

## Fortress Biotech (NASDAQ/FBIO)

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### BUY: FBIO – Mustang Gallops Forward

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*Mustang (MBIO-Not Rated) gene therapies, MB-107 and MB-207, for the treatment of X-linked severe combined immunodeficiency (“XSCID”), also known as bubble boy disease, will advance to a Phase 2 trial. The FDA has now removed the clinical hold after a careful review.*

#### Investment Highlights

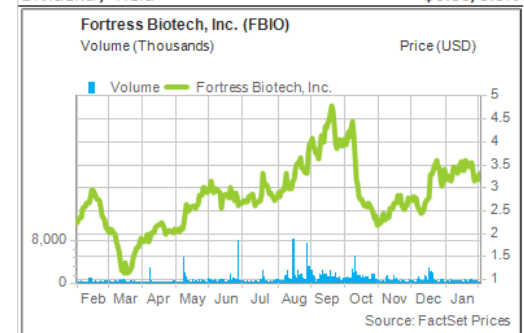
**MB-107 (Lentiviral Gene Therapy for XSCID): Orphan Bubble Boys. Mustang (MBIO-Not Rated) is Leveraging CAR-T and Going Pivotal.** Mustang Bio is developing MB-107 for bubble boy disease using a first-in-class ex-vivo lentiviral gene therapy that has already shown great promise in two early-stage trials. FBIO owns ~30% of Mustang and is entitled to a 4.5% royalty in 107, as well as a 2.5% equity dividend annually. We see peak revenues for MBIO on just 107 alone in the \$50M range, suggesting fair value at 4-5x revenues of \$250M, without the rest of MBIO’s pipeline. That equates to \$75M in value back to FBIO just for the ownership stake; add in the royalty and dividend, and we get closer to the \$100M mark. **We could see this program translate (and the adult program too), into priority vouchers for Fortress.**

**As we Have Stated Before, Fortress is a Company with a Unique Model That Manages Risk but Keeps the Upside, in Our View.** We have known the senior management of Fortress for more than a decade. We have the highest respect for the track record of this team of creating shareholder value while finding, developing to key inflection points, and finally commercializing value-creating therapeutics. The platform value of the Fortress Machine should not be underestimated. We believe its value goes beyond just the sum of the parts of the therapeutics in its pipeline (there are many) and the multiple ownership stakes in its public companies such as Caelum, where Fortress owns a significant percentage of the company.

**Valuation:** Please see our discussion of valuation on the following pages. Valuation is a complex discussion for Fortress as it represents a "platform therapeutics company" that has significant ownership stakes in companies such as Mustang Bio.

**Risks to our thesis include the following:** (1) commercial; (2) regulatory; (3) clinical; (4) financial; and (5) intellectual property. We review these and other risks in the risk section of this report.

Current Price	\$3.31		
Price Target	\$16.00		
<b>Estimates</b>	<b>F2019A</b>	<b>F2020E</b>	<b>F2021E</b>
<b>Expenses (\$000s)</b>	\$ 147,448	\$ 138,291	\$ 160,326
1Q March	\$ 39,085	\$ 34,446	\$ 38,032
2Q June	\$ 34,540	\$ 34,853	\$ 39,786
3Q September	\$ 32,312	\$ 32,518	\$ 39,799
4Q December	\$ 41,511	\$ 36,474	\$ 42,710
	<b>F2019A</b>	<b>F2020E</b>	<b>F2021E</b>
<b>EPS (diluted)</b>	\$ (0.73)	\$ (0.73)	\$ (0.95)
1Q March	\$ 0.09	\$ (0.19)	\$ (0.23)
2Q June	\$ (0.24)	\$ (0.19)	\$ (0.24)
3Q September	\$ (0.23)	\$ (0.20)	\$ (0.23)
4Q December	\$ (0.35)	\$ (0.14)	\$ (0.25)
<b>EBITDA/Share</b>	<b>(\$1.43)</b>	<b>(\$0.15)</b>	<b>(\$1.71)</b>
<b>EV/EBITDA (x)</b>	<b>0.0</b>	<b>0.0</b>	<b>-1.7</b>
<b>Stock Data</b>			
52-Week Range	\$1.04	-	\$4.78
Shares Outstanding (mil.)	93.7		
Market Capitalization (mil.)	\$310		
Enterprise Value (mil.)	\$235		
Debt to Capital	24%		
Book Value/Share	\$1.03		
Price/Book	7.3		
Average Three Months Trading Volume (K)	899		
Insider Ownership	25.1%		
Institutional Ownership	28.6%		
Short interest (mil.)	1.5%		
Dividend / Yield	\$0.00/0.0%		



**Caelum's lead program is CAEL-101** (partnered with Alexion, which now becomes AstraZeneca – AZN-Not Rated). Alexion originally had the option to acquire Caelum (60 days post Phase 2 data) for \$160M (upfront) up to a total value of \$500M (which translated into \$60M value to Fortress). **AZN's planned acquisition now triggers a control provision that is part of the original agreement with Fortress.** As such, AstraZeneca starts the clock on a six-month option to acquire Caelum for \$150M, of which Fortress owns 43%. Recall that the therapeutic here is CAEL-101. It is an amyloid fibril targeted therapy designed to reduce/eliminate amyloid deposits in patients with AL amyloidosis, a rare disorder that results in misfolded immunoglobulin light chain protein that builds up in tissues and organs, principally the kidneys and heart. Data from the current trial is not likely to read-out before AZN's option, which in our opinion, de-risks Fortress. Based on this option, we place the value of the Fortress stake in Caelum alone, w/o milestones or royalties, at \$65M.

**Where are we CAEL-101 Now?** This past September two Phase 3 studies of CAEL-101 for AL amyloidosis were initiated. The studies are planned to enroll N=370 patients. Recall that Alexion owns just under 20% (\$30M investment) in Caelum with up to an additional \$110M in funding based on development milestones. As previously mentioned, Alexion has the option to acquire Caelum (60 days post Phase 3 data) for \$160M (upfront) up to a total value of \$500M (which translates into \$215M value to Fortress). Change of control provisions (AZN's proposed acquisition on ALXN), are now active. In October 2019, the European Commission granted Orphan Drug Designation to CAEL-101 for the treatment of AL amyloidosis. The FDA had previously granted two orphan drug designations to CAEL-101 for the use of CAEL-101 as a therapeutic agent for patients with AL amyloidosis and a radio-imaging agent in amyloidosis.

**Cyprium Therapeutics (private), 79% owned by Fortress - Menkes Disease.** Cyprium is developing CUTX-101 for Menkes disease, a rare genetic disorder affecting about 1 in 100,000 newborns. It is an X-linked recessive disorder of copper metabolism caused by mutations in ATP7A, an evolutionarily conserved copper-transporting ATPase. The disease may cause weak muscle and bone structure, a delay in normal development, seizures, neurodegeneration, and many other painful symptoms, and, ultimately, death. Because of the intensity of the symptoms, infants diagnosed with Menkes disease rarely live past three years of age. CUTX-101 showed a 28% reduction in mortality (early treatment) and improvements in neurodevelopment in a Phase 1-2 trial. We note that in August, Fortress reported positive top-line clinical efficacy results for CUTX-101. The study demonstrated statistically significant improvement in overall survival for Menkes disease subjects who received early treatment (ET) with CUTX-101, compared to an untreated historical control (HC) cohort, with a nearly 80% reduction in the risk of death (Hazard Ratio = 0.21, p<0.0001). Median survival for the ET cohort was 14.8 years (177.1 months) compared to 1.3 years (15.9 months) for the untreated HC cohort.

**A Phase 3 trial is now completed, with a rolling NDA submission slated in 1Q21.** We note that the FDA previously granted Orphan Drug, Fast Track, and Rare Pediatric Disease Designations to CUTX-101. Given the nature of this disease, a pediatric voucher is also possible.

**Dermatology - Not a bad business.** Fortress's 3Q produced \$9M-plus in revenues. The company continues to acquire and launch new products building the dermatology franchise. We expect to see a robust growth rate as market penetration continues to develop.

**MB-107 (Lentiviral Gene Therapy for XSCID): Orphan Bubble Boys. Mustang (MBIO-Not Rated) is Leveraging CAR-T and Going Pivotal.** Mustang Bio is developing MB-107 for bubble boy disease using a first-in-class ex-vivo lentiviral gene therapy that has already shown great promise in two early-stage trials. FBIO owns ~30% of Mustang and is entitled to a 4.5% royalty in 107, as well as a 2.5% equity dividend annually. We see peak revenues for MBIO on just 107 alone in the \$50M range, suggesting fair value at 4-5x revenues of \$250M, without the rest of MBIO's pipeline. That equates to \$75M in value back to FBIO just for the ownership stake; add in the royalty and dividend, and we get closer to the \$100M mark. **We could see this program translate (and the adult program too), into priority vouchers for Fortress.**

**Cancer Immunotherapy - Building a Better Mouse Trap (TKI & PD-L1).** CheckPoint (CKPT) is developing an EGFR Tyrosine Kinase Inhibitor (TKI) known as CK-101 and has an anti-PD-L1 antibody (Cosibelimab). The PD-L1 has shown substantial efficacy in multiple tumor types with a well-tolerated safety profile. In September, Fortress announced (updated) positive interim results from the ongoing global, open-label, multicohort, Phase 1 clinical trial of the anti-PD-L1 antibody, cosibelimab, in patients with advanced cancers, including the registration-enabling cohort of patients with metastatic cutaneous squamous cell carcinoma ("mCSCC"). Cosibelimab demonstrated a 51.4% objective response rate ("ORR") and 13.5% complete response rate, which is nearly double the complete response rate observed at the time of previous analysis.

**So how does FBIO benefit?** CKPT is approx. 23% (post financing) owned by FBIO, which also gets a 4.5% royalty on sales of both programs above and again, here too, receives an annual 2.5% equity dividend. The PD-L1 market alone represents a blockbuster opportunity. We believe that the revenue potential is high. Fortress's 32% stake in Checkpoint, plus the product royalty, could prove quite valuable. Given the revenue potential, it suggests to us that Checkpoint could easily be worth (3-5x revenues) or \$2B in market value (must be adjusted for NPV), 32% of which is owned by FBIO or \$640M in value and again, that is without the royalty or dividend valued.

**Model Assumptions**

1. Our probability of success for Tramadol is just 10% with commercialization in 2023.
2. We model five late-stage therapeutic products (below) and apply to each one its own probability of success factor.
3. Each model assumes launch timing, market share, and pricing.
4. Models are based on available statistics for prevalence and incidence of the target therapeutic indication.
5. Price is based on our understanding of the market and the duration of therapy annually.
6. Our model assumes certain milestones are achieved, for example, a voucher associated with Menkes disease program is monetized.

**Exhibit 1. Product Models**

Avenue Therapeutics	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E
IV Tramadol													
IV pain relievers market	10,000,000	10,010,000	10,020,010	10,030,030	10,040,060	10,050,100	10,060,150	10,070,210	10,080,281	10,090,361	10,100,451	10,110,552	10,120,662
Cost of Therapy	\$200.00			\$200.00	\$200.00	\$202.00	\$204.02	\$206.06	\$208.12	\$210.20	\$212.30	\$214.43	\$216.57
Price Change				1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Market share				0%	0%	4%	10%	20%	30%	35%	40%	45%	45%
Patients Treated with a Course				-	-	402,004	1,006,015	2,014,042	3,024,084	3,531,626	4,040,180	4,549,748	4,554,298
Revenues (000)	0	0	0	81,205	205,247	415,014	629,375	742,355	857,747	975,589	986,330		
Probability of Success (Phase 3)				10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
Adjusted Revenues (000)				\$ -	\$ -	\$ 8,120	\$ 20,525	\$ 41,501	\$ 62,937	\$ 74,235	\$ 85,775	\$ 97,559	\$ 98,633

Mustang Bio	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E
MB-107 "Bubble Boy"													
Current "Reservoir" patients (U.S. and ex-U.S. markets)					1,050	1,125	900	600	500	575	475	375	275
New Cases a year (U.S. and ex-U.S. markets)					75	75	75	75	75	75	75	75	75
Market Share Prevalence					10%	20%	35%	55%	60%	65%	70%	75%	80%
Market Share New Cases					10%	20%	35%	55%	75%	85%	90%	90%	90%
Total patients treated					113	240	341	371	356	438	400	349	288
Cost of Therapy (one-time)					\$ 1,500,000	\$ 1,500,000	\$ 1,500,000	\$ 1,500,000	\$ 1,500,000	\$ 1,500,000	\$ 1,500,000	\$ 1,500,000	\$ 1,500,000
Revenues (M)					168,750	360,000	511,875	556,875	534,375	656,250	600,000	523,125	431,250
Probability of Success (Phase 2/3)					30%	30%	30%	30%	30%	30%	30%	30%	30%
Adjusted Revenues (M)					\$ 50,625	\$ 108,000	\$ 153,563	\$ 167,063	\$ 160,313	\$ 196,875	\$ 180,000	\$ 156,938	\$ 129,375
Royalty assumed					4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%
Royalty revenue (000)					\$ 2,278	\$ 4,860	\$ 6,910	\$ 7,518	\$ 7,214	\$ 8,859	\$ 8,100	\$ 7,062	\$ 5,822

CheckPoint PD-L1 in NSCLC	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E
Cosbelimab (NSCLC)													
New cases of lung cancer/year		228,150	228,150	228,150	228,150	228,150	228,150	228,150	228,150	228,150	228,150	228,150	228,150
Patients - PDL1 Option		75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%
Target patient population		171,113	171,113	171,113	171,113	171,113	171,113	171,113	171,113	171,113	171,113	171,113	171,113
Market share						1%	2%	4%	6%	8%	10%	12%	14%
Patients treated						1,711	3,422	6,845	10,267	13,689	17,111	20,534	23,956
Costs						\$ 35,000	\$ 55,000	\$ 55,000	\$ 55,000	\$ 55,000	\$ 55,000	\$ 55,000	\$ 55,000
Revenues (000)						\$ 59,889	\$ 188,224	\$ 376,448	\$ 564,671	\$ 752,895	\$ 941,119	\$ 1,129,343	\$ 1,317,566
Probability of Success						50%	50%	50%	50%	50%	50%	50%	50%
Adjusted Revenues (M)						\$ 29,945	\$ 94,112	\$ 188,224	\$ 282,336	\$ 376,448	\$ 470,559	\$ 564,671	\$ 658,783
Royalty assumed		4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%
Royalty revenue (000)						\$ -	\$ -	\$ 1,348	\$ 4,235	\$ 8,470	\$ 12,705	\$ 16,940	\$ 21,175

CheckPoint TKI in NSCLC	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E
CK-101 (EGFR mutation + LC)													
New cases of lung cancer/year		228,150	228,150	228,150	228,150	228,150	228,150	228,150	228,150	228,150	228,150	228,150	228,150
Total Lung Cancer Market size (M)		19,250,000	19,478,150	19,706,300	19,934,450	20,162,600	20,390,750	20,618,900	20,847,050	21,075,200	21,303,350	21,531,500	21,759,650
Total NSCLC lung cancer		16,362,500	16,556,428	16,750,355	16,944,283	17,138,210	17,332,138	17,526,065	17,719,993	17,913,920	18,107,848	18,301,775	18,495,703
% of patients with EGFR/NSCLC patients		26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%
Patients with EGFR/NSCLC patients						59,319	59,319	59,319	59,319	59,319	59,319	59,319	59,319
Market share						5%	10%	12%	14%	15%	16%	17%	18%
Treated patients (000)						2,966	5,932	7,118	8,305	8,898	9,491	10,084	10,677
Cost (competition=\$15,240/month)						\$ 182,880	\$ 182,880	\$ 182,880	\$ 182,880	\$ 182,880	\$ 182,880	\$ 182,880	\$ 182,880
Revenues (000)						\$ 542,413	\$ 1,084,826	\$ 1,301,791	\$ 1,518,756	\$ 1,627,239	\$ 1,735,721	\$ 1,844,204	\$ 1,952,687
Probability of Success						30%	30%	30%	30%	30%	30%	30%	30%
Adjusted Revenues (000)						\$ 162,724	\$ 325,448	\$ 390,537	\$ 455,627	\$ 488,172	\$ 520,716	\$ 553,261	\$ 585,806
Royalty assumed						4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%
Royalty revenue (000)						\$ 7,323	\$ 14,646	\$ 17,574	\$ 20,503	\$ 21,968	\$ 23,432	\$ 24,897	\$ 26,361

Cyprium Therapeutics (private)	2018E	2019E	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E
CUTX-101 (Menkes Disease)													
Prevalence (USA)	2,720	2,720	2,720	2,720	2,720	2,720	2,720	2,720	2,720	2,720	2,720	2,720	2,720
Incidence annually (USA)	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000
Target patient population	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500
Market share		0%	0%	0%	10%	30%	50%	70%	80%	80%	80%	80%	80%
Patients treated					250	750	1,250	1,750	2,000	2,000	2,000	2,000	2,000
Price					\$ 300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000
Revenues (000)					75,000	225,000	375,000	525,000	600,000	600,000	600,000	600,000	600,000
Probability of Success						30%	30%	30%	30%	30%	30%	30%	30%
Adjusted Revenues (M)					\$ 22,500	\$ 67,500	\$ 112,500	\$ 157,500	\$ 180,000	\$ 180,000	\$ 180,000	\$ 180,000	\$ 180,000
Royalty assumed					4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%
Royalty revenue (000)					\$ -	\$ 1,013	\$ 3,038	\$ 5,063	\$ 7,088	\$ 8,100	\$ 8,100	\$ 8,100	\$ 8,100

Source: Dawson James estimates, company reports

**Valuation:** How to value Fortress? As a reminder, Fortress, as the controlling entity, reports consolidated statements. Our valuation expenses are based on GAAP numbers, but we recognize this is conservative. If we substituted Non-GAAP projections, it would actually result in a higher valuation. There are multiple ways to value a "platform therapeutics company" such as Fortress that has a majority ownership in multiple public companies with the rights to royalties and milestones (such as monetization of a priority voucher), plus the company has its own internal products that are generating revenues and internal private companies that have their own therapeutic pipeline candidates. We choose to model the key products as they exist (inside and outside the company) and project them based on the ownership percentage to the Fortress income statement. We recognize that this is a "model." It is a method to forecast future value, i.e., reporting the revenues of outside companies based on the percentage ownership (not as a 100% consolidated entity), but we do show the consolidated expenses as they are currently reported by Fortress. We view our method as doubly conservative; that is, we cut the revenues but not the expenses. One might argue we need to assess each outside company, determine net income, and apply valuation metrics, based on the projected value of the external company. We leave that for "others" to do, as our purpose is to determine: is their upside to Fortress based on the value of the holding in the external companies, the product royalties, the annual stock dividend, and the internal companies and P&L metrics of Fortress itself? We conclude, yes. In our model, we do separate and show our projected revenues, royalties, and milestones. We model external and internal products. We then assume R&D, SG&A based on the current consolidated numbers. We project the share count as well as revenues, expenses, and, ultimately, net income out to 2030. For each individual product, we make certain assumptions about the timing and probability of success and apply these assumptions to our model. We apply a probability of success in our therapeutic models. This ranges from as low as just 10% to as high as 70% based on what we feel is the therapeutic risk that the product will advance. In addition to the success factor, we apply a 15% discount rate (r) in our Free Cash Flow to the Firm (FCFF), Discounted EPS (dEPS), and Sum of the Parts (SOP) models. We then average the result and round to the nearest whole number to derive our \$16.00 12-month price target.

## Exhibit 2. Free Cash Flow Model (\$)

Average	16
Price Target	19
Year	2021

### DCF Valuation Using FCF (mln):

units ('000)	2019A	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E
EBIT	(101,660)	(127,214)	(130,786)	(88,877)	41,242	179,653	285,107	364,314	423,769	465,013	504,382	538,992
Tax Rate	0%	0%	0%	0%	0%	10%	15%	18%	20%	21%	21%	21%
EBIT (1-t)	(101,660)	(127,214)	(130,786)	(88,877)	41,242	161,688	242,341	298,738	339,015	367,360	398,462	425,804
CapEx												
Depreciation												
Change in NWC												
FCF	(101,660)	(127,214)	(130,786)	(88,877)	41,242	161,688	242,341	298,738	339,015	367,360	398,462	425,804
PV of FCF	(134,445)	(146,296)	(130,786)	(77,284)	31,185	106,312	138,559	148,525	146,566	138,104	130,258	121,040
Discount Rate		15%										
Long Term Growth Rate		1%										
Terminal Cash Flow		3,071,868										
Terminal Value YE2030		873,217										
NPV		1,479,400										
NPV-Debt		9,396										
Shares out ('000)		79,158	2030E									
NPV Per Share		19										

Source: Dawson James estimates, company reports

**Exhibit 3. Discounted-EPS Model**

Current Year	2021
Year of EPS	2030
Earnings Multiple	10
Discount Factor	15%
Selected Year EPS	\$ 5.54
NPV	16

		Discount Rate and Earnings Multiple Varies, Year is Constant					
		5%	10%	15%	20%	25%	30%
Earnings Multiple	1	3.57	2.35	1.57	1.07	0.74	0.52
	5	17.86	11.75	7.87	5.37	3.72	2.61
	10	35.71	23.49	15.75	10.74	7.44	5.22
	15	53.57	35.24	23.62	16.11	11.15	7.84
	20	71.42	46.99	31.50	21.47	14.87	10.45
	25	89.28	58.74	39.37	26.84	18.59	13.06
	30	107.13	70.48	47.24	32.21	22.31	15.67
	35	124.99	82.23	55.12	37.58	26.02	18.28

Source: Dawson James estimates

**Exhibit 4. Sum-of-the-Parts Model**

	LT Gr	Discount Rate	Yrs to Peak	% Success	Peak Sales (MM's)	Term Val
<b>Fortress Biotech</b>						
<b>Avenue Tramadol IV (Pain)</b>	1%	15%	4	10%	\$986	\$7,045
NPV						\$1.5
<b>Mustang MB-107 (bubble Boy)</b>	1%	15%	3	70%	\$431	\$3,080
NPV						\$5.4
<b>Cyprium CUTX-101 (Menke's Disease)</b>	1%	30%	4	70%	\$600	\$2,069
NPV						\$2
<b>CheckPoint Cosibelimab (PD-L1)</b>	1%	30%	4	70%	\$1,318	\$4,543
NPV						\$4
<b>CheckPoint CK-101 (TRK)</b>	1%	30%	4	70%	\$1,953	\$6,733
NPV						\$6.3
Net Margin (Products)						30%
MM Shrs OS (2030E)						78
<b>Product Total NPV</b>						\$13
<b>Product Royalties NPV</b>	1%	15%	4	70%	\$102	\$729
NPV						\$1.1
<b>NPV - Royalties &amp; Products</b>						\$14.3
<b>Milestones</b>	1%	10%	2	70%	\$100	\$1,111
NPV						\$2.5
<b>NPV - Royalties &amp; Products &amp; Milestones</b>						\$16.8

Source: Dawson James estimates

Exhibit 5. Income Statement

	2019A	1Q20A	2Q20A	3Q20A	4Q20E	2020E	1Q21E	2Q21E	3Q21E	4Q21E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	
<b>Probability Revenue Forecast: ('000)</b>																					
Avenue Therapeutics: IV Tramadol end use sales							\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 8,120	\$ 20,525	\$ 41,501	\$ 62,937	\$ 74,235	\$ 85,775	\$ 97,559	\$ 98,633	
Percent Owned by Fortress	32%	32%	32%	32%	32%	32%	32%	32%	32%	32%	32%	32%	32%	32%	32%	32%	32%	32%	32%	32%	
Revenues Attributed back to Fortress	-	-	-	-	-	-	-	-	-	-	-	-	2,599	6,568	13,280	20,140	23,755	27,448	31,219	31,563	
Mustang Bio - Bubble Boy (MB-107)												\$ 50,625	\$ 108,000	\$ 153,563	\$ 167,063	\$ 196,875	\$ 180,000	\$ 156,938	\$ 129,375	\$ 129,375	
Percent Owned by Fortress	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	
Revenues Attributed back to Fortress	0	0	0	0	0	0	151,985	32,400	46,063	50,119	50,119	22,500	67,500	112,500	157,500	180,000	180,000	180,000	180,000	180,000	
Cyprium - CUTX-101 - Menkes Disease																					
Percent Owned by Fortress	89%	89%	89%	89%	89%	89%	89%	89%	89%	89%	89%	89%	89%	89%	89%	89%	89%	89%	89%	89%	
Revenues Attributed back to Fortress	1	0	0	0	0	1	0	0	0	0	1	20,025	60,075	100,125	140,175	160,200	160,200	160,200	160,200	160,200	
CheckPoint (Cosibelmab PD-L1)																					
Percent Owned by Fortress	32%	32%	32%	32%	32%	32%	32%	32%	32%	32%	32%	32%	32%	32%	32%	32%	32%	32%	32%	32%	
Revenues Attributed back to Fortress	-	-	-	-	-	-	-	-	-	-	-	29,945	94,112	188,224	282,336	376,448	470,559	564,671	658,783	658,783	
CK-101 end use sales																					
Percent Owned by Fortress	32%	32%	32%	32%	32%	32%	32%	32%	32%	32%	32%	32%	32%	32%	32%	32%	32%	32%	32%	32%	
Revenues Attributed back to Fortress	-	-	-	-	-	-	-	-	-	-	-	162,724	325,448	390,537	455,627	488,172	520,716	553,261	585,806	585,806	
Journey Medical Corporation (Dermatology)	34,921	11,946	9,006	9,447	11,506	41,905	8,674	9,806	9,052	10,183	37,715	41,486	52,072	104,143	124,972	145,801	156,215	166,629	177,044	187,458	
Percent Owned by Fortress	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
Revenues Attributed back to Fortress	34,921	11,946	9,006	9,447	11,506	41,905	8,674	9,806	9,052	10,183	37,715	41,486	45,635	50,198	55,218	60,740	66,814	73,495	80,845	88,929	
Other Revenue Back to Fortress	1,708	972	451	28	428	1,879	475	496	517	579	2,067	2,273	2,501	2,751	3,026	3,328	3,661	4,027	4,430	4,873	
<b>Fortress Revenues</b>	<b>36,629</b>	<b>12,918</b>	<b>9,457</b>	<b>9,475</b>	<b>11,934</b>	<b>43,785</b>	<b>9,150</b>	<b>10,302</b>	<b>9,568</b>	<b>10,762</b>	<b>39,782</b>	<b>78,972</b>	<b>204,863</b>	<b>339,970</b>	<b>447,022</b>	<b>528,650</b>	<b>590,171</b>	<b>636,379</b>	<b>681,513</b>	<b>722,646</b>	
Avenue Therapeutic (IV Tramadol) Royalties (4.5% on sales > \$325M)																					
Associate Milestones											\$ -										
Mustang Bio - Bubble Boy (MB-107) Prob. Adj. Royalties - 4.5%												\$ 2,278	\$ 4,860	\$ 6,910.31	\$ 7,518	\$ 7,214	\$ 8,859	\$ 8,100	\$ 7,062	\$ 5,822	
Associate Milestones																					
Cyprium - CUTX-101 Menke's Disease - Prob. Adj. Royalties - 4.5%												\$ 1,013	\$ 3,038	\$ 5,063	\$ 7,088	\$ 8,100	\$ 8,100	\$ 8,100	\$ 8,100	\$ 8,100	
Associate Milestones											\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000	
CheckPoint (Cosibelmab PD-L1) - Prob. Adj. Royalties - 4.5%															\$ 1,348	\$ 4,235	\$ 8,470	\$ 12,705	\$ 16,940	\$ 21,175	
Associate Milestones																					
CheckPoint (CK-101 - TKI) - Prob. Adj. Royalties - 4.5%															\$ 7,323	\$ 14,645	\$ 17,574	\$ 20,503	\$ 23,432	\$ 24,897	\$ 26,361
Associate Milestones																					
<b>Total Royalties &amp; Milestones</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>13,291</b>	<b>25,220</b>	<b>36,618</b>	<b>43,527</b>	<b>50,052</b>	<b>57,397</b>	<b>62,337</b>	<b>66,999</b>	<b>71,458</b>	
<b>Expenses:</b>																					
<b>Fortress</b>																					
Costs of Goods Sold (Journey Medical)	10,532	3,810	3,124	3,379	3,801	14,114	1,735	1,961	1,810	2,037	7,543	8,297	9,127	10,040	11,044	12,148	13,363	14,699	16,169	17,786	
%COGS	29%	32%	33%	33%	33%	34%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	
<b>Research and Development (Consolidated)</b>	<b>75,236</b>	<b>14,867</b>	<b>15,703</b>	<b>13,298</b>	<b>21,329</b>	<b>78,998</b>	<b>19,078</b>	<b>19,907</b>	<b>21,566</b>	<b>22,396</b>	<b>82,948</b>	<b>87,095</b>	<b>91,450</b>	<b>96,022</b>	<b>100,823</b>	<b>105,865</b>	<b>111,158</b>	<b>116,716</b>	<b>122,552</b>	<b>128,679</b>	
Fortress		678	692	705	705	2,780															
Checkpoint		697	1,219	466																	
Mustang		2,635	3,029	2,543																	
Other**		9,251	9,771	7,925																	
Research and Development- licenses acquired	6,090	250	1,570			8,000	2,760	2,880	3,120	3,240	12,000	16,000	16,800	17,640	18,522	19,448	20,421	21,442	22,514	23,639	
<b>General and Administrative (Consolidated)</b>	<b>55,590</b>	<b>15,519</b>	<b>14,456</b>	<b>15,383</b>	<b>11,344</b>	<b>56,702</b>	<b>14,459</b>	<b>15,037</b>	<b>13,302</b>	<b>15,037</b>	<b>57,836</b>	<b>58,993</b>	<b>60,172</b>	<b>61,376</b>	<b>62,603</b>	<b>63,855</b>	<b>65,133</b>	<b>66,435</b>	<b>67,764</b>	<b>69,119</b>	
Fortress		5,863	5,776	5,892	6,010	23,341															
Avenue		577	684	571																	
Checkpoint		1,553	1,496	1,573																	
Journey Medical Corp. (SG&A)		5,689	5,746	5,803	5,861	23,100															
Mustang		1,769	1,917	1,640																	
Other**		268	458	458		1,184															
<b>Total Operating expenses</b>	<b>147,448</b>	<b>34,446</b>	<b>34,853</b>	<b>32,518</b>	<b>36,474</b>	<b>138,291</b>	<b>38,032</b>	<b>39,786</b>	<b>39,799</b>	<b>42,710</b>	<b>160,326</b>	<b>170,385</b>	<b>177,549</b>	<b>185,078</b>	<b>192,992</b>	<b>201,316</b>	<b>210,074</b>	<b>219,292</b>	<b>228,998</b>	<b>239,223</b>	
<b>Total Operating expenses (Adjusted)</b>	<b>17,714</b>	<b>15,338</b>	<b>16,238</b>	<b>16,835</b>	<b>16,125</b>																
<b>Operating Income (Loss)</b>	<b>110,819</b>	<b>(21,528)</b>	<b>(25,396)</b>	<b>(23,043)</b>	<b>(24,540)</b>	<b>(94,506)</b>	<b>(28,882)</b>	<b>(29,484)</b>	<b>(30,230)</b>	<b>(31,948)</b>	<b>(120,544)</b>	<b>(78,122)</b>	<b>52,534</b>	<b>191,510</b>	<b>297,556</b>	<b>377,386</b>	<b>437,495</b>	<b>479,425</b>	<b>519,514</b>	<b>554,881</b>	
<b>Operating Income (Loss) adjusted</b>	<b>-</b>	<b>(4,796)</b>	<b>(5,881)</b>	<b>-</b>	<b>(22,339)</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	
Interest income (expense), net	2,559	627	336	265	250	2,687	649	677	734	762	2,821	2,962	3,110	3,266	3,429	3,601	3,781	3,970	4,168	4,377	
Interest expense and financing fee	(11,849)	(3,125)	(3,059)	(6,958)	(12,441)	(12,441)	(3,005)	(3,135)	(3,397)	(3,527)	(13,064)	(13,717)	(14,403)	(15,123)	(15,879)	(16,673)	(17,506)	(18,382)	(19,301)	(20,266)	
Change in FV of subsidiary convertible note				(344)	(803)	(1,147)															
Change in FV of investments	(27)	(42)			533																
Gain on deconsolidation of Caelum	18,476																				
<b>Total Other Income</b>	<b>9,159</b>	<b>(2,540)</b>	<b>(3,067)</b>	<b>(6,921)</b>	<b>250</b>	<b>(10,369)</b>	<b>(2,356)</b>	<b>(2,458)</b>	<b>(2,663)</b>	<b>(2,765)</b>	<b>(10,242)</b>	<b>(10,754)</b>	<b>(11,292)</b>	<b>(11,857)</b>	<b>(12,440)</b>	<b>(13,072)</b>	<b>(13,720)</b>	<b>(14,412)</b>	<b>(15,132)</b>	<b>(15,880)</b>	
<b>Pre-tax Income (Loss) from continuing operations</b>	<b>(101,660)</b>	<b>(24,068)</b>	<b>(28,463)</b>	<b>(29,964)</b>	<b>(24,290)</b>	<b>(127,214)</b>	<b>(31,238)</b>	<b>(31,942)</b>	<b>(32,893)</b>	<b>(34,713)</b>	<b>(130,786)</b>	<b>(88,877)</b>	<b>41,242</b>	<b>170,653</b>	<b>285,107</b>	<b>363,314</b>	<b>423,739</b>	<b>483,012</b>	<b>504,382</b>	<b>533,922</b>	
Income Tax Benefit (Provision)														17,965	42,766	65,577	84,754	97,653	116,008	134,748	
<b>Tax Rate</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>10%</b>	<b>15%</b>	<b>18%</b>	<b>20%</b>	<b>21%</b>	<b>23%</b>	<b>25%</b>	
<b>GAAP Net Income (Loss)</b>	<b>(101,660)</b>	<b>(24,068)</b>	<b>(28,463)</b>	<b>(29,964)</b>	<b>(24,290)</b>	<b>(127,214)</b>	<b>(31,238)</b>	<b>(31,942)</b>	<b>(32,893)</b>	<b>(34,713)</b>	<b>(130,786)</b>	<b>(88,877)</b>	<b>41,242</b>	<b>161,688</b>	<b>242,341</b>	<b>298,738</b>	<b>339,015</b>	<b>367,360</b>	<b>388,374</b>	<b>404,244</b>	
Adjusted (Non-GAAP) Loss		(7,336)	(8,948)	(13,683)	(4,651)	(24,617)	(13,346)	(13,927)	(15,087)	(15,667)	(58,027)	(56,286)	(52,909)	(49,735)	(46,751)	(43,946)	(41,309)	(38,830)	(36,500)	(34,310)	
Less: net loss attributable to non-controlling interests	61,700	11,698	15,149	14,417	14,000	55,264	(17,891)	(18,015)	(17,806)	(19,046)	(72,759)	(32,590)	94,151	211,423	289,091	342,683	380,324	406,190	424,875	438,554	
<b>Net Income (loss) attributable to common stockholders</b>	<b>(39,960)</b>	<b>(12,370)</b>	<b>(13,314)</b>	<b>(15,547)</b>	<b>(10,290)</b>	<b>(51,520)</b>	<b>(17,891)</b>	<b>(18,015)</b>	<b>(17,806)</b>	<b>(19,046)</b>	<b>(72,759)</b>	<b>(32,590)</b>	<b>94,151</b>	<b>211,423</b>	<b>289,091</b>	<b>342,683</b>	<b>380,324</b>	<b>406,190</b>	<b>424,875</b>	<b>43</b>	

**Risk Analysis**

In addition to the typical risks associated with development stage specialty pharmaceutical companies, potential risks specific to Fortress Biotech are as follows:

**Financial risk.** The company may need to raise capital in the marketplace in order to successfully push its products into the next phase, and there can be no assurances that the company will be able to successfully raise capital and or do so on favorable terms.

**Clinical and regulatory risk.** Lead products must start and complete clinical trials. Trials may not produce results sufficient for regulatory approval.

**Partnership risk.** Fortress Biotech may seek partnerships for clinical development support and commercialization. We have no specific knowledge of any discussions with possible partners today, and there can be no assurances that the company will be able to secure a favorable partnership.

**Commercial risk.** There are no assurances that the company will be able to secure favorable pricing, commercially launch products, and achieve significant market share to become profitable.

**Legal and intellectual property risk.** The company 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 or that the company may infringe on third parties' patents.



Companies mentioned in this report, working with Fortress and or part of valuation discussion:

Alexion (ALXN/NASDAQ)-Not covered.

InvaGen Pharmaceuticals – (Private).

St. Jude Children’s Research Hospital (Private).

Mustang Bio (MBIO/NASDAQ) – Not covered.

Checkpoint Therapeutics (CKPT/NASDAQ) – Not covered.

Avenue Therapeutics (ATXI/ NASDAQ) – Not covered.

Caelum Biosciences (Private).

Journey Medical Corporation (internal Fortress company).

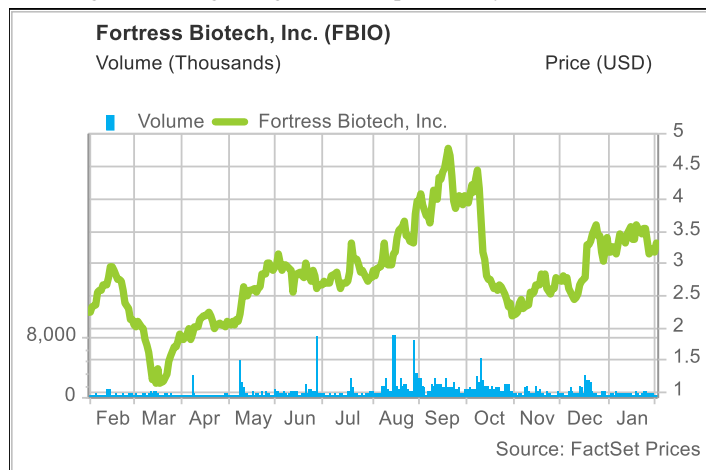
Cyprium Therapeutics (Private).



**Important Disclosures:**

**Price Chart:**

Price target and rating changes over the past three years:



- Initiated – Buy August 26, 2019, Price Target \$19.00
- Update – Buy September 17, 2019, Price Target \$19.00
- Update – Buy November 4, 2019, Price Target \$19.00
- Update – Buy December 11, 2019, Price Target \$19.00
- Update – Buy December 23, 2019, Price Target \$19.00
- Update – Buy January 15, 2020, Price Target \$19.00
- Update – Buy February 14, 2020, Price Target \$19.00
- Update – Buy February 20, 2020, Price Target \$19.00
- Update – Buy March 30, 2020, Price Target \$19.00
- Update – Buy May 14, 2020, Price Target \$19.00
- Update – Buy July 31, 2020, Price Target \$19.00
- Update – Buy September 8, 2020, Price Target \$19.00
- Price Target Change – Buy October 12, 2020, Price Target \$15.00
- Update – Buy October 20, 2020, Price Target \$15.00
- Price Target Change – Buy November 10, 2020, Price Target \$16.00
- Update – Buy December 14, 2020, Price Target \$16.00
- Update – Buy February 2, 2021, Price Target \$16.00

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**Rating Definitions:**

- 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)	21	75%	4	19%
Market Perform (Neutral)	7	25%	0	0%
Market Underperform (Sell)	0	0%	0	0%
Total	28	100%	4	14%

**Analyst Certification:**

The analyst(s) whose name appears on this research report certifies that 1) all of the views expressed in this report accurately reflect his (their) personal views about any and all of the subject securities or issuers discussed; and 2) no part of the research analyst's compensation was, is, or will be directly or indirectly related to the specific recommendations or views expressed by the research analyst in this research report; and 3) all Dawson James employees, including the analyst(s) responsible for preparing this research report, may be eligible to receive non-product or service-specific monetary bonus compensation that is based upon various factors, including total revenues of Dawson James and its affiliates as well as a portion of the proceeds from a broad pool of investment vehicles consisting of components of the compensation generated by investment banking activities, including but not limited to shares of stock and/or warrants, which may or may not include the securities referenced in this report.