

Fortress Biotech (NASDAQ/FBIO)

December 11, 2019

BUY: News Flow Remains Robust– Avenue & Mustang

The NDA for IV Avenue's tramadol has been submitted and Mustang Bio's provided an update at ASH on MB-107 (Phase 1/2 data), lentiviral gene therapy for X-linked severe combined immunodeficiency (XSCID).

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Investment Highlights

Avenue (ATXI-Not Rated) reported filing of the NDA for IV Tramadol. Recall that Avenue Therapeutics is developing Tramadol for treating post-surgical pain. Current treatments for post-surgical pain include strong narcotics such as Schedule II (high potential for abuse) opioids, meant for those with severe pain. Much more mild treatments include IV acetaminophens and over the counter anti-inflammatory drugs (ex: ibuprofen), lacking a single product that treats more moderate pain without addictive qualities. IV Tramadol is a way to fill that gap, and approval would make it the only intravenous Schedule IV (low risk of abuse) opioid in the U.S. During two recently completed Phase 3 trials, Avenue achieved a statistically significant improvement in its primary endpoint(s), as well as all key secondary endpoints. FBIO stands to pick up a \$55M milestone through its 32% ownership of the company.

Mustang Bio (MBIO – Not Rated) Data from ASH. MB-107 is currently being assessed in two Phase 1/2 clinical trials for XSCID (Orphan Bubble Boy disease). The first trial is in newly diagnosed infants under the age of two (at St. Jude), and the second in patients over the age of two who have received prior hematopoietic stem cell transplantation at the National Institutes of Health. Mustang is leveraging CAR-T (and going pivotal). MB-107 is a first-in-class ex-vivo lentiviral gene therapy that has already shown great promise in two early-stage trials. Plans to start a pivotal trial in stem cell transplant naive patients under two years old in early 2020. 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 and that's w/o the rest of MBIO's pipeline. That equates to \$75M in value back to FBIO just for the ownership stake, and adding in the royalty and dividend and we get closer to \$100M mark.

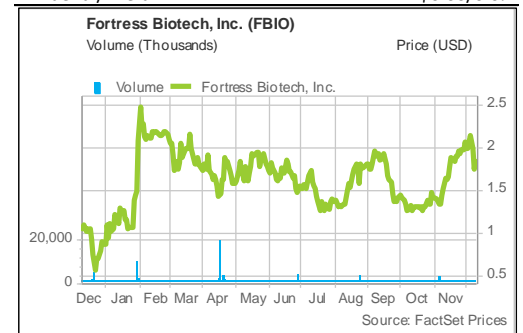
Valuation: Valuation is a complex discussion as there are multiple ways to value a "platform therapeutics company" like Fortress that has significant ownership stakes in multiple public companies with the right to royalties and certain milestones, internal products that are generating revenues and internal private companies that have therapeutic pipeline candidates. We choose to model the key products as they exist (inside or outside the company) and project them, based on the ownership percentage, to the Fortress income statement. We separate royalties and milestones. We model internal products as well. We then assume the complete consolidated R&D, SG&A plus the Fortress current share count (dilution) to project 2030 revenues, expenses, and ultimately net income. We recognize that the income statement, balance sheet and cash flow statements need to be adjusted, (consolidated as they are, they do not paint the best picture of Fortress finances, which we believe is actually improved, when "de-consolidated") to provide the best operational picture of the company.

| | |
|---------------|---------|
| Current Price | \$1.87 |
| Price Target | \$19.00 |

| Estimates | F2019E | F2020E | F2021E |
|--------------------------|------------|------------|------------|
| Expenses (\$000s) | \$ 145,507 | \$ 154,616 | \$ 163,222 |
| 1Q March | \$ 39,085 | \$ 36,705 | \$ 38,707 |
| 2Q June | \$ 34,540 | \$ 38,386 | \$ 40,461 |
| 3Q September | \$ 34,346 | \$ 38,351 | \$ 40,567 |
| 4Q December | \$ 37,536 | \$ 41,175 | \$ 43,487 |
| | F2019E | F2020E | F2021E |
| EPS (diluted) | \$ (1.16) | \$ (1.93) | \$ (1.11) |
| 1Q March | \$ 0.09 | \$ (0.54) | \$ (0.46) |
| 2Q June | \$ (0.24) | \$ (0.45) | \$ 0.35 |
| 3Q September | \$ (0.47) | \$ (0.46) | \$ (0.49) |
| 4Q December | \$ (0.53) | \$ (0.48) | \$ (0.51) |

| | | | |
|---------------|----------|----------|----------|
| EBITDA/Share | (\$1.49) | (\$0.07) | (\$1.11) |
| EV/EBITDA (x) | 0.0 | 0.0 | -1.1 |

| Stock Data | | |
|---|--------|-------------|
| 52-Week Range | \$0.49 | \$2.59 |
| Shares Outstanding (mil.) | | 70.8 |
| Market Capitalization (mil.) | | \$132 |
| Enterprise Value (mil.) | | \$57 |
| Debt to Capital | | 56% |
| Book Value/Share | | \$1.03 |
| Price/Book | | 26.9 |
| Average Three Months Trading Volume (K) | | 281 |
| Insider Ownership | | 25.1% |
| Institutional Ownership | | 12.4% |
| Short interest (mil.) | | 1.5% |
| Dividend / Yield | | \$0.00/0.0% |



We believe our model is conservative as we only partially count the revenues versus the consolidated expenses, based on the company's controlling interest of the outside companies. For each product we make certain assumptions about timing and probability of success (POS) and apply these assumptions to our model. Our POS factor ranges from as low as just 30% to as high as 70% based on what we feel the data has shown, as well as the chances that the drug can be commercialized. On top of this, we then apply a risk rate of 15% 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 \$19.00- 12-month price target.

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

Model Assumptions

1. We model five late-stage therapeutic products (below) and apply to each one its own probability of success factor.
2. Each model assumes launch timing, market share, and pricing.
3. Models are based on available statistics for prevalence and incidence of the target therapeutic indication.
4. Price is based on our understanding of the market and the duration of therapy annually.

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 | \$200 | \$202 | \$204 | \$206 | \$208 | \$210 | \$212 | \$214 | \$217 |
| Price Change | | | | | 1.0% | 1.0% | 1.0% | 1.0% | 1.0% | 1.0% | 1.0% | 1.0% | 1.0% |
| Market share | | | | 1% | 2% | 4% | 10% | 20% | 30% | 35% | 40% | 45% | 45% |
| Patients Treated with a Course | | | | 100,300 | 200,801 | 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) | 20,060 | 40,160 | 81,205 | 205,247 | 415,014 | 829,375 | 1,658,750 | 3,317,500 | 5,026,250 | 5,803,500 | 6,580,750 | 7,358,000 | 7,358,000 |
| Probability of Success (Phase 3) | | | | 70% | 70% | 70% | 70% | 70% | 70% | 70% | 70% | 70% | 70% |
| Adjusted Revenues (000) | | | | \$ 14,042 | \$ 28,112 | \$ 56,843 | \$ 143,673 | \$ 290,510 | \$ 440,562 | \$ 519,648 | \$ 600,423 | \$ 682,912 | \$ 690,431 |

| 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 Prevalance | | | | | 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 |
|-------------------------------|-------|---------|---------|---------|-----------|------------|------------|------------|------------|------------|--------------|--------------|--------------|
| Cosibelimab (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% | 14% |
| Patients treated | | | | | 1,711 | 3,422 | 6,845 | 10,267 | 13,689 | 17,111 | 20,534 | 23,956 | 23,956 |
| Costs | | | | | \$ 35,000 | \$ 55,000 | \$ 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 | \$ 1,317,566 |
| Probability of Success | | | | | 50% | 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 | \$ 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 | \$ 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 | 8,998 | 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 | \$ 14,645 | \$ 17,574 | \$ 20,503 | \$ 21,968 | \$ 23,432 | \$ 24,897 | \$ 26,361 |

| Cyprum Therapeutics (private) | 2018E | 2019E | 2020E | 2021E | 2022E | 2023E | 2024E | 2025E | 2026E | 2027E | 2028E | 2029E | 2030E |
|-------------------------------|-------|-------|-------|-------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| CUTX-101 (Menkes Disease) | | | | | | | | | | | | | |
| Prevalance (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% | 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

Valuation: As we previously mentioned, Valuation is a complex discussion for Fortress. Fortress as the controlling entity reports consolidated statements. There are multiple ways to value a "platform therapeutics company" like Fortress that has majority ownership in multiple public companies with the rights to royalties and milestones, 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 a 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 clearly 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 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 30% 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 \$19.00 - 12 month price target.

Exhibit 2. Free Cash Flow Model

| Average | 19 |
|--------------|------|
| Price Target | 21 |
| Year | 2020 |

DCF Valuation Using FCF (mln):

| units ('000) | 2019E | 2020E | 2021E | 2022E | 2023E | 2024E | 2025E | 2026E | 2027E | 2028E | 2029E | 2030E |
|-----------------------|-----------|-----------|----------|----------|--------|---------|---------|---------|---------|---------|---------|---------|
| EBIT | (94,843) | (122,173) | (74,545) | (93,497) | 42,813 | 204,593 | 349,827 | 489,468 | 573,567 | 639,929 | 704,893 | 741,081 |
| Tax Rate | 0% | 0% | 0% | 0% | 0% | 10% | 15% | 18% | 20% | 21% | 21% | 21% |
| EBIT (1-t) | (94,843) | (122,173) | (74,545) | (93,497) | 42,813 | 184,134 | 297,353 | 401,364 | 458,854 | 505,544 | 556,865 | 585,454 |
| CapEx | | | | | | | | | | | | |
| Depreciation | | | | | | | | | | | | |
| Change in NWC | | | | | | | | | | | | |
| FCF | (94,843) | (122,173) | (74,545) | (93,497) | 42,813 | 184,134 | 297,353 | 401,364 | 458,854 | 505,544 | 556,865 | 585,454 |
| PV of FCF | (109,069) | (122,173) | (64,822) | (70,697) | 28,150 | 105,279 | 147,837 | 173,521 | 172,500 | 165,263 | 158,296 | 144,715 |
| Discount Rate | 15% | | | | | | | | | | | |
| Long Term Growth Rate | 1% | | | | | | | | | | | |
| Terminal Cash Flow | 4,223,632 | | | | | | | | | | | |
| Terminal Value YE2030 | 1,044,017 | | | | | | | | | | | |
| NPV | 1,881,887 | | | | | | | | | | | |
| NPV-Debt | 9,396 | | | | | | | | | | | |
| Shares out ('000) | 89,807 | 2030E | | | | | | | | | | |
| NPV Per Share | 21 | | | | | | | | | | | |

Source: Dawson James

Exhibit 3. Discounted-EPS Model

| | |
|-------------------|---------|
| Current Year | 2020 |
| Year of EPS | 2030 |
| Earnings Multiple | 10 |
| Discount Factor | 15% |
| Selected Year EPS | \$ 6.19 |
| NPV | 15 |

| | | Discount Rate and Earnings Multiple Varies, Year is Constant | | | | | |
|-------------------|----|--|-------|-------|-------|-------|-------|
| | | 5% | 10% | 15% | 20% | 25% | 30% |
| Earnings Multiple | 1 | 3.80 | 2.39 | 1.53 | 1.00 | 0.66 | 0.45 |
| | 5 | 19.00 | 11.93 | 7.65 | 5.00 | 3.32 | 2.24 |
| | 10 | 37.99 | 23.86 | 15.30 | 9.99 | 6.64 | 4.49 |
| | 15 | 56.99 | 35.79 | 22.95 | 14.99 | 9.97 | 6.73 |
| | 20 | 75.99 | 47.72 | 30.59 | 19.99 | 13.29 | 8.98 |
| | 25 | 94.98 | 59.65 | 38.24 | 24.99 | 16.61 | 11.22 |
| | 30 | 113.98 | 71.58 | 45.89 | 29.98 | 19.93 | 13.47 |
| | 35 | 132.97 | 83.51 | 53.54 | 34.98 | 23.26 | 15.71 |

Source: Dawson James

Exhibit 4. Sum-of-the-Parts Model

| Fortress Biotech | LT Gr | Discount Rate | Yrs to Peak | % Success | Peak Sales (MM's) | Term Val |
|---|-------|---------------|-------------|-----------|-------------------|----------|
| Avenue Tramadol IV (Pain) | 1% | 15% | 4 | 70% | \$986 | \$7,045 |
| NPV | | | | | | \$9.5 |
| Mustang MB-107 (bubble Boy) | 1% | 15% | 3 | 70% | \$431 | \$3,080 |
| NPV | | | | | | \$4.8 |
| Cyprium CUTX-101 (Menke's Disease) | 1% | 30% | 4 | 70% | \$600 | \$2,069 |
| NPV | | | | | | \$2 |
| CheckPoint Cosibelimab (PD-L1) | 1% | 30% | 4 | 70% | \$1,318 | \$4,543 |
| NPV | | | | | | \$4 |
| CheckPoint CK-101 (TRK) | 1% | 30% | 4 | 70% | \$1,953 | \$6,733 |
| NPV | | | | | | \$5.6 |
| Net Margin (Products) | | | | | | 30% |
| MM Shrs OS (2030E) | | | | | | 89 |
| Product Total NPV | | | | | | \$20 |
| Product Royalties NPV | 1% | 15% | 4 | 70% | \$132 | \$944 |
| NPV | | | | | | \$1.3 |
| NPV - Royalties & Products | | | | | | \$21.1 |
| Milestones | 1% | 15% | 4 | 70% | \$50 | \$357 |
| NPV | | | | | | \$0.5 |
| NPV - Royalties & Products & Milestones | | | | | | \$21.6 |

Source: Dawson James

Exhibit 5. Income Statement

| | 1Q19A | 2Q19A | 3Q19E | 4Q19E | 2019E | 2020E | 2021E | 2022E | 2023E | 2024E | 2025E | 2026E | 2027E | 2028E | 2029E | 2030E |
|---|----------|----------|----------|----------|-----------|-----------|-----------|------------|------------|-------------|------------|------------|------------|------------|------------|------------|
| Probability Revenue Forecast: ('000) | | | | | | | | | | | | | | | | |
| Avenue Therapeutics: IV Tramadol end use sales | | | | | | | \$ 14,042 | \$ 28,112 | \$ 56,843 | \$ 143,673 | \$ 290,510 | \$ 440,562 | \$ 519,648 | \$ 600,423 | \$ 682,912 | \$ 690,431 |
| Percent Owned by Fortress | 32% | 32% | 32% | 32% | 32% | 32% | 32% | 32% | 32% | 32% | 32% | 32% | 32% | 32% | 32% | 32% |
| Revenues Attributed back to Fortress | - | - | - | - | - | - | 4,493 | 8,996 | 18,190 | 45,975 | 92,963 | 140,980 | 166,288 | 192,135 | 218,532 | 220,938 |
| Mustang Bio - Bubble Boy (MB-107) | | | | | | | \$ 50,625 | \$ 108,000 | \$ 153,563 | \$ 167,063 | \$ 167,063 | \$ 160,313 | \$ 196,875 | \$ 180,000 | \$ 156,938 | \$ 129,375 |
| Percent Owned by Fortress | 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 | 15,188 | 32,400 | 46,069 | 50,119 | 48,094 | 59,063 | 54,000 | 47,081 | 38,813 | |
| Cyprum - CUTX-101 - Menkes Disease | | | | | | | \$ - | \$ 22,500 | \$ 67,500 | \$ 112,500 | \$ 157,500 | \$ 180,000 | \$ 180,000 | \$ 180,000 | \$ 180,000 | \$ 180,000 |
| Percent Owned by Fortress | 89% | 89% | 89% | 89% | 89% | 89% | 89% | 89% | 89% | 89% | 89% | 89% | 89% | 89% | 89% | 89% |
| Revenues Attributed back to Fortress | 0 | 0 | 0 | 0 | 1 | 1 | 20,025 | 60,075 | 100,125 | 140,175 | 160,200 | 160,200 | 160,200 | 160,200 | 160,200 | 160,200 |
| CheckPoint (Cosibelimab PD-L1) | | | | | | | \$ - | \$ 29,945 | \$ 94,112 | \$ 188,224 | \$ 282,336 | \$ 376,448 | \$ 470,559 | \$ 564,671 | \$ 658,783 | |
| Percent Owned by Fortress | 32% | 32% | 32% | 32% | 32% | 32% | 32% | 32% | 32% | 32% | 32% | 32% | 32% | 32% | 32% | 32% |
| Revenues Attributed back to Fortress | - | - | - | - | - | - | - | 9,582 | 30,116 | 60,232 | 90,347 | 120,463 | 150,579 | 180,695 | 210,811 | |
| CK-101 end use sales | | | | | | | | \$ 162,724 | \$ 325,448 | \$ 390,537 | \$ 455,627 | \$ 488,172 | \$ 520,716 | \$ 553,261 | \$ 585,806 | |
| Percent Owned by Fortress | 32% | 32% | 32% | 32% | 32% | 32% | 32% | 32% | 32% | 32% | 32% | 32% | 32% | 32% | 32% | 32% |
| Revenues Attributed back to Fortress | - | - | - | - | - | - | - | 52,072 | 104,143 | 124,972 | 145,801 | 156,215 | 166,629 | 177,044 | 187,458 | |
| Journey Medical Corporation (Dermatology) | 6,477 | 6,477 | 6,452 | 8,645 | 28,051 | 33,661 | 30,295 | 33,325 | 36,657 | 40,323 | 44,355 | 48,791 | 53,670 | 59,037 | 64,941 | 71,435 |
| Percent Owned by Fortress | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
| Revenues Attributed back to Fortress | 6,477 | 8,199 | 8,000 | 8,000 | 30,676 | 33,661 | 30,295 | 33,325 | 36,657 | 40,323 | 44,355 | 48,791 | 53,670 | 59,037 | 64,941 | 71,435 |
| Other Revenue Back to Fortress | | 1,051 | 1,000 | 1,000 | 3,051 | 3,356 | 3,692 | 4,061 | 4,467 | 4,914 | 5,405 | 5,946 | 6,540 | 7,194 | 7,914 | 8,705 |
| Fortress Revenues (consolidated) | 6,477 | 9,250 | 9,000 | 9,000 | 33,728 | 37,019 | 38,482 | 81,594 | 213,443 | 371,665 | 518,221 | 640,158 | 722,438 | 789,775 | 856,406 | 898,359 |
| Avenue Therapeutic (IV Tramadol) Royalties (4.5% on sales > \$325M) Associate Milestones | | | | | | | \$ 55,000 | | | | | \$ 19,825 | \$ 23,384 | \$ 27,019 | \$ 30,731 | \$ 31,069 |
| Mustang Bio - Bubble Boy (MB-107) Prob. Adj. Royalties - 4.5% Associate Milestones | | | | | | | | \$ 2,278 | \$ 4,860 | \$ 6,910.31 | \$ 7,518 | \$ 7,214 | \$ 8,859 | \$ 8,100 | \$ 7,062 | \$ 5,822 |
| Cyprum - CUTX-101 Menke's Disease - Prob. Adj. Royalties - 4.5% Associate Milestones | | | | | | | | \$ 1,013 | \$ 3,038 | \$ 5,063 | \$ 7,088 | \$ 8,100 | \$ 8,100 | \$ 8,100 | \$ 8,100 | \$ 8,100 |
| CheckPoint (Cosibelimab PD-L1) - Prob. Adj. Royalties - 4.5% Associate Milestones | | | | | | | | \$ - | \$ - | \$ - | \$ 1,348 | \$ 4,235 | \$ 8,470 | \$ 12,705 | \$ 16,940 | \$ 21,175 |
| CheckPoint (CK-101 - TKI) - Prob. Adj. Royalties - 4.5% Associate Milestones | | | | | | | | | \$ 7,323 | \$ 14,645 | \$ 17,574 | \$ 20,503 | \$ 21,968 | \$ 23,432 | \$ 24,897 | \$ 26,361 |
| Total Royalties & Milestones | - | - | - | - | - | - | 55,000 | 3,291 | 15,220 | 26,618 | 33,527 | 59,878 | 70,781 | 79,356 | 87,730 | 92,528 |
| Expenses: | | | | | | | | | | | | | | | | |
| Fortress | | | | | | | | | | | | | | | | |
| Costs of Goods Sold (Journey Medical) | 1,884 | 2,386 | 1,479 | 682 | 6,431 | 6,732 | 6,059 | 6,665 | 7,331 | 8,065 | 8,871 | 9,758 | 10,734 | 11,807 | 12,988 | 14,287 |
| %COGS | 29% | 26% | 23% | 8% | 23% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% |
| Research and Development | 23,273 | 18,511 | 19,000 | 18,000 | 78,784 | 82,723 | 86,859 | 91,202 | 95,762 | 100,551 | 105,578 | 110,857 | 116,400 | 122,220 | 128,331 | 134,747 |
| Research and Development- licenses acquired | 450 | 200 | 978 | 2,624 | 4,253 | 8,000 | 12,000 | 16,000 | 16,800 | 17,640 | 18,522 | 19,448 | 20,421 | 21,442 | 22,514 | 23,639 |
| General and Administrative | 13,478 | 13,443 | 12,889 | 16,229 | 56,040 | 57,160 | 58,304 | 59,470 | 60,659 | 61,872 | 63,110 | 64,372 | 65,659 | 66,972 | 68,312 | 69,678 |
| Total Operating expenses (consolidated) | 39,085 | 34,540 | 34,346 | 37,536 | 145,507 | 154,616 | 163,222 | 173,337 | 180,553 | 188,127 | 196,081 | 204,435 | 213,214 | 222,441 | 232,144 | 242,352 |
| Operating income (Loss) | (29,835) | (25,290) | (25,346) | (28,536) | (109,006) | (117,597) | (69,740) | (88,452) | 48,110 | 210,156 | 355,667 | 495,601 | 580,006 | 646,690 | 711,991 | 748,535 |
| Interest income (expense), net | 438 | 779 | | | 1,217 | 1,278 | 1,342 | 1,409 | 1,479 | 1,553 | 1,631 | 1,712 | 1,798 | 1,888 | 1,982 | 2,081 |
| Interest expense and financing fee | (2,469) | (3,106) | | | (5,575) | (5,854) | (6,146) | (6,454) | (6,776) | (7,115) | (7,471) | (7,845) | (8,237) | (8,649) | (9,081) | (9,535) |
| Change in FV of derivative liability | | | | | | | | | | | | | | | | |
| Change in FV of subsidiary convertible note | | | | | | | | | | | | | | | | |
| Change in FV of investments | | | | | | | | | | | | | | | | |
| Gain on deconsolidation of Caelum | 18,384 | 137 | | | 18,521 | (4,576) | (4,805) | (5,045) | (5,297) | (5,562) | (5,840) | (6,132) | (6,439) | (6,761) | (7,099) | (7,454) |
| Total Other Income | 16,353 | (2,190) | | | 14,163 | (4,576) | (4,805) | (5,045) | (5,297) | (5,562) | (5,840) | (6,132) | (6,439) | (6,761) | (7,099) | (7,454) |
| Pretax Income (loss from continuing operations) | (13,482) | (27,480) | (25,346) | (28,536) | (94,843) | (122,173) | (74,545) | (93,497) | 42,813 | 204,593 | 349,827 | 489,468 | 573,567 | 639,929 | 704,893 | 741,081 |
| Income Tax Benefit (Provision) | | | | | | | | | | 20,459 | 52,474 | 88,104 | 114,713 | 134,385 | 162,125 | 185,270 |
| Tax Rate | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 10% | 15% | 18% | 20% | 21% | 23% | 25% |
| GAAP Net Income (Loss) | (13,482) | (27,480) | (25,346) | (28,536) | (94,843) | (122,173) | (74,545) | (93,497) | 42,813 | 184,134 | 297,353 | 401,364 | 458,854 | 505,544 | 542,767 | 555,811 |
| Less: net loss attributable to non-controlling interests | 17,647 | 14,382 | | | 32,029 | - | - | - | - | - | - | - | - | - | - | - |
| Net Income (loss) attributable to common stockholders | 4,165 | (13,098) | (25,346) | (28,536) | (62,814) | (122,173) | (74,545) | (93,497) | 42,813 | 184,134 | 297,353 | 401,364 | 458,854 | 505,544 | 542,767 | 555,811 |
| GAAP-EPS | 0.09 | (0.24) | (0.47) | (0.53) | (1.16) | (1.91) | (1.00) | (1.25) | 0.57 | 2.45 | 3.94 | 5.30 | 6.03 | 6.62 | 7.08 | 7.22 |
| GAAP-EPS (Dil) | 0.07 | (0.20) | (0.38) | (0.43) | (0.95) | (1.60) | (0.86) | (1.07) | 0.49 | 2.10 | 3.38 | 4.54 | 5.17 | 5.67 | 6.07 | 6.19 |
| Wgtd Avg Shrs (Bas) - '000s | 48,507 | 53,726 | 53,780 | 53,834 | 52,462 | 63,983 | 74,255 | 74,552 | 74,851 | 75,151 | 75,452 | 75,754 | 76,057 | 76,362 | 76,668 | 76,975 |
| Wgtd Avg Shrs (Dil) - '000s | 63,811 | 66,000 | 66,066 | 66,132 | 65,502 | 76,313 | 86,633 | 86,980 | 87,329 | 87,679 | 88,030 | 88,383 | 88,737 | 89,092 | 89,449 | 89,807 |

Source: Dawson James

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 their 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 party's patents.

Companies mentioned in this report:

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).

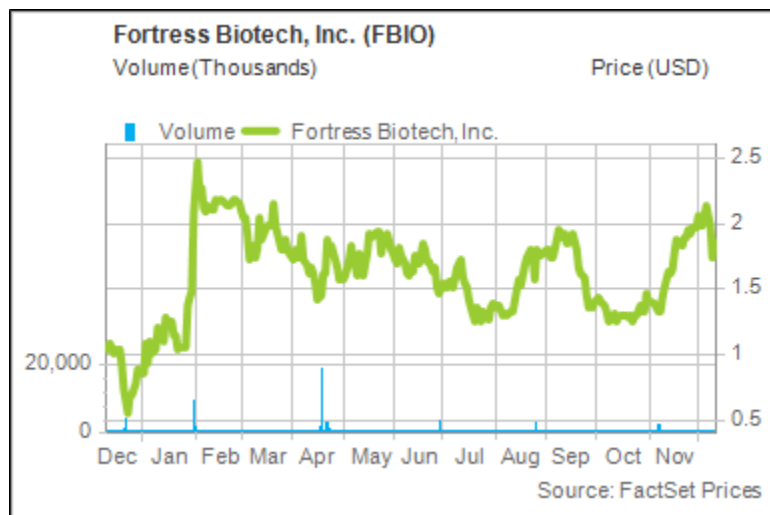
Journey Medical Corporation (internal Fortress company).

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

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Information about valuation methods and risks can be found in the “STOCK VALUATION” and “RISK FACTORS” sections of this report.

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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) | 24 | 89% | 3 | 13% |
| Market Perform (Neutral) | 3 | 11% | 0 | 0% |
| Market Underperform (Sell) | 0 | 0% | 0 | 0% |
| Total | 27 | 100% | 3 | 11% |

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.