000s					17,583	19,105	20,606	20,812	21,020	20,386	45,406	45,451	45,497	45,542	45,474	70,625	70,802	70,979	71,157	71,335	71,514	71,693	71,872	72,052	72,232	

Source: Dawson James estimates

Companies mentioned in this report

*Celsion Corporation*

**Important Disclosures:**

**Price Chart:**



Price target and rating changes over the past three years:

- Initiated – Buy – August 5, 2019 – Price Target \$4.00
- Update – Buy – August 14, 2019 – Price Target \$4.00
- Update – Buy – August 19, 2019 – Price Target \$4.00
- Update – Buy – November 5, 2019 – Price Target \$4.00
- Update – Buy – February 6, 2019 – Price Target \$4.00

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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;
- 2) **Neutral:** The analyst believes the price of the stock is fairly valued for the next 12-18 months;
- 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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