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CollPlant Biotechnologies (NASDAQ/CLGN)

January 27, 2020

BUY: Raising Price Target \$9.00 to \$15.00

CollPlant's stock is up since we launched coverage (11.4.2019 at \$4.62). We spoke with management and profile some of the recent developments that may explain the increase. The stock in short period of time has exceeded our expectations, more than doubling in the past 10 weeks since we launched coverage. We have adjusted our model for the increase in valuation which translates into less dilution in terms of our assumptions around future capital raises. The result if our valuation target also rises, from \$9.00 to \$15.00.

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Investment Highlights

Raising Price Target to \$15.00 from \$9.00. The main change we have made to our model is around our capital raise assumptions, at what price and how many shares. The result is an increase in our valuation. We are also focusing only on our FCFF model which we believe offers us the best insight into our NPV projection.

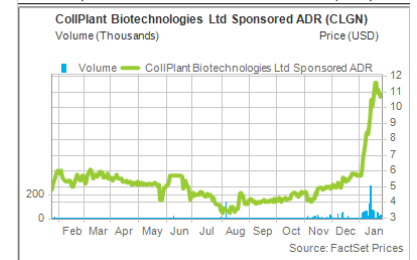
We spoke with management last week. Three development were highlighted.

1. We may see an expansion – partnership in aesthetic medicine.
2. CollPlant joined the “Advanced Regenerative Manufacturing Institute”.
3. 3D Systems (NYSE: DDD, Not Rated) and CollPlant announced a joint development agreement.

The Best Collagen on the Market. CollPlant differentiates itself through its tobacco-based rhCollagen production platform, which is currently the only commercially viable plant-derived human collagen on the market. The type 1 collagen which is being used in the medicinal field is primarily extracted from cows, pigs, and human cadavers, and comes with several disadvantages. The process required to recycle collagen from mature tissue cells comes with an inherent risk of mutations in its protein structure. Extraction from animal or human tissue is also associated with the risk of disease transmission. Tissue-derived collagen has a low homogeneity profile leading to lower efficacy of regeneration and the possibility of inflammatory responses from foreign body responses. One of CollPlant's goals with its rhCollagen production platform is to overcome these issues; Delivering an unlimited capacity of a pure (and safe) product.

rhCollagen. A safer, efficient, effective alternative. CollPlant's rhCollagen is derived from genetically engineered tobacco plants but is identical to the type 1 collagen that is produced by the human body. Tobacco is used as the production platform because it is both an easy crop to grow and able to be genetically manipulated. CollPlant's understanding of tobacco on a molecular level allows for precise control over the product with the ability to produce it on an industrial scale. CollPlant's plant-derived rhCollagen has been demonstrated to heal tissue faster, has faster human cell proliferation, superior homogeneity, and an improved safety profile with greater purity. Using a plant-based product reduces the risk of complications such as rejection by the patient or infection. By producing rhCollagen through tobacco, the product is not only effective, but is also more cost-efficient to produce. These features make CollPlant's rhCollagen an ideal building block for 3D bioprinting of tissues and organs, soft tissue repair, healing of wounds, and dermal fillers. Lifesaving organ (development) is the focus of the company's partnerships with United Therapeutics (UTHR)-Not Rated.

Current Price	\$10.85		
Price Target	\$15.00		
Estimates	F2019E	F2020E	F2021E
Expenses (\$000s)	\$ 8,644	\$ 10,828	\$ 16,816
1Q March	\$ 2,150	\$ 2,620	\$ 4,108
2Q June	\$ 2,194	\$ 2,639	\$ 4,156
3Q September	\$ 2,150	\$ 2,775	\$ 4,252
4Q December	\$ 2,150	\$ 2,794	\$ 4,300
	F2019E	F2020E	F2021E
EPS (diluted)	\$ (0.03)	\$ (1.06)	\$ (0.17)
1Q March	\$ (0.01)	\$ (0.01)	\$ (0.05)
2Q June	\$ (0.01)	\$ (0.33)	\$ (0.04)
3Q September	\$ (0.01)	\$ (0.36)	\$ (0.04)
4Q December	\$ (0.00)	\$ (0.37)	\$ (0.03)
EBITDA/Share	(\$0.11)	(\$0.17)	\$0.38
EV/EBITDA (x)	-484	-318	146
Stock Data			
52-Week Range	\$3.35	-	\$12.05
Shares Outstanding (mil.)	5.4		
Market Capitalization (mil.)	\$59		
Enterprise Value (mil.)	\$55		
Debt to Capital	1%		
Book Value/Share	\$0.79		
Price/Book	3.3		
Average Three Months Trading Volume (K)	0		
Insider Ownership			
Institutional Ownership			
Short interest (mil.)	0.0%		
Dividend / Yield	\$0.00/0.0%		



Corrected 1.31.2020

rhCollagen is the Future for Collagen Based Medicine. CollPlant's production pipeline revolves around the treatment of organ and tissue failure through 3D bioprinting, aesthetic medicine, Orthobiologics, and advanced wound care. CollPlant aims to make its rhCollagen platform technology the gold standard for collagen-based products. A partnership with United Therapeutics is active today, evaluating the feasibility of producing bio-printed organs. Collplant has two products, Vergenix STR and Vergenix FG, being commercialized in Europe and is developing other collaborations with its Bio Inks and Medical aesthetics products.

Exhibit 1. Product Models

VergenixSTR (Arthrex) - Tendon repair	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E
Prevalence	17,405,517	17,753,627.81	18,108,700	18,470,874.37	18,840,292	19,217,097.69	19,601,440	19,993,468.44	20,393,338	20,801,204.56	21,217,229	#####
Growth	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Target Population	10,000,000	10,600,000	10,812,000	11,028,240	11,248,805	11,473,781	11,703,257	11,937,322	12,176,068	12,419,589	12,667,981	12,921,341
Market Share	0.2%	0.4%	1%	2%	2%	3%	4%	5%	6%	6%	6%	6%
Treated Patients	15,000	42,400	75,684	165,424	224,976	344,213	468,130	596,866	730,564	745,175	760,079	775,280
Cost per year	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500
% Price Increase	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Revenue (M) \$	7.5	21.2	37.8	82.7	112.5	172.1	234.1	298.4	365.3	372.6	380.0	387.6
Probability of Success	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%
Total sales (\$M)	\$2	\$6	\$11	\$25	\$34	\$52	\$70	\$90	\$110	\$112	\$114	\$116

VergenixFG - Wound Healing	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E
Prevalence	21,016,080	21,436,402	21,865,130	22,302,432	22,748,481	23,203,450	23,667,519.50	24,140,870	24,623,687.28	25,116,161	#####	26,130,854
Growth	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Target Population	12,609,648	13,240,130	13,902,137	14,597,244	15,327,106	16,093,461	16,898,134	17,743,041	18,630,193	19,561,703	20,539,788	21,566,777
Market Share	0%	0%	1%	2%	2%	3%	3%	3%	3%	4%	4%	4%
Treated Patients	1,000	13,240	55,609	116,778	229,907	321,869	506,944	532,291	558,906	782,468	821,592	862,671
Cost per year	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500
% Price Increase	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Revenue (M) \$	0.5	6.6	27.8	58.4	115.0	160.9	253.5	266.1	279.5	391.2	410.8	431.3
Probability of Success	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%
Total sales (\$M)	\$0	\$2	\$8	\$18	\$34	\$48	\$76	\$80	\$84	\$117	\$123	\$129

Biolnk (United Therapeutics) Lung Biotech PBC	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E
Prevalence	1,576,206	1,607,730	1,639,885	1,672,682	1,722,863	1,774,549	1,845,531	1,919,352	1,996,126	2,075,971	2,159,010	2,245,370
Growth	2%	2%	2%	3%	3%	4%	4%	4%	4%	4%	4%	4%
Target Population	1,260,965	1,286,184	1,311,908	1,338,146	1,378,290	1,419,639	1,476,425	1,535,482	1,596,901	1,660,777	1,727,208	2,020,833
Market Share	0%	0%	1%	2%	2%	3%	3%	3%	3%	3%	3%	3%
Treated Patients	1,261	5,145	10,495	20,072	27,566	42,589	44,293	46,064	47,907	49,823	51,816	60,625
Cost per year	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000
% Price Increase	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Revenue (M) \$	1.3	5.1	10.5	20.1	27.6	42.6	44.3	46.1	47.9	49.8	51.8	60.6
Probability of Success	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
Total sales (\$M)	\$0.1	\$0.5	\$1.0	\$2.0	\$2.8	\$4.3	\$4.4	\$4.6	\$4.8	\$5.0	\$5.2	\$6.1

Aesthetic Medicine	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E
Prevalence	4,203,216	4,287,280	4,415,899	4,592,535	4,776,236	4,967,286	5,165,977	5,372,616	5,587,521	5,811,021	6,043,462	6,285,201
Growth	2%	3%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Target Population	3,858,552	3,974,309	4,133,281	4,298,612	4,470,557	4,649,379	4,835,354	5,028,769	5,229,919	5,439,116	5,656,681	
Market Share	0%	0%	1%	3%	3%	4%	4%	4%	4%	4%	4%	4%
Treated Patients	1,000	11,923	33,066	128,958	178,822	185,975	193,414	201,151	209,197	217,565	226,267	
Cost per year	\$400	\$400	\$400	\$400	\$400	\$400	\$400	\$400	\$400	\$400	\$400	\$400
% Price Increase	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Revenue (M) \$	0.4	4.8	13.2	51.6	71.5	74.4	77.4	80.5	83.7	87.0	90.5	
Probability of Success	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%
Total sales (\$M)	\$0.0	\$0.3	\$3.3	\$9.3	\$36.1	\$50.1	\$52.1	\$54.2	\$56.3	\$58.6	\$60.9	\$63.4

Source: Dawson James

Modeling Assumptions:

1. We assume Vergenix STR and Vergenix FG achieve only modest European market share penetration. This is a result of the limited capital supporting the launch. The data, thus far, has been quite good on the associated outcomes with the products. In addition to our modest market share assumptions, we assume only a 30% probability of success that the full revenue potential of the products is realized. We do this for conservatism.
2. Bio Ink – United Therapeutics. How does one model the value of producing a synthetic lung, heart, or kidney? Collagen as the building block is ideally positioned to be a part of the organ replacement market. We assume modest pricing for the ink, very modest market share penetration, single digits and even more modest success assumption of just 10%. Here too, we do this for conservatism. We do discuss in the report the potential catalysts associated with the partnership, including U.S. production of Collagen and expansion to additional target organs. The value could be between \$5M and \$15M, but no revenues are assumed in our model. We do however assume the company returns to the capital markets and raises additional operating capital. In this way, our model projections are based on a fully diluted out year share calculations, which may prove to be too conservative, especially if the United deal and an additional partnership deal occur next year.
3. Aesthetic Medicine. The size of this market is also large, blockbuster size (billions). We see CollPlant's rhCollagen as a more ideal dermal filler and as a product scaffold for a variety of new applications from rejuvenation to breast reconstruction. Here too, our assumptions for pricing and market share may be too conservative. Our probability of success assigned is highest here at 70%, as we feel the pathway is well defined.

Valuation: We model CollPlant's rhCollagen technology platform in the 3D bioprinting, aesthetic, and advanced wound care markets. We use varying probabilities for each indication ranging from just 10% to 70% that our sales goals can be achieved. The models then flow into our income statement which is projected out to 2030. On top of these therapeutic success probabilities, we apply a discount rate (r) of 30% (our highest rate for emerging growth companies), and we assume additional capital raises (dilution) in our final share count. We then apply these projections into our Free Cash Flow to the firm model below and round to the nearest whole number to derive our 12-month price target.

Exhibit 2. FCFF Model

Average \$	11
Price Target \$	15
Year	2020

DCF Valuation Using FCF (mln):

Units ('000)	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E
EBIT	(3,704)	(7,072)	(1,688)	7,265	29,783	67,231	99,578	130,746	141,759	155,913	181,373	171,602
Tax Rate	0%	0%	5%	10%	12%	14%	18%	18%	24%	28%	30%	30%
EBIT(1-t)	(3,704)	(7,072)	(1,603)	6,539	26,209	57,819	81,654	107,212	107,737	112,257	126,961	120,122
CapEx	(796)	(1,090)	(1,090)									
Depreciation	392											
Change in NWC (ex.cash)												
FCF	(4,108)	(8,162)	(2,693)	6,539	26,209	57,819	81,654	107,212	107,737	112,257	126,961	120,122
PV of FCF	(11,733)	(17,933)	(4,552)	8,501	26,209	44,476	48,316	48,799	37,722	30,234	26,303	19,143
Discount Rate	30%											
Long Term Growth Rate	1%											
Terminal Cash Flow	378,097.79											
Terminal Value YE2030	46,351											
NPV	344,811											
NPV-Debt												
Projected Shares out (thousands)	23,171	2030E										
NPV Per Share	\$ 14.88											

Source: Dawson James

Income Statement

CollPlant Holdings Ltd. (\$000)																	
CollPlant: YE Dec 31	2018A	1Q19A	2Q19A	3Q19E	4Q19E	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E
Revenue																	
VergenixSTR (Arthrex) - Tendon repair							6,360	11,353	24,814	33,746	51,632	70,220	89,530	109,585	111,776	114,012	116,292
VergenixFG - Wound Healing							1,986	8,341	17,517	34,486	48,280	76,042	79,844	83,836	117,370	123,239	129,401
Biolink (United Therapeutics) Lung Biotech PBC							514	1,050	2,007	2,757	4,259	4,429	4,606	4,791	4,982	5,182	6,062
Aesthetic Medicine							280	3,338	9,259	36,108	50,070	52,073	54,156	56,322	58,575	60,918	63,355
Misc Revenues	812	594	606	600	600	2,400	-	-	-	-	-	-	-	-	-	-	-
Product Revenues	812	594	606	600	600	2,400	9,140	24,082	53,596	107,097	154,242	202,763	228,136	254,533	292,704	303,350	315,110
Royalties																	
Total Revenue	4,812	594	606	600	600	2,400	9,140	24,082	53,596	107,097	154,242	202,763	228,136	254,533	292,704	303,350	315,110
Expenses:																	
Cost of Goods Sold	380	405	453	450	450	1,758	1,828	4,816	10,719	21,419	30,848	40,553	45,627	45,816	43,906	45,503	47,267
%COGS	8%	68%	25%	25%	25%	73%	20%	20%	20%	20%	20%	20%	20%	18%	15%	15%	15%
Research and Development	5,186	875	797	800	800	3,272	5,000	6,000	7,094	8,947	11,284	14,232	17,951	22,640	27,517	33,444	40,648
Sales and Marketing	3,330	870	944	900	900	3,614	4,000	6,000	6,000	9,500	12,531	17,232	22,799	30,164	39,909	52,801	69,858
Total Expenses	8,896	2,150	2,194	2,150	2,150	8,644	10,828	16,816	23,813	39,866	54,663	72,017	86,377	98,621	111,331	131,748	157,773
Operating Income (loss)	(4,084)	(1,556)	(1,588)	(1,550)	(1,550)	(6,244)	(1,688)	7,265	29,783	67,231	99,578	130,746	141,759	155,913	181,373	171,602	157,337
Financing income	440	16	(325)	(390)	(468)	(1,167)	(84)	727	3,574	9,412	17,924	23,534	34,022	43,656	54,412	51,481	48,775
Total Other Income (expenses)	(60)	(498)	257	283	297	339											
Financial net (expenses)	380	(482)	(68)	(107)	(171)	(828)	-	-	-	-	-	-	-	-	-	-	-
Pretax Income	(3,704)	(2,038)	(1,520)	(1,657)	(1,721)	(7,072)	(1,688)	7,265	29,783	67,231	99,578	130,746	141,759	155,913	181,373	171,602	157,337
Income Tax Benefit (Provision)							(84)	727	3,574	9,412	17,924	23,534	34,022	43,656	54,412	51,481	48,775
Tax Rate							5%	10%	12%	14%	18%	18%	24%	28%	30%	30%	31%
Gain (loss) from discontinued operations																	
GAAP Net Income (loss)	(3,704)	(2,038)	(1,520)	(1,657)	(1,721)	(7,072)	(1,688)	7,265	29,783	67,231	99,578	130,746	141,759	155,913	181,373	171,602	157,337
GAAP-EPS	(0.03)	(0.01)	(0.33)	(0.36)	(0.37)	(0.11)	(0.11)	0.33	1.20	4.48	4.40	5.18	5.58	6.11	7.08	6.66	6.08
GAAP-EPS (Dil)	(0.03)	(0.01)	(0.33)	(0.36)	(0.37)	(0.11)	(0.11)	0.33	1.20	4.48	4.40	5.18	5.58	6.11	7.08	6.66	6.08
Wgtd Avg Shrs (Bas) - (000's)	212,660	233,011	4,662	4,662	4,662	61,749	9,701	13,536	14,902	15,022	15,142	15,264	15,386	15,510	15,634	15,760	15,886
Wgtd Avg Shrs (Dil) - (000's)	212,660	233,011	4,662	4,662	4,662	61,749	14,694	22,282	24,901	15,022	22,639	25,262	25,385	25,508	25,632	25,758	25,884

Source: Dawson James

Risk Analysis

Clinical Trial Risk. Collplant and its partners may be dependent on the outcome of product based clinical trials.

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

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

Intellectual Property. Collplant may face IP challenges, forcing the company to defend its patents or claiming the company is infringing on other patents.

Market Share Risk. The collagen and related products market is competitive and tends to be dominated by large pharma and biotechnology and or medical device companies.

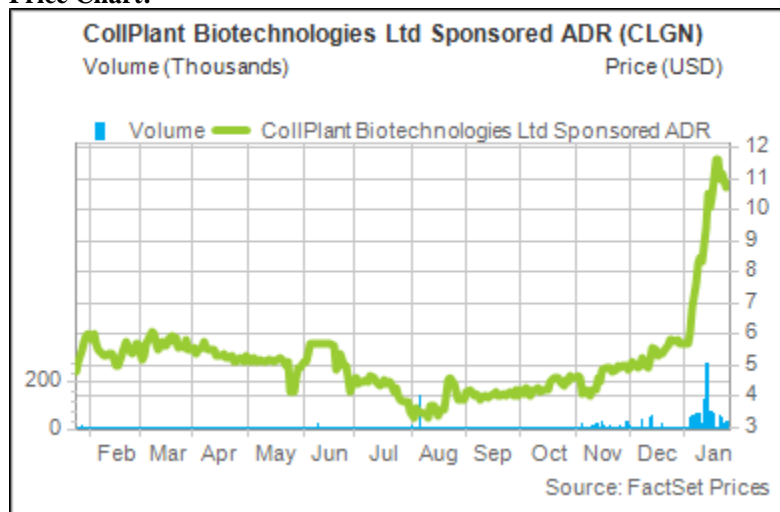
Regulatory Risk. Collplant, even with good clinical data could face extensive delays and other regulatory setbacks.

Companies mentioned in this report

United Therapeutics (UTHR): Not Covered

Important Disclosures:

Price Chart:



Price target and rating changes over the past three years:

Initiated – Buy – November 4, 2019 – Price Target \$9.00

Update Report – Buy – January 27, 2020 – Price Target \$15.00, EPS Grid correction 1.31.2020

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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%

Analyst Certification:

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