

## Lineage Cell Therapeutics (NYSE/LCTX)

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### BUY: OpRegen Continues to Shine

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*Lineage reported updated interim results from its ongoing n=24-patient Phase 1/2a clinical study of OpRegen. Overall, 10/12 (83%) of the Cohort 4 patients' treated eyes continued to be at or above baseline visual acuity at their last assessment, based on per protocol scheduled visits ranging from 6 months to ~3 years post-transplant.*

### Investment Highlights

**OPC1 Update:** Lineage reported interim results from the n=24-patient Phase 1/2a clinical study of its lead product candidate, OpRegen. These results include a minimum of six months of follow-up in all 24 patients treated with OpRegen, including all 12 patients treated in Cohort 4, which had better baseline vision and smaller areas of GA at baseline than earlier cohorts.

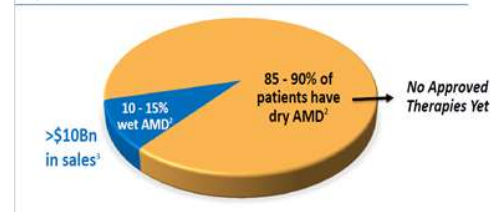
*From the Press Release:*

- Improvements in best corrected visual acuity (BCVA) for Cohort 4 patients reached up to +19 letters on the Early Treatment Diabetic Retinopathy Study (ETDRS) chart. In contrast, 10/12 (83%) of the patients' untreated eyes were below pre-treatment baseline values at the same time points.
- Among the six Cohort 4 patients treated between September and November 2020, three (50%) continue to exhibit marked improvements in BCVA ranging from +8 to +18 letters at their last scheduled assessments of at least 6 months.
- Two additional Cohort 4 patients experienced a gain between +2 and +4 letters from their baseline values.
- One Cohort 4 patient measured 6 letters below baseline.
- Previously reported structural improvements in the retina, decreases in drusen density, and a trend toward slower GA progression in treated compared to untreated eyes continued to be present.
- Overall, OpRegen has been well tolerated with no unexpected adverse events or serious adverse events.
- Evidence of durable engraftment of OpRegen RPE cells has extended to more than 5 years in the earliest treated patients, supporting the potential for OpRegen to be a one-time treatment.

**Valuation:** Our valuation for Lineage is principally driven by the opportunity in Dry AMD, narrowed down further by a sub-set of patients with GA. Our model does include modest revenues from the SCI product and from Renevia, but as previously stated, the majority of the valuation is driven by OpRegen. We assume just a 30% probability of success in Dry AMD and SCI, which drives our \$6.00 target.

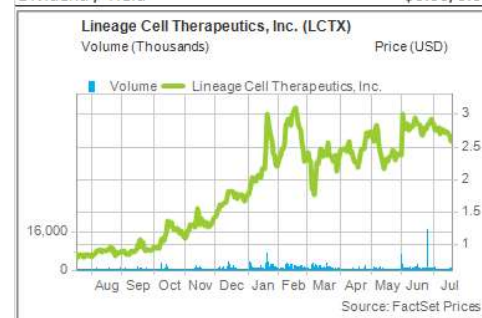
**Risks to our thesis include:** (1) clinical trial; (2) commercial; (3) employee; (4) financial; (5) intellectual property; (6) partnership; and (7) regulatory.

Current Price		\$2.58
Price Target		\$6.00
Type of AMD	% of AMD Cases	FDA Approved Therapies
Wet AMD	10 – 15%	Lucentis & Eylea (\$10 Billion in annual sales)
Dry AMD	85 – 90%	None



Source: Lineage

Stock Data			
52-Week Range	\$0.79	-	\$3.13
Shares Outstanding (mil.)	162.1		
Market Capitalization (mil.)	\$418		
Enterprise Value (mil.)	\$399		
Debt to Capital	0%		
Book Value/Share	\$1.28		
Price/Book	2.8		
Average Three Months Trading Volume (K)	640		
Insider Ownership	0.4%		
Institutional Ownership	42.3%		
Short interest (mil.)	0.1		
Dividend / Yield	\$0.00/0.0%		



**Valuation.** It is difficult to predict probabilities of success from early trial data. As such, we use a low probability of success for OpRegen and OPC1 of just 30%. We model OpRegen in dry macular degeneration with geographic atrophy, as well as OPC1 in SCI, although the real driver is dry AMD as a result of the large market size. We do not model any revenues from these programs until 2023. Our models also factor in funding (dilution) using a 2029E share count of 301M shares versus the last reported share count of ~150M.

We triangulate FCFF, discounted EPS, and sum-of-the-parts models and select a 30% discount rate across these three models. The 30% discount is based on the early nature of the company's products. For companies with high visibility and positive cash flow, we typically use a discount rate of 10%; for companies with products generating revenues, approaching cash flow breakeven or better, we typically use a 15% discount rate. We then average and equally weight each model, rounded to the nearest whole number, to derive a net present value, which is where we set our price target. Investors should recognize that this modeling exercise, which is projected eight years forward, is based on the current (limited) data and estimates. As such, our ability to predict a 12-month target is strained. The price of the stock is likely to be driven in the near term by factors such as news flow, early trial data, and cyclic concerns of financings (dilution). One possible catalyst may be the approval of Renevia in Europe, which could lead to an out-license deal that could bring in additional capital to the company.

### Exhibit 1. Free Cash Flow Model (\$)

Average	6.0
Price Target	8.6
Year	2021

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

Calculation using FCF (mm):												
Units ('000)	2018A	2019A	2020A	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E
EBIT	(47,130)	19,642	(32,647)	(45,665)	(84,627)	390,860	670,137	962,059	1,358,519	2,179,494	2,138,628	2,494,832
Tax Rate	0%	0%	0%	0%	0%	0%	0%	10%	15%	20%	25%	28%
EBIT (1-t)	(47,130)	19,642	(32,647)	(45,665)	(84,627)	390,860	670,137	865,853	1,154,741	1,743,595	1,603,971	1,796,279
CapEx	(9,704)	-	-	-	-	-	-	-	-	-	-	-
Depreciation	(794)	(118)	-	-	-	-	-	-	-	-	-	-
Change in NWC	-	-	-	-	-	-	-	-	-	-	-	-
FCF	(57,628)	19,524	(32,647)	(45,665)	(84,627)	390,860	670,137	865,853	1,154,741	1,743,595	1,603,971	1,796,279
PV of FCF	(97,391)	32,996	(42,441)	(45,665)	(65,098)	231,278	305,024	303,159	311,005	361,231	255,619	220,205
Discount Rate	30%											
Long Term Growth Rate	1%											
Terminal Cash Flow	6,256,006											
Terminal Value YE2027	766,921											
NPV	2,601,239											
NPV-Debt	-											
Shares out ('000)	300,935	2029E										
NPV Per Share	8.6											

Source: Dawson James estimates

### Exhibit 2. Discounted-EPS Model (\$)

Current Year	2021
Year of EPS	2029
Earnings Multiple	5
Discount Factor	30%
Selected Year EPS	9.67
NPV	5.9

Discount Rate and Earnings Multiple Varies, Year is Constant							
Earnings Multiple		5%	10%	15%	20%	25%	30%
	2	13.09	9.02	6.32	4.50	3.25	2.37
	5	32.73	22.56	15.81	11.25	8.11	5.93
	10	65.46	45.12	31.62	22.49	16.23	11.86
	15	98.19	67.68	47.42	33.74	24.34	17.78
	20	130.92	90.24	63.23	44.99	32.45	23.71
	25	163.65	112.80	79.04	56.23	40.57	29.64
	30	196.38	135.36	94.85	67.48	48.68	35.57
	35	229.11	157.91	110.66	78.73	56.79	41.50

Source: Dawson James estimates

### Exhibit 3. Sum-of-the-Parts Model

	LT Gr	Discount Rate	Yrs to Mkt	% Success	Peak Sales (M)	NPV
<b>Spinal Cord Paralysis</b>	1%	30%	3	30%	\$222	\$765
NPV						\$0.17
<b>Dry Macular Degeneration</b>	1%	30%	3	30%	\$5,052	\$17,421
NPV						\$3.95
<b>Renevia</b>	1%	30%	2	50%	\$40	\$139
NPV						\$0.07
Net Margin						50%
Shares Outstanding (M) in 2029E						301
Total						\$4.2

Source: Dawson James estimates

#### Exhibit 4. Income Statement

Lineage: Income Statement (\$000)															
YE December 31	2019A	1Q20A	2Q20A	3Q20A	4Q20E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E
Spinal Cord Injury Therapy		-	-	-	-	-	-	-	-	5,965	12,170	18,621	31,660	48,444	97,857
Dry Macular Degeneration							-	-	674,532	1,030,069	1,396,272	1,772,071	2,156,441	2,600,414	2,971,902
Renevia		-	-	-	-	-	542	1,504	12,034	17,327	23,581	27,067	27,065	27,062	26,791
<b>Net revenue</b>							-	-	674,532	1,036,034	1,408,442	1,790,692	2,727,211	2,648,858	3,069,759
<b>Grant Revenues</b>	2,037	348	287	229	1,193	2,057	2,078	2,099	2,120	2,141	2,162	2,184	2,206	2,228	2,250
Royalties from Product Sales and license fees	1,221	166	99	342	626	1,233	1,246	1,258	1,271	1,283	1,296	1,309	1,322	1,335	1,349
Subscription & Advertisement Revenues		-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sales of Research Products & Services	257	-	-	-	260	260	262	265	267	270	273	276	278	281	284
<b>Total Revenue</b>	<b>3,515</b>	<b>514</b>	<b>386</b>	<b>571</b>	<b>2,079</b>	<b>3,550</b>	<b>3,586</b>	<b>3,622</b>	<b>678,189</b>	<b>1,039,728</b>	<b>1,412,173</b>	<b>1,794,461</b>	<b>2,731,017</b>	<b>2,652,702</b>	<b>3,073,641</b>
Cost of Goods (sales)	(412)	(94)	(75)	(102)	-	(271)	-	-	(188,869)	(259,008)	(338,026)	(322,325)	(436,354)	(397,329)	(460,464)
									28%	25%	24%	18%	16%	15%	15%
Research & Development	(17,948)	(3,339)	(2,805)	(3,566)	(4,648)	(14,358)	(14,646)	(19,039)	(28,559)	(39,982)	(40,782)	(41,598)	(42,430)	(43,278)	(44,144)
Acquired in Process Research & Development															
General & Administrative	(24,031)	(4,519)	(3,908)	(3,628)	(7,170)	(19,225)	(34,605)	(69,209.28)	(69,901)	(70,600)	(71,306)	(72,019)	(72,740)	(73,467)	(74,202)
<b>Total Expenses</b>	<b>(41,979)</b>	<b>(7,858)</b>	<b>(6,713)</b>	<b>(7,194)</b>	<b>(11,818)</b>	<b>(33,583)</b>	<b>(49,250)</b>	<b>(88,249)</b>	<b>(287,329)</b>	<b>(369,591)</b>	<b>(450,115)</b>	<b>(435,942)</b>	<b>(551,523)</b>	<b>(514,074)</b>	<b>(578,809)</b>
Loss from Operation	(38,876)	(7,438)	(6,402)	(6,725)	(9,739)	(30,304)	(45,665)	(84,627)	390,860	670,137	962,059	1,358,519	2,179,494	2,138,628	2,494,832
Interest Income (expense)	1,685	405	380	252											
Gain on AgeX shares and deconsolidation of AgeX	-														
Gain on Sale equity method in Ascendance	-	1,258	2,470	120											
Gain / Loss Oncocyte	2,421	(1,338)	(4,146)	(2,003)											
Loss on Equity (Asterias)	6,744	35	(6)	55											
Unrealized Gain on marketable equity securities	(2,898)	(1,350)	1,174	351											
Other Income (expenses) net	2,532														
Total other income (expense), net															
<b>Pretax Income</b>	<b>19,642</b>	<b>(8,428)</b>	<b>(6,530)</b>	<b>(7,950)</b>	<b>(9,739)</b>	<b>(32,647)</b>	<b>(45,665)</b>	<b>(84,627)</b>	<b>390,860</b>	<b>670,137</b>	<b>962,059</b>	<b>1,358,519</b>	<b>2,179,494</b>	<b>2,138,628</b>	<b>2,494,832</b>
Tax Benefit	(19,234)			178											
Net loss attributable to non-controlling interest	118	29	8	12		49	-	-	-	-	-	-	-	-	-
Taxes	7										96,206	203,778	435,899	534,657	698,553
<b>Tax Rate</b>											10%	15%	20%	25%	28%
<b>GAAP Net Income (Loss)</b>	<b>(11,709)</b>	<b>(8,399)</b>	<b>(6,522)</b>	<b>(7,760)</b>	<b>(9,739)</b>	<b>(32,420)</b>	<b>(45,665)</b>	<b>(84,627)</b>	<b>390,860</b>	<b>670,137</b>	<b>865,853</b>	<b>1,154,741</b>	<b>1,743,595</b>	<b>1,603,971</b>	<b>1,796,279</b>
<b>Total comprehensive loss</b>	<b>(11,709)</b>	<b>(8,399)</b>	<b>(6,522)</b>	<b>(7,760)</b>	<b>(9,739)</b>	<b>(32,420)</b>	<b>(45,665)</b>	<b>(84,627)</b>	<b>390,860</b>	<b>670,137</b>	<b>865,853</b>	<b>1,154,741</b>	<b>1,743,595</b>	<b>1,603,971</b>	<b>1,796,279</b>
<b>GAAP-EPS</b>	<b>(0.08)</b>	<b>(0.06)</b>	<b>(0.04)</b>	<b>(0.05)</b>	<b>(0.06)</b>	<b>(0.22)</b>	<b>(0.26)</b>	<b>(0.46)</b>	<b>2.13</b>	<b>3.64</b>	<b>4.69</b>	<b>6.22</b>	<b>9.36</b>	<b>8.58</b>	<b>9.57</b>
GAAP-EPS (Dil)	(0.08)	(0.06)	(0.04)	(0.05)	(0.04)	(0.19)	(0.23)	(0.17)	(0.04)	0.08	0.32	0.60	0.87	1.12	1.12
Wgtd Avg Shrs (Bas)	145,533	149,807	149,821	149,973	151,473	150,268	174,374	182,595	183,327	184,061	184,799	185,539	186,282	187,028	187,778
Wgtd Avg Shrs (Dil)	145,533	149,807	149,821	149,973	230,854	170,114	276,477	292,629	293,802	294,979	296,160	297,347	298,538	299,734	300,935

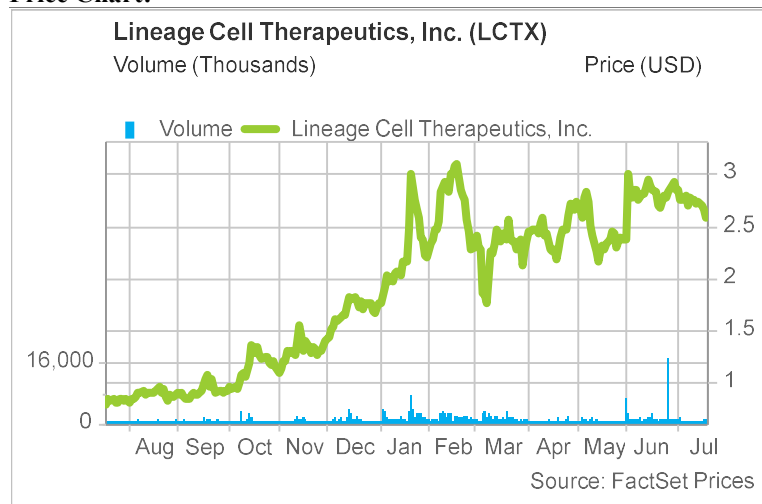
Source: Dawson James estimates, company reports

Companies mentioned in this report:

Asterias (AST)  
AgeX (AGX)  
Oncocyte (OCS)

Important Disclosures:

**Price Chart:**



Price target and ratings changes over the past three years:

Initiated – Buy – February 7, 2019 – Price Target \$6.00  
 Updated – May 28, 2019 – Price Target \$6.00  
 Updated – August 12, 2019 – Price Target \$6.00  
 Updated – September 19, 2019 – Price Target \$6.00  
 Updated – October 15, 2019 – Price Target \$6.00  
 Updated – January 9, 2020 – Price Target \$6.00  
 Updated – November 6, 2020 – Price Target \$6.00  
 Updated – March 9, 2021 – Price Target \$6.00  
 Updated – March 23, 2021 – Price Target \$6.00  
 Updated – May 3, 2021 – Price Target \$6.00  
 Updated – June 2, 2021 – Price Target \$6.00  
 Updated – June 25, 2021 – Price Target \$6.00  
 Updated – July 20, 2021 – Price Target \$6.00

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As of: 30-Jun-21

	Company Coverage		Investment Banking	
<b>Ratings Distribution</b>	# of Companies	% of Total	# of Companies	% of Totals
Market Outperform (Buy)	24	71%	4	17%
Market Perform (Neutral)	10	29%	0	0%
Market Underperform (Sell)	0	0%	0	0%
<b>Total</b>	<b>34</b>	<b>100%</b>	<b>4</b>	<b>12%</b>

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