

## US Biopharmaceuticals

## SMid Biotech 4Q23 Wraps: HOWL and ALVR

Estimate Change

We highlight updates—as well as our takes—from the following companies after their 4Q23 earnings. Our ratings remain the same, with our estimate changes discussed below:

**HOWL: Positive '24 setup overshadows solid earnings**

Although Werewolf's 4Q earnings were admittedly mixed, we were encouraged by a GAAP EPS loss of (\$0.33) that came in ahead of consensus (\$0.42) even as revenues missed (\$1.5M vs. \$4.6M, respectively)—demonstrating the team's disciplined spending. That said, we suspect focus remains on the company's clinical progress, where updates were understandably more limited. Sentiment on the name has continued to improve (YTD HOWL +59% vs. NBI flat) following last Nov's impressive presentation at SITC, which provided solid early support for the company's masking platform that has long kept us positive on the story (see [our final takes on the WTX-124 data](#)). That said, we still see opportunities for further upside near term, with Werewolf confirming plans to present additional interim dose escalation monotherapy and initial combo data from IL-2 INDUKINE '124 in 1H24 along with the first monotherapy updates from IL-12 INDUKINE '330 phase 1 in 2Q24. Given IL-2's established efficacy, we'd argue that further signs of '124's efficacy, absent any of the toxicities that have weighed use of the native molecule, would be very well received by investors—with positive early safety data from '330 similarly capable of driving a potential re-rating after previous attempts to leverage the potent T-cell/ macrophage activator were ultimately derailed by potent, systemic side effects. Following the print, we updated our model and now forecast 2024e EPS of (\$1.69) vs. (\$1.71) prior. Reiterate Buy and \$10 PO.

**ALVR: Lack of clarity still weighs; Reiterate U/P, \$1 PO**

In our view, AlloVir's 4Q print prompted more questions than answers. On the financial front, GAAP EPS missed consensus (-\$0.10), largely driven by a \$18.6M impairment cost associated with the wind-down of the three pivotal posoleucel trials last December. Likely of greater concern for investors, though, was the lack of any insight on why the studies were trending negative, as well as, more importantly, next steps for both the program and platform. Admittedly there've been few updates following the DSMB's December recommendation (see [our takes on the decision](#)), with the 2023 10K adding only that the company is continuing its review, leaving the timeline undefined. To be fair, we recognize the likely issues determining what went wrong, which beyond the approach/ molecule itself may well include frailty of allo-HCT recipients, the inherent complexities of transplants, and/or heterogeneity of practices among/ between centers. Regardless, with management conceding it's also looking at alternatives that include a possible merger, sale, or divestiture of assets, we think the uncertainty is likely to continue to weigh on the story over the near-term. Thus, despite laudable efforts to conserve capital in the meantime (the 95% workforce reduction initiated in January is expected to be largely complete by mid-April), we remain cautious on the near-term opportunity. After updating our model to incorporate the latest financials, we now forecast 2024e EPS of (\$0.49) vs. (\$0.45) prior. Reiterate Underperform and a \$1 PO.

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Equity  
United States  
Biopharmaceuticals

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**Abbreviations:****SITC:** Society for Immunotherapy of Cancer**DSMB:** Data and Safety Monitoring Board**IL-2:** interleukin-2**IL-12:** interleukin-12**allo-HCT:** allogeneic hematopoietic cell transplant

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# Model Update

We've updated our Werewolf and AlloVir models to reflect the 4Q print (Exhibit 1 and Exhibit 2, respectively).

## Exhibit 1: HOWL Model Changes for 2024E and 2025E

We've provided our model changes for 2024e and 2025e below

| \$ in millions (ex. per share items) | 2024E        |             | 2025E        |              |
|--------------------------------------|--------------|-------------|--------------|--------------|
|                                      | Prior        | Current     | Prior        | Current      |
| WTX-124                              | \$ -         | \$ -        | \$ -         | \$ -         |
| <b>Total Revenue</b>                 | <b>\$ 12</b> | <b>\$ 9</b> | <b>\$ 11</b> | <b>\$ 12</b> |

| \$ in millions (ex. per share items) | 2024E         |               | 2025E         |               |
|--------------------------------------|---------------|---------------|---------------|---------------|
|                                      | Prior         | Current       | Prior         | Current       |
| <b>Revenue</b>                       | <b>\$ 10</b>  | <b>\$ 9</b>   | <b>\$ 11</b>  | <b>\$ 12</b>  |
| COGS                                 | -             | -             | -             | -             |
| <b>Gross Profit</b>                  | <b>10</b>     | <b>9</b>      | <b>11</b>     | <b>12</b>     |
| R&D                                  | 66            | 61            | 76            | 79            |
| SG&A                                 | 23            | 21            | 26            | 25            |
| <b>Operating Income</b>              | <b>(79)</b>   | <b>(73)</b>   | <b>(91)</b>   | <b>(92)</b>   |
| Other income, net                    | 3             | 3             | 3             | 4             |
| Taxes                                | -             | -             | -             | -             |
| <b>GAAP Net Income</b>               | <b>(77)</b>   | <b>(69)</b>   | <b>(88)</b>   | <b>(88)</b>   |
| <b>GAAP EPS</b>                      | <b>(1.71)</b> | <b>(1.69)</b> | <b>(1.66)</b> | <b>(1.97)</b> |
| Shares Outstanding - Diluted         | 45            | 41            | 53            | 45            |

Source: BofA Global Research estimates

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## Exhibit 2: ALVR Model Changes for 2024E and 2025E

We've provided our model changes for 2024e and 2025e below

| \$ in millions (ex. per share items) | 2024E       |             | 2025E       |             |
|--------------------------------------|-------------|-------------|-------------|-------------|
|                                      | Prior       | Current     | Prior       | Current     |
| Net Product Sales                    | \$ -        | \$ -        | \$ -        | \$ -        |
| Other Revenue                        | -           | -           | -           | -           |
| <b>Total Revenue</b>                 | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> | <b>\$ -</b> |

| \$ in millions (ex. per share items) | 2024E         |               | 2025E         |               |
|--------------------------------------|---------------|---------------|---------------|---------------|
|                                      | Prior         | Current       | Prior         | Current       |
| <b>Revenue</b>                       | <b>\$ -</b>   | <b>\$ -</b>   | <b>\$ -</b>   | <b>\$ -</b>   |
| COGS                                 | -             | -             | -             | -             |
| <b>Gross Profit</b>                  | <b>(0.1)</b>  | <b>(0.1)</b>  | <b>0.0</b>    | <b>(0.0)</b>  |
| R&D                                  | 35            | 47            | 33            | 40            |
| SG&A                                 | 24            | 19            | 23            | 15            |
| <b>Operating Income</b>              | <b>(58)</b>   | <b>(66)</b>   | <b>(56)</b>   | <b>(55)</b>   |
| Income before income taxes           | (51)          | (56)          | (48)          | (44)          |
| Taxes                                | -             | -             | -             | -             |
| <b>GAAP Net Income</b>               | <b>(51)</b>   | <b>(56)</b>   | <b>(48)</b>   | <b>(44)</b>   |
| <b>GAAP EPS</b>                      | <b>(0.45)</b> | <b>(0.49)</b> | <b>(0.42)</b> | <b>(0.39)</b> |
| Shares Outstanding - Diluted         | 115           | 114           | 115           | 115           |

Source: BofA Global Research estimates

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## Price objective basis & risk

### AlloVir, Inc. (ALVR, \$0.7789, C-3-9)

Our 12-month price objective (PO) is based on our NPV analysis of revenue forecasts and estimated margin assumptions. We model posoleucel for treatment of BKV in kidney transplant patients (LOS 15%) starting globally in 2026. In addition, we assume a collective value for the pipeline. Given a WACC of 14%, in line with peers of similar size and risk, and a terminal growth rate between -10% and -12.5%, based on the development timeline, we estimate a value of \$1/ share PO, supporting our U/P rating.

Upside risks to our PO:

1) clear insights into posoleucel setbacks with an addressable near-term path forward, 2) robust activity of posoleucel in kidney transplant/ SOT, 3) success/ advancement of the early-stage pipeline, including ALVR106 and '1072, 4) favorable pricing/ commercial support from payers/ transplant centers, and 5) rapid uptake/ adoption

Downside risks to our PO:

1) lack of insight into posoleucel's phase 3s in allo-HSCT, 2) negative readthroughs to the SOT platform, 3) unsuccessful expansion into additional indications/ success of early-stage pipeline, 4) unfavorable pricing/ commercial support, 5) modest uptake/ adoption by transplant centers, and 6) competition from other anti-viral or cell therapy developers

### Werewolf Therapeutics (HOWL, \$6.14, C-1-9)

Our 12-month price objective (PO) is based on our NPV analysis of revenue forecasts and estimated margin assumptions. We model sales of WTX-124 (IL-2 INDUKINE) in metastatic melanoma and RCC modified by a risk-adjusted likelihood of success of 25%. We also assume a collective value for the pipeline, which includes sales of '124 in other tumor types and potential revenues for WTX-330 (IL-12) and WTX-630 (IFN-a). Given a WACC of 12%, in line with peers of similar size and risk, and a terminal growth rate of -5%, we estimate a value of \$3/sh for WTX-124, \$4/sh for net cash, and \$3/sh for the pipeline, resulting in \$10/sh PO.

Upside risks: 1) validation of clinical synergies between CPIs and cytokines, 2) clear early signals of efficacy of WTX-124 in melanoma and RCC with good tolerability, 3) similar robust signals from the pipeline (i.e., '330 and '613), 4) collaboration deals with established oncology players, 5) accelerated regulatory timelines, and 6) strong commercial support from payers and prescribers

Downside risks: 1) clinical trial failures of the pipeline, especially due to issues with the platform, 2) meaningful safety risks, posing regulatory and/or commercial headwinds, 3) limited signs of synergistic efficacy when paired with established oncology treatments, 4) regulatory delays, 5) competition from other modified cytokines, 6) financial risks due to available cash to fund activities, and 7) commercial pushback from payers and providers

## Analyst Certification

I, Jason Zemansky, hereby certify that the views expressed in this research report accurately reflect my personal views about the subject securities and issuers. I also certify that no part of my compensation was, is, or will be, directly or indirectly, related to the specific recommendations or view expressed in this research report.

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|---------------------|---------------------------------|-------------|------------------|--------------------|
| <b>BUY</b>          |                                 |             |                  |                    |
|                     | 89bio, Inc                      | ETNB        | ETNB US          | Geoff Meacham      |
|                     | Acumen Pharma                   | ABOS        | ABOS US          | Geoff Meacham      |
|                     | Agios Pharmaceuticals           | AGIO        | AGIO US          | Greg Harrison, CFA |
|                     | BioMarin                        | BMRN        | BMRN US          | Geoff Meacham      |
|                     | BioXcel Therapeutics            | BTAI        | BTAI US          | Greg Harrison, CFA |
|                     | BridgeBio Pharma                | BBIO        | BBIO US          | Greg Harrison, CFA |
|                     | Caribou                         | CRBU        | CRBU US          | Geoff Meacham      |
|                     | CRISPR Therapeutics             | CRSP        | CRSP US          | Geoff Meacham      |
|                     | Eli Lilly and Company           | LLY         | LLY US           | Geoff Meacham      |
|                     | Gilead Sciences Inc.            | GILD        | GILD US          | Geoff Meacham      |
|                     | HUTCHMED                        | HCM         | HCM US           | Alec W. Stranahan  |
|                     | Immatics                        | IMTX        | IMTX US          | Alec W. Stranahan  |
|                     | Insmed Incorporated             | INSM        | INSM US          | Jason Zemansky     |
|                     | Intellia Therapeutics           | NTLA        | NTLA US          | Greg Harrison, CFA |
|                     | Janux Therapeutics              | JANX        | JANX US          | Alec W. Stranahan  |
|                     | Keros                           | KROS        | KROS US          | Greg Harrison, CFA |
|                     | Kiniksa Pharmaceuticals, Ltd.   | KNSA        | KNSA US          | Geoff Meacham      |
|                     | Krystal Biotech                 | KRYS        | KRYS US          | Alec W. Stranahan  |
|                     | Kura Oncology                   | KURA        | KURA US          | Jason Zemansky     |
|                     | Liquidia Corporation            | LQDA        | LQDA US          | Greg Harrison, CFA |
|                     | Lyell Immunopharma              | LYEL        | LYEL US          | Geoff Meacham      |
|                     | MeiraGTx                        | MGTX        | MGTX US          | Alec W. Stranahan  |
|                     | Merck & Co.                     | MRK         | MRK US           | Geoff Meacham      |
|                     | Mineralys Therapeutics          | MLYS        | MLYS US          | Greg Harrison, CFA |
|                     | Neumora Therapeutics            | NMRA        | NMRA US          | Geoff Meacham      |
|                     | Regenxbio, Inc.                 | RGNX        | RGNX US          | Alec W. Stranahan  |
|                     | Revolution Medicines            | RVMD        | RVMD US          | Alec W. Stranahan  |
|                     | Rocket Pharmaceuticals, Inc.    | RCKT        | RCKT US          | Greg Harrison, CFA |
|                     | Royalty Pharma                  | RPRX        | RPRX US          | Geoff Meacham      |
|                     | Sana Biotechnology              | SANA        | SANA US          | Geoff Meacham      |
|                     | SpringWorks                     | SWTX        | SWTX US          | Alec W. Stranahan  |
|                     | Syndax Pharmaceuticals          | SNDX        | SNDX US          | Jason Zemansky     |
|                     | Traverse Therapeutics Inc       | TVTX        | TVTX US          | Greg Harrison, CFA |
|                     | Turnstone Biologics             | TSBX        | TSBX US          | Geoff Meacham      |
|                     | Vertex Pharmaceuticals Inc.     | VRTX        | VRTX US          | Geoff Meacham      |
|                     | Werewolf Therapeutics           | HOWL        | HOWL US          | Jason Zemansky     |
|                     | Xencor                          | XNCR        | XNCR US          | Alec W. Stranahan  |
| <b>NEUTRAL</b>      |                                 |             |                  |                    |
|                     | AbbVie                          | ABBV        | ABBV US          | Geoff Meacham      |
|                     | Alector, Inc                    | ALEC        | ALEC US          | Greg Harrison, CFA |
|                     | Amgen Inc.                      | AMGN        | AMGN US          | Geoff Meacham      |
|                     | Amylyx Pharmaceuticals          | AMLX        | AMLX US          | Geoff Meacham      |
|                     | Arcus Biosciences               | RCUS        | RCUS US          | Jason Zemansky     |
|                     | Beam Therapeutics               | BEAM        | BEAM US          | Greg Harrison, CFA |
|                     | Biogen Inc.                     | BIIB        | BIIB US          | Geoff Meacham      |
|                     | Bristol-Myers Squibb            | BMJ         | BMJ US           | Geoff Meacham      |
|                     | Cytokinetics, Incorporated      | CYTK        | CYTK US          | Jason Zemansky     |
|                     | Editas Medicine                 | EDIT        | EDIT US          | Greg Harrison, CFA |
|                     | Erasca                          | ERAS        | ERAS US          | Alec W. Stranahan  |
|                     | Esperion                        | ESPR        | ESPR US          | Jason Zemansky     |
|                     | Exscientia                      | EXAI        | EXAI US          | Alec W. Stranahan  |
|                     | IGM Biosciences                 | IGMS        | IGMS US          | Greg Harrison, CFA |
|                     | Johnson & Johnson               | JNJ         | JNJ US           | Geoff Meacham      |
|                     | Kymera Therapeutics             | KYMR        | KYMR US          | Geoff Meacham      |
|                     | Moderna                         | MRNA        | MRNA US          | Geoff Meacham      |
|                     | Pfizer                          | PFE         | PFE US           | Geoff Meacham      |
|                     | Recursion Pharmaceuticals, Inc. | RXR         | RXR US           | Alec W. Stranahan  |
|                     | Tyra Biosciences                | TYRA        | TYRA US          | Greg Harrison, CFA |
|                     | Vir                             | VIR         | VIR US           | Alec W. Stranahan  |
|                     | Y-mAbs Therapeutics, Inc        | YMAB        | YMAB US          | Alec W. Stranahan  |
| <b>UNDERPERFORM</b> |                                 |             |                  |                    |
|                     | AlloVir, Inc.                   | ALVR        | ALVR US          | Jason Zemansky     |
|                     | CureVac                         | CVAC        | CVAC US          | Geoff Meacham      |

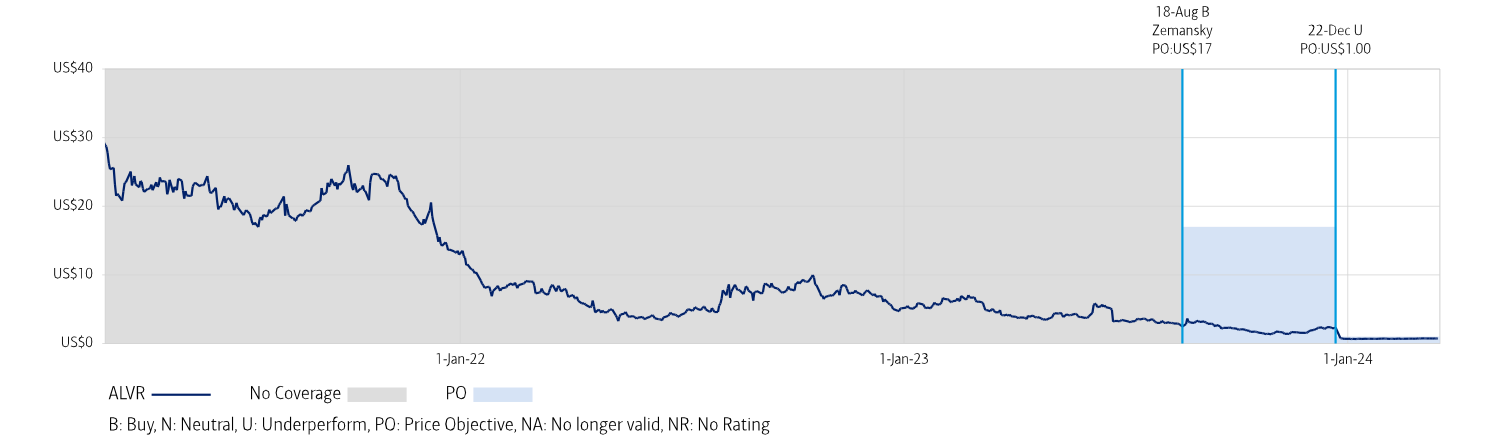
US - Biopharmaceuticals Coverage Cluster

| Investment rating | Company                         | BofA Ticker | Bloomberg symbol | Analyst            |
|-------------------|---------------------------------|-------------|------------------|--------------------|
|                   | Day One Biopharmaceuticals      | DAWN        | DAWN US          | Alec W. Stranahan  |
|                   | Novavax                         | NVAX        | NVAX US          | Alec W. Stranahan  |
|                   | Regeneron Pharmaceuticals Inc.  | REGN        | REGN US          | Geoff Meacham      |
|                   | Reneo Pharmaceuticals           | RPHM        | RPHM US          | Jason Zemansky     |
|                   | TG Therapeutics                 | TGTX        | TGTX US          | Alec W. Stranahan  |
|                   | United Therapeutics Corporation | UTHR        | UTHR US          | Greg Harrison, CFA |

Disclosures

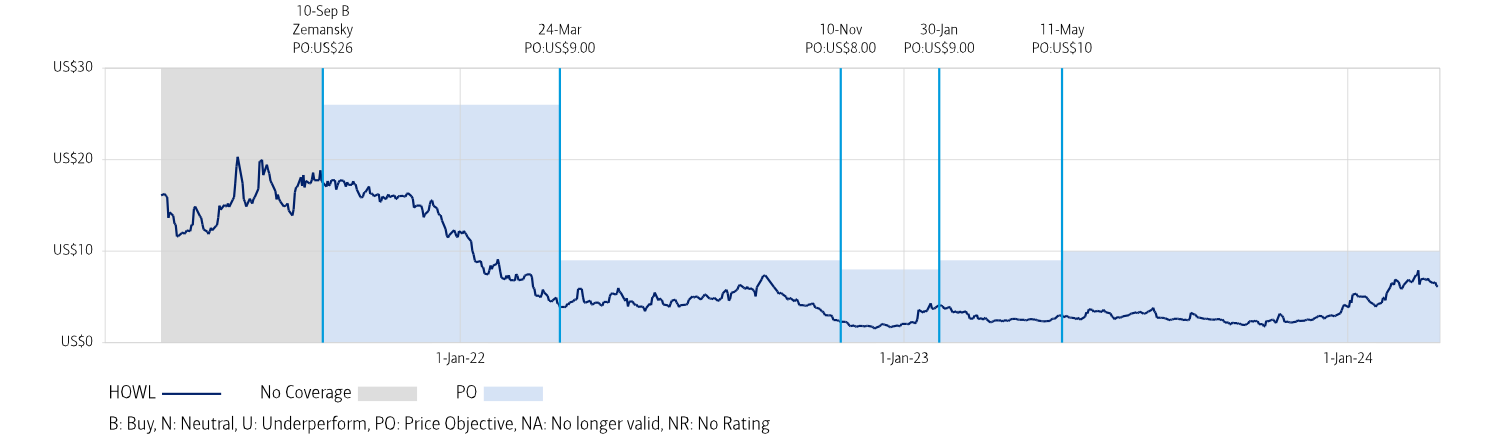
Important Disclosures

AlloVir (ALVR) Price Chart



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Werewolf Therap. (HOWL) Price Chart



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**Equity Investment Rating Distribution: Health Care Group (as of 31 Dec 2023)**

| Coverage Universe | Count | Percent | Inv. Banking Relationships <sup>R1</sup> | Count | Percent |
|-------------------|-------|---------|--|-------|---------|
| Buy               | 234   | 60.94%  | Buy                                      | 115   | 49.15%  |
| Hold              | 80    | 20.83%  | Hold                                     | 36    | 45.00%  |
| Sell              | 70    | 18.23%  | Sell                                     | 29    | 41.43%  |

**Equity Investment Rating Distribution: Global Group (as of 31 Dec 2023)**

| Coverage Universe | Count | Percent | Inv. Banking Relationships <sup>R1</sup> | Count | Percent |
|-------------------|-------|---------|--|-------|---------|
| Buy               | 1895  | 53.62%  | Buy                                      | 1083  | 57.15%  |
| Hold              | 832   | 23.54%  | Hold                                     | 454   | 54.57%  |
| Sell              | 807   | 22.84%  | Sell                                     | 383   | 47.46%  |

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|-------------------|---|--|
| Buy               | ≥ 10%   | ≤ 70%  |
| Neutral           | ≥ 0%  | ≤ 30%  |
| Underperform      | N/A   | ≥ 20%  |

<sup>R2</sup> Ratings dispersions may vary from time to time where BofA Global Research believes it better reflects the investment prospects of stocks in a Coverage Cluster.

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