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## CollPlant Biotechnologies (NASDAQ/CLGN)

November 4, 2019

### BUY: Pure Collagen from Tobacco, A Healthier Alternative

*CollPlant is a bioengineering company developing, manufacturing, and commercializing regenerative medicine products. CollPlant's focus is on its proprietary technology platform, which mass produces recombinant human collagen (rhCollagen) sourced from tobacco plants. CollPlant uses this rhCollagen to 3d bioprint tissues, organs, and other medical aesthetic products. CollPlant currently has a Strategic agreement with United Therapeutics (NASDAQ: UTHR) for 3D bioprinting of lung transplants and other life-saving organs. Multiple other partners are expected to emerge over the next few years.*

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### Investment Highlights

**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.

**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.

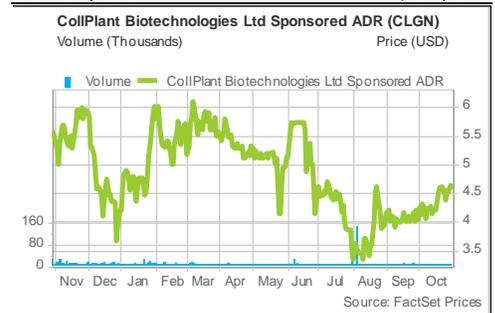
**Current Price** \$4.58  
**Price Target** \$9.00

Estimates	F2019E	F2020E	F2021E
<b>Expenses (\$000s)</b>	\$ 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
<b>EPS (diluted)</b>	\$ (0.03)	\$ (1.06)	\$ (0.11)
1Q March	\$ (0.01)	\$ (0.01)	\$ (0.03)
2Q June	\$ (0.01)	\$ (0.33)	\$ (0.03)
3Q September	\$ (0.01)	\$ (0.36)	\$ (0.03)
4Q December	\$ (0.00)	\$ (0.37)	\$ (0.02)

EBITDA/Share	(\$0.11)	(\$0.11)	\$0.33
EV/EBITDA (x)	-123	-123	43

Stock Data		
52-Week Range	\$3.13	\$6.38
Shares Outstanding (mil.)	3.8	
Market Capitalization (mil.)	\$17	
Enterprise Value (mil.)	\$14	
Debt to Capital	2%	
Book Value/Share	\$0.79	
Price/Book	3.3	
Average Three Months Trading Volume (K)	0	
Insider Ownership	36.1%	
Institutional Ownership	0.3%	
Short interest (mil.)	0.0%	
Dividend / Yield	\$0.00/0.0%	



Initiation - Nov. 4, 2019 - Buy - Price Target \$9.00

Please find Important Disclosures beginning on Page 13.

**Bio Ink with United Therapeutics – The Dream of the Future – Organ Creation.** In 2018, CollPlant announced a collaboration agreement with United Therapeutics. The deal terms were \$5M in an upfront payment and up to \$39M in milestone and option payments. Two key catalysts coming up next year involve United’s efforts to product Collagen in the U.S. and expansion of the original agreement to up to three more organs. We assume the two milestones represent double-digit payments in the millions.

**Dermal Filler Too.** In the first quarter of 2019, CollPlant supplied their first dermal filler order into the aesthetic market, through their anti-wrinkling treatment made with hyaluronic acid and their plant-based tissue regenerating rhCollagen. In order to establish quicker regulatory approval of the rhCollagen technology platform worldwide, CollPlant plans on first gaining exposure from Vergenix STR, Vergenix FG, and their CE marking in the EU, with an eye towards U.S. expansion as partnerships and capital allow. We see the potential for another major partnership to occur in this area that would be at least as big, but likely larger, than the initial partnership with United Therapeutics.

**The Vergenix Products: Tendon & Wound Healing.** Vergenix STR is a soft tissue repair matrix that was designed for mixing with PRP to form a scaffold with delayed degradation and enhanced retention to the injury site in order to enable a localized, prolonged therapeutic effect. Vergenix STR is intended for treatment of tendinopathy. Vergenix FG is a product designed for treating chronic diabetic and venous wounds, pressure ulcers, traumatic injuries and surgical wounds, all of which are a major challenge faced by patients and physicians. To heal them, the body needs to generate new tissue through the utilization of its own natural resources, which are often lacking. Vergenix FG is an advanced wound care product based on the company’s rhCollagen technology. Vergenix STR and Vergenix FG both received CE marking certification in late 2016, allowing them to be marketed in the EU and distributed by local manufacturers. Vergenix STR was picked up by Arthrex, a large European manufacturing company, and relabeled ACP tendo for distribution purposes. Both Vergenix products have also begun to see sales in the middle east, India, and some African countries.

**Multi-billion Dollar Market Potential:** The annual market size for CollPlant’s products is large, in the blockbuster size but it will take time. We see Bio-Ink as having enormous potential. We acknowledge that it’s been a futuristic idea portrayed in movies as the stuff of science fiction, but we see it becoming a reality over the coming decade. In the interim period the company must penetrate traditional collagen markets from the use of collagen for dermal fillers in aesthetics, wound care, and specific medical applications (tendons) represented by the Vergenix series of products. To realize this the company must continue to validate its products, the economics, and attributes and work to build partnerships with established players in the respective markets.

**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 30% 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 or FCFE, discounted EPS or dEPS, and sum-of-the-parts or SOP models, which are equal-weighted, averaged and rounded to the nearest whole number to derive our 12-month price target.

**Risk Factors:** These include Clinical Risk, Partnership Risk, Investment and Financial Risk, Regulatory Risk, Market Share Risk, and Legal and Commercial Risks.

**Company Overview:** CollPlant is a regenerative medicine company with headquarters located in Rehovot, Israel. Currently in the commercial and developmental phase of production, CollPlant focuses on using recombinant human collagen, sourced from tobacco plants, to aid in tissue repair and organ manufacturing. Currently, production focuses on three-dimensional bioprinting of tissues and organs, dermal fillers in the aesthetic market, orthobiologics, and the advanced wound care markets. On the market, CollPlant has three commercially viable products; BioInk as their proprietary biomaterial for 3D printing, VergenixSTR for soft tissue repair, and Vergenix FG for chronic wound treatment. CollPlant is unique in the regenerative medicine field in that they are the only company with a commercially viable technological platform for the production of genetically engineered or recombinant human collagen. Their type 1 recombinant collagen differs from the competition because it is derived from a plant source instead of animal or cadaver tissue and shows an identical resemblance to the type 1 collagen produced by the human body. The advantages of their proprietary molecule include improved rate of regeneration and proliferation, high homogeneity, and reduced risk of immune response from infection or foreign bodies. CollPlant plans to harness the unique properties of their rhCollagen and to position it as the “gold standard” of the collagen/biomaterial market. On the production and distributing side of the company, management has aligned several strategic partnerships and agreements with significant manufacturing and distributing partners. In Europe, CollPlant partnered with Athrex in Berlin, Germany, for mass-scale distribution of Vergenix STR. In the U.S., CollPlant has an agreement with United Therapeutics for global licensing and commercialization of Bio Ink for the development of organs such as lungs. We expect the work with United is likely to expand next year as United starts manufacturing Collagen on U.S. soil and expands the partnership for up to three more organs.

### Exhibit 1. Catalysts

Dermal Filler	Worldwide	Aesthetics	Sign collaboration agreement with strategic partner	YE 2019	++
Dermal Filler	Worldwide	Aesthetics	Photocurable filler completed PoC study	2Q20	+++
BioInk	Worldwide	3D bioprinting	Expand collaborations with Tier 1 companies	2Q20	++
BioInk	United Therapeutics	3D bioprinting	Milestone on U.S. manufacturing of Collagen	1H20	++
BioInk	United Therapeutics	3D bioprinting	Milestone on expansion of partnership to up to three more organs	1H20	++
VergenixSTR	Worldwide	Orthobiologics	Expand distribution network outside EU	YE 2021	+++
VergenixFG	Worldwide	Acute and Chronic Wounds	Expand worldwide distribution network	YE 2021	+++

Stock Significance Scale: + of moderate importance; ++ higher level; +++ highly

Source: Dawson James

**The Bull Case:** There is an increasing demand within the healthcare industry for more effective treatments. CollPlant aims to meet these demands through its superior form of type 1 human collagen, which has the potential to create the new standard for recombinant collagen in biotechnology. Organ transplantation is a prime example in which CollPlant believes its product can fill an undermet demand. Organ transplantation is significantly stunted by the limitation of available organs from donors. Only 58% of the citizens in the United States are signed up to be organ donors, and only 3 in 1,000 people die in a way that allows for organ preservation and donation. The number of people on the waitlist for organ donation is continually rising each year due to the shortage of viable organs. CollPlant's 3D bioprinting technology, Bio Ink, has the potential to be the solution the field so desperately requires. Bio Ink utilizes CollPlant's proprietary rhCollagen platform technology to enable unlimited affordable access to organs on a global scale. It also offers a high safety and compatibility profile with its high homogeneity, biocompatibility, and flexible physical and mechanical properties. The success of this product would be a game-changer for all. Can it really happen? United Therapeutics (UTHR), not rated, thinks so. The initial transaction brought in a modest \$5M upfront fee but we expect several catalysts over the next few years, including next year with United's anticipated U.S. manufacturing of collagen which should trigger another milestone, and the potential for United to expand the partnership to include up to three additional organs. \$39M in such milestones remain "on the table. In the interim period CollPlant has two approved products being sold in Europe (Vergenix product series). The potential for those products to grow is substantial. We temper our enthusiasm by not including any U.S. revenue estimates and handicapping the peak possible revenues with a probability of success factor. We employ the same methodology for bio-printed organs and in our assumptions around aesthetic medicine. Given today's micro-capitalization of under \$20M and modest burn rate, we see a lot of upside for patient shareholders as the company works to commercialize their collagen products.

**Bear Case.** CollPlant undeniably has promising products but has a long road ahead. CollPlant's implants and cosmetic products must reach the market, and that means clinical trials which are expensive and take time. United Therapeutics is a great partner, but the deal terms (for UTHR are modest), potentially reflecting the fact, that it take time, a decade, before any products might be commercialized. The approved products are generating just very modest revenues today and in small markets. Bears will assume additional capital raises (which we assume too and are factored into our 2030 estimated share count), and as such will see capital as a headwind to limit price expansion.

**Our Take:** Collplant has big dreams. The company has the potential to be the provider of the key ingredient in the synthetic organs marketplace. It is likely to take time. In the interim period we hope to see expansion of the original agreement with United as a catalyst for a higher stock price. CollPlant differentiates itself through its plant-based rhCollagen. By using tobacco as a platform, CollPlant's product aims to be superior to currently available collagen products. This opens up a wide range of markets, from cosmetics and implants to the 3d bioprinting of organs, all of which are in the billions. CollPlant's currently approved products, Vergenix STR and Vergenix FG, create a clinically acceptable platform for physicians to observe the advantages of plant-derived human collagen in regenerative medicine and help lay the groundwork for regulatory acceptance of other future applications of CollPlant's rhCollagen. Their revenue while modest is expected to grow over time, and as it does so it offsets the company's spending and reduces the need for the company to return to the capital markets to raise cash (at unfavorable terms). In order to think about the future success of a company, one must first predict the environment around the company that nourishes its science and platform. Bio-organs represent the "holy grail" of the dream of regenerative medicine. rhCollagen as the Bio Ink could be the fuel that turns this science fiction into a reality for patients. Given the distressed value reflected in where the company trades today, we see a favorable risk-reward ratio for patient investors.

**Financials.** CollPlant is on track for \$2-3M in revenues in 2019, and we expect revenue from this base to grow over the coming years. In addition, we hope to see several catalysts play out in 2020 that could bring in non-dilutive capital to the company of between \$5 and \$25M, which would provide up to two additional years of capital runway.

**Exhibit 2. Collagen from Plants, The Production Cascade**



Source: CollPlant presentation 2019

**Exhibit 3. Plant-derived rhCollagen versus animal extracted rhCollagen is Pure.**

Animal Extracted	Plant-derived
<p>Cell binding domains</p>	<p>Cell binding domains</p>
<p>Few cell binding domains due to partially denatured crosslinked collagen</p>	<p>Many cell binding domains enabled by perfect triple helix enhance cellular attachment</p>
<p>Slow cell proliferation and slow tissue repair Foreign body reactions (e.g. granuloma)</p>	<p>Fast cell proliferation and fast tissue repair</p>

Source: CollPlant presentation 2019

**Exhibit 4. Product Overview for Applications of RhCollagen**



Source: CollPlant presentation 2019

**Exhibit 5. The Aesthetics Market is Large, so A Small Piece is Big Dollars**

**Dermal Fillers**



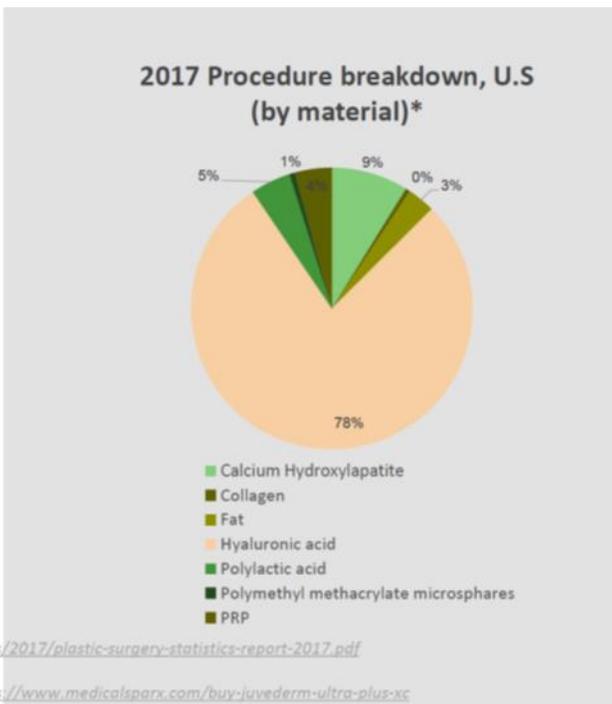
~2,091,476 HA procedures in 2017 in the US\*



Global dermal filler market, 2016\*\*



Cost per syringe: \$100-\$250/unit\*\*\*



\* <https://www.plasticsurgery.org/documents/News/Statistics/2017/plastic-surgery-statistics-report-2017.pdf>

\*\* <http://www.digitaljournal.com/pr/3455394>

\*\*\* <https://www.medicalspax.com/juvederm-hydrate>, <https://www.medicalspax.com/buy-juvederm-ultra-plus-xc>

Source: CollPlant presentation 2019



**Exhibit 8. Commercial products in EU Are Generating Revenues Today**



Source: CollPlant presentation 2019

**Exhibit 9. Vergenix STR – It’s Still Early Days, but All Data Points Up.**



\* recovery in pain and motion. Source: Uri Farkash et al, J Shoulder Elbow Surg (2018)  
 \*\* knee tendon, Source for PMS data – Arthrex Surgical Outcome System™ registry

Source: CollPlant presentation 2019

**Exhibit 10. Product Models**

	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E
<b>VergenixSTR (Arthrex) - Tendon repair</b>												
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%
<b>Total sales (\$M)</b>	<b>\$2</b>	<b>\$6</b>	<b>\$11</b>	<b>\$25</b>	<b>\$34</b>	<b>\$52</b>	<b>\$70</b>	<b>\$90</b>	<b>\$110</b>	<b>\$112</b>	<b>\$114</b>	<b>\$116</b>
<b>VergenixFG - Wound Healing</b>												
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%	0%	1%	2%	2%	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%
<b>Total sales (\$M)</b>	<b>\$0</b>	<b>\$2</b>	<b>\$8</b>	<b>\$18</b>	<b>\$34</b>	<b>\$48</b>	<b>\$76</b>	<b>\$80</b>	<b>\$84</b>	<b>\$117</b>	<b>\$123</b>	<b>\$129</b>
<b>Biolink (United Therapeutics) Lung Biotech PBC</b>												
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%
<b>Total sales (\$M)</b>	<b>\$0.1</b>	<b>\$0.5</b>	<b>\$1.0</b>	<b>\$2.0</b>	<b>\$2.8</b>	<b>\$4.3</b>	<b>\$4.4</b>	<b>\$4.6</b>	<b>\$4.8</b>	<b>\$5.0</b>	<b>\$5.2</b>	<b>\$6.1</b>
<b>Aesthetic Medicine</b>												
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%	0%	1%	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
% Price Increase	-	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%
<b>Total sales (\$M)</b>	<b>\$0.0</b>	<b>\$0.3</b>	<b>\$3.3</b>	<b>\$9.3</b>	<b>\$36.1</b>	<b>\$50.1</b>	<b>\$52.1</b>	<b>\$54.2</b>	<b>\$56.3</b>	<b>\$58.6</b>	<b>\$60.9</b>	<b>\$63.4</b>

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.

Conclusion. We view our model as very conservative. We apply low pricing, market share, and probabilities of success to each of the respective markets. We do this to demonstrate that even with our conservative assumptions, the company appears undervalued.

**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 or FCFE, discounted EPS or dEPS, and sum-of-the-parts or SOP models, which are equal-weighted, averaged and rounded to the nearest whole number to derive our 12-month price target.

**Exhibit 11. FCFE Model**

Average \$		9											
Price Target \$		13											
Year		2020											
<b>DCF Valuation Using FCF (mln):</b>													
Units ('000)	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E
EBIT	(3,704)	(7,072)	(1,688)	7,265	29,783	67,231	99,576	130,746	141,769	155,913	181,373	171,602	157,337
Tax Rate	0%	0%	5%	10%	12%	14%	18%	18%	24%	28%	30%	30%	31%
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	108,563
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	108,563
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	13,309
Discount Rate	30%												
Long Term Growth Rate	1%												
Terminal Cash Flow	378,097.79												
Terminal Value YE2030	46,351												
NPV	326,879												
NPV/Debt													
Projected Shares out (thousands)	25,884												2030E
NPV Per Share	\$ 12.63												

Source: Dawson James

**Exhibit 12. Discounted EPS Model**

Current Year	2020
Year of EPS	2030
Earnings Multiple	15
Discount Factor	30%
Selected Year EPS	\$ 6.66
NPV	\$ 7.25

		Discount Rate and Earnings Multiple Varies, Year is Constant					
		2030 EPS					
Earnings Multiple		5%	10%	15%	20%	25%	30%
		1	\$4.09	\$2.57	\$1.65	\$1.08	\$0.72
5	\$20.45	\$12.84	\$8.23	\$5.38	\$3.58	\$2.42	
10	\$40.90	\$25.69	\$16.47	\$10.76	\$7.15	\$4.83	
15	\$61.35	\$38.53	\$24.70	\$16.14	\$10.73	\$7.25	
20	\$81.80	\$51.37	\$32.94	\$21.52	\$14.31	\$9.67	
25	\$102.25	\$64.21	\$41.17	\$26.90	\$17.88	\$12.08	
30	\$122.70	\$77.06	\$49.40	\$32.28	\$21.46	\$14.50	
35	\$143.15	\$89.90	\$57.64	\$37.66	\$25.04	\$16.91	

Source: Dawson James

**Exhibit 13. Sum of the Parts Model**

Sum of the Parts	LT Gr	Discount Rate	Yrs. to Peak	% Success	Peak Sales MMs	Term Val
VergenixSTR	1%	30%	5	30%	\$388	\$1,337
NPV						\$2.92
VergenixFG	1%	30%	5	30%	\$431	\$1,487
NPV						\$3.25
Biolnk	1%	30%	5	10%	\$61	\$209
NPV						\$0.15
Aesthetic Medicine	1%	30%	5	70%	\$91	\$312
NPV						\$1.59
Net Margin						70%
MM Shrs OS (2030E)						26
Total						\$7.9

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
<b>Revenue</b>																	
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	-	-	-	-	-	-	-	-	-	-	-
<b>Product Revenues</b>	<b>812</b>	<b>594</b>	<b>606</b>	<b>600</b>	<b>600</b>	<b>2,400</b>	<b>9,140</b>	<b>24,082</b>	<b>53,596</b>	<b>107,097</b>	<b>154,242</b>	<b>202,763</b>	<b>228,136</b>	<b>254,533</b>	<b>292,704</b>	<b>303,350</b>	<b>315,110</b>
Royalties																	
<b>Total Revenue</b>	<b>4,812</b>	<b>594</b>	<b>606</b>	<b>600</b>	<b>600</b>	<b>2,400</b>	<b>9,140</b>	<b>24,082</b>	<b>53,596</b>	<b>107,097</b>	<b>154,242</b>	<b>202,763</b>	<b>228,136</b>	<b>254,533</b>	<b>292,704</b>	<b>303,350</b>	<b>315,110</b>
<b>Expenses:</b>																	
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
<b>%COGS</b>	<b>8%</b>	<b>68%</b>	<b>25%</b>	<b>25%</b>	<b>25%</b>	<b>73%</b>	<b>20%</b>	<b>20%</b>	<b>20%</b>	<b>20%</b>	<b>20%</b>	<b>20%</b>	<b>20%</b>	<b>18%</b>	<b>15%</b>	<b>15%</b>	<b>15%</b>
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
<b>Total Expenses</b>	<b>8,896</b>	<b>2,150</b>	<b>2,194</b>	<b>2,150</b>	<b>2,150</b>	<b>8,644</b>	<b>10,828</b>	<b>16,816</b>	<b>23,813</b>	<b>39,866</b>	<b>54,663</b>	<b>72,017</b>	<b>86,377</b>	<b>98,621</b>	<b>111,331</b>	<b>131,748</b>	<b>157,773</b>
<b>Operating Income (loss)</b>	<b>(4,084)</b>	<b>(1,556)</b>	<b>(1,588)</b>	<b>(1,550)</b>	<b>(1,550)</b>	<b>(6,244)</b>	<b>(1,688)</b>	<b>7,265</b>	<b>29,783</b>	<b>67,231</b>	<b>99,578</b>	<b>130,746</b>	<b>141,759</b>	<b>155,913</b>	<b>181,373</b>	<b>171,602</b>	<b>157,337</b>
Financing Income	440	16	(325)	(390)	(468)	(1,167)											
Total Other Income (expenses)	(60)	(498)	257	283	297	339											
Financial net (expenses)	<b>380</b>	<b>(482)</b>	<b>(68)</b>	<b>(107)</b>	<b>(171)</b>	<b>(828)</b>	-	-	-	-	-	-	-	-	-	-	-
<b>Pretax Income</b>	<b>(3,704)</b>	<b>(2,038)</b>	<b>(1,520)</b>	<b>(1,657)</b>	<b>(1,721)</b>	<b>(7,072)</b>	<b>(1,688)</b>	<b>7,265</b>	<b>29,783</b>	<b>67,231</b>	<b>99,578</b>	<b>130,746</b>	<b>141,759</b>	<b>155,913</b>	<b>181,373</b>	<b>171,602</b>	<b>157,337</b>
Income Tax Benefit (Provision)							(84)	727	3,574	9,412	17,924	23,534	34,022	43,656	54,412	51,481	48,775
<b>Tax Rate</b>							<b>5%</b>	<b>10%</b>	<b>12%</b>	<b>14%</b>	<b>18%</b>	<b>18%</b>	<b>24%</b>	<b>28%</b>	<b>30%</b>	<b>30%</b>	<b>31%</b>
Gain (loss) from discontinued operations																	
<b>GAAP Net Income (loss)</b>	<b>(3,704)</b>	<b>(2,038)</b>	<b>(1,520)</b>	<b>(1,657)</b>	<b>(1,721)</b>	<b>(7,072)</b>	<b>(1,688)</b>	<b>7,265</b>	<b>29,783</b>	<b>67,231</b>	<b>99,578</b>	<b>130,746</b>	<b>141,759</b>	<b>155,913</b>	<b>181,373</b>	<b>171,602</b>	<b>157,337</b>
<b>GAAP-EPS</b>	<b>(0.03)</b>	<b>(0.01)</b>	<b>(0.33)</b>	<b>(0.36)</b>	<b>(0.37)</b>	<b>(0.11)</b>	<b>(0.11)</b>	<b>0.33</b>	<b>1.20</b>	<b>4.48</b>	<b>4.40</b>	<b>5.18</b>	<b>5.58</b>	<b>6.11</b>	<b>7.08</b>	<b>6.66</b>	<b>6.08</b>
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
Wgt'd 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
Wgt'd 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.

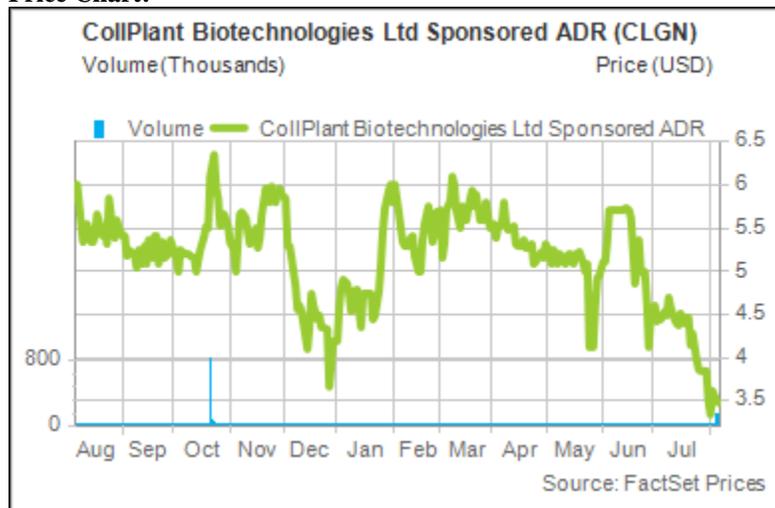
**Regulatory Risk.** Collplant, even with good clinical data could face extensive delays and other regulatory setbacks.

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

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	# of Companies	% of Total	# of Companies	% of Totals
Market Outperform (Buy)	28	82%	4	14%
Market Perform (Neutral)	6	18%	0	0%
Market Underperform (Sell)	0	0%	0	0%
Total	34	100%	4	12%

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