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Biotechnology

4Q23 SMid-cap Biotech Earnings Preview

Earnings Preview

Setting expectations ahead of 4Q23 earnings

We highlight our expectations ahead of 4Q earnings results for our covered commercial names. We note several companies in our coverage have preannounced 4Q and FY23 revenues including ALNY, APLS, ARGX, ASND, BCRX, FOLD, PTCT, RARE and SRPT.

Acadia Pharma (ACAD, Neutral, $33 PO) continues to monitor Daybue launch performance in RS. For 4Q, we estimate Daybue sales of $93.1mn, ahead of company guidance ($80-87.5mn) given positive feedback from our KOLs on current usage trends. On Nuplazid, we model 4Q sales of $135.5mn and look for commentary regarding key future growth drivers for the franchise. We maintain our Neutral with $33 PO.

BioNTech (BNTX, Buy, $159 PO) will report out 4Q and FY23 revenue guidance. We model 4Q COVID revenues of €1.6bn, in line with company guidance. Mgmt has already guided to FY24 revenues of €3bn (BofAe: €2.5bn). We look for updated commentary regarding vaccine uptake in 2024+ as well as updates on their pipeline programs. We maintain our Buy with $159 PO.

Incyte (INCY, Neutral, $69 PO) maintains focus on ensuring strong commercial execution despite GTN headwinds. In the 4Q earnings call, we look for updates on launch performance metrics focusing on current expectations for long-term Opzelura GTN dynamics. For 4Q, we model Jakafi and Opzelura revenues of $702mn and $203mn, respectively. We reiterate our Buy with $69 PO.

Neurocrine (NBIX, Buy, $154 PO) remains focused on ensuring a strong launch for Ingrezza launch in TD. We model $499mn in 4Q sales and look for FY24 guidance for the Ingrezza franchise during the 4Q call. We also note focus on updated timelines regarding a potential NDA filing for crinecerfont in CAH. We maintain our Buy with $154 PO.

Rhythm Pharmaceuticals (RYTM, Buy, $49 PO) continues to progress their Imcivree launch in rare obesity. Mgmt does not expect to provide FY24 guidance, citing the highly dynamic nature of rare disease launches. We look for updated commentary regarding current payer dynamics given our KOLs have highlighted access issues for their patients. We model 4Q Imcivree revenue of $25.5mn. We maintain our Buy with $49 PO.

Sage Therapeutics (SAGE, Neutral, $30 PO) is focused on launching Zurzuvae in PPD, having recently launched in mid-December 2023. As such, we look for company commentary regarding initial launch metrics focusing on early adopters as well as early payer dynamics. We model 4Q sales of $2.3mn (cons: $1.6mn). We maintain our Neutral with $30 PO.

See more inside on these and **ALNY, APLS, ARGX, ASND, BCRX, FOLD, PTCT, RARE,** and **SRPT**. See Exhibit 2 for a summary of key changes.

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Abbreviations

BET: Bromodomain and Extra-Terminal
CAH: congenital adrenal hyperplasia
GTN: gross-to-net
HAE: hereditary angioedema
HD: Huntington's disease
KOL: key opinion leader
Mgmt: management
NDA: new drug application
PPD: post-partum depression
RS: Rett syndrome
TD: tardive dyskinesia

See Exhibit 2 on page 9 for estimate changes

ACAD: Long-term commercial oppy still needs de-risking

Acadia Pharmaceuticals (ACAD, Neutral, $33 PO) reported strong 3Q Daybue revenue of $66.9mn and provided 4Q revenue guidance of $80-87.5mn, which we think they are likely to beat. We currently model 4Q Daybue revenue of $93.1mn given positive feedback from our KOLs on current usage trends (see our Daybue survey). We highlight that our focus for the Daybue franchise continues to be on long-term persistence. Our KOLs estimate that roughly 50% of patients on Daybue discontinue due to lack of efficacy with the other 50% due to adverse events such as diarrhea and vomiting. Given our KOLs also highlighted they will trial Daybue efficacy for six months, we assume most of the reported discontinuations to-date are due to adverse events. As such, we note higher focus on 1H24 launch metric trends as more patients hit the six-months treatment mark (launched in April 2023) to help determine long-term Daybue opportunity. Likewise, mgmt is cognizant that the long-term opportunity for Daybue has yet to be de-risked and expects to continue to only provide only revenue guidance on a quarterly basis. We expect an upcoming slowdown of growth and conservatively estimate FY24 Daybue revenue of $318mn. On Nuplazid, ACAD reported 3Q revenue of $144.8mn, noting the franchise continues to be cash flow positive. Mgmt guides to prioritizing cash flow with plans to leverage the bottom line by minimizing future SG&A spending. Furthermore, given the maturity of the Nuplazid launch (approved in 2016), we look for color on key growth drivers for the franchise in the upcoming 4Q23 earnings call. We currently model 4Q23 and FY24 Nuplazid revenue of $135.5mn and $569mn, respectively. We maintain our Neutral with same $33 PO given our view that long-term opportunity for the company's commercial franchises has yet to be de-risked.

Other focuses for the earnings call include: (1) expectations for the topline results of the phase 3 ADVANCE-2 trial evaluating pimavanserin for negative symptoms of schizophrenia (NSOS) expected in 1Q. If positive, management guides to submitting a supplemental new drug application (sNDA) later in the year; (2) regulatory feedback on Daybue approval paths in ex-US territories; and (3) updates on ongoing Prader-Willi syndrome and Alzheimer's disease psychosis trials.

ALNY: All eyes on HELIOS-B readout in March/April

Alnylam pharmaceuticals (ALNY, Buy, $246 PO) pre-announced 4Q revenues for Onpattro of $79mn (-3% q/q), Amvuttra of $175mn (+18% q/q), Givlaari of $59mn (+9% q/q) and Oxlumo of $33mn (+16% q/q). The company has highlighted the strong commercial performance of the transthyretin amyloidosis (ATTR) with ~40% growth in 2023 and has noted the strong commercial uptake of Amvuttra since the launch, which they expect to continue into 2024. Management has commented they anticipate Onpattro 2024 revenues of $200-225mn, as they expect continued cannibalization from Amvuttra in ATTR polyneuropathy. On the earnings call, we will look for additional color on these dynamics in 2024 as well as revenue guidance for the year. We highlight near-term focus remains on the highly anticipated readout of the phase 3 HELIOS-B trial evaluating vutrisiran in ATTR cardiomyopathy expected in March/April. We view vutrisiran in ATTR-CM as the largest value driver for the company. We model $3.9bn in risk-peak sales in ATTR-CM. We maintain our Buy rating with $246 PO.

We note the readout for the phase 2 KARDIA-2 trial evaluating zilebesiran in combination with a single agent in hypertension is also expected in early-24. The company also plans to initiate KARDIA-3 evaluating zile' with 2+ background medications in early-24. Additional near-term catalysts include: (1) supplemental new drug application (sNDA) submission for vutrisiran in ATTR-CM in mid-24; (2) initiation of phase 3 study of ALN-TTRsc04 in ATTR-CM in late-24; (3) interim phase 1b multi-dose results for ALN-APP in Alzheimer's disease (AD) in late-24; (4) initiating phase 2 studies of ALN-APP in cerebral amyloid angiopathy (CAA) and AD in early and late-24, respectively; (5) initiating phase 1b study of ALN-KHK in type 2 diabetes in early-24; (6) initiating phase 1 study of ALN-BCAT in hepatocellular carcinoma in early-24; and (7) filing three new INDs in additional programs by late-24.

APLS: Focus on competitive dynamics and EU re-examination

Apellis (APLS, Buy, $77 PO) pre-announced 4Q23 revenues for Syfovre of $114mn (+52% q/q) and for Empaveli of $24mn (+1% q/q). The company noted ~62K vials of Syfovre were distributed in 4Q and a total of ~160K vials were distributed in 2023. APLS recently reported the Committee for Medicinal Products for Human Use (CHMP) adopted a negative opinion on the EU application, which was in line with expectations after the oral examination meeting in December (see our Jan 26 note). We will continue to look for color on the appeal process and expectations ahead of the decision on the re-examination expected at the April 22-25th CHMP meeting with a final European commission decision expected in July. However, we reiterate our view that the US opportunity remains the key driver of value, representing $3.2bn of our $3.6bn worldwide risk-adjusted peak sales estimate. On the earnings call, we will look for color on expectations for the cadence of the launch in 2024, including competitive dynamics in the GA treatment landscape. We will focus on how use of Izervay and Syfovre evolves after the permanent J-code for Izervay comes in place in April. Our key opinion leaders (KOLs) have highlighted Syfovre has significant first-to-market advantage but have noted the permanent J-code will facilitate access to Izervay, which could increase use, as this has been an issue so far. Importantly, our KOLs noted they are not planning to switch patients from Syfovre at this point and have continued to start new patients on Syfovre while also gradually increasing use of Izervay. Overall, we think physicians have become comfortable with Syfovre's risk/benefit profile and remain focused on the safety profile of Izervay as use increases. APLS also expects to report topline data from the phase 3 VALIANT study of pegcetacoplan in complement 3 glomerulopathy (C3G) and Immune Complex Membranoproliferative Glomerulonephritis (IC-MPGN) in mid-24, which could expand the commercial opportunity for Empaveli. We are encouraged by strong momentum of the Syfovre launch with clear signs of strong demand and reiterate our view that the GA market is large enough to support multiple participants. We maintain our Buy rating with $77 PO.

ARGX: CIDP launch expected in mid-24

Argenx (ARGX, Buy, $557 PO) pre-announced preliminary FY23 Vyvgart revenues of $1.2bn (+197% y/y). Management highlighted continued geographic expansion of the Vyvgart franchise as well as moving into earlier lines of treatment in generalized myasthenia gravis (gMG) as key drivers of growth in 2024. Additionally, the company expects a regulatory decision for the supplemental biologics license application (sBLA) for Vyvgart Hytrulo in chronic inflammatory demyelinating polyneuropathy (CIDP) in mid-24. Given several uncertain factors in 2024, management has commented they do not plan to provide revenue guidance at this point. On the earnings call, we will look for color on uptake of Vyvgart Hytrulo and expectations for the dynamics of the intravenous and subcutaneous formulations as well as expectations for the potential launch in CIDP in 2024. We note the company plans to provide an update on the development of a prefilled syringe for the subcutaneous formulation, which could allow for self-administration, in 1H and is also working on developing a self-injector. We remain encouraged by the strong commercial uptake for Vyvgart with signs of continued strong momentum two years after the launch. We reiterate ARGX as one of our top picks for 2024, as we think the commercial opportunity in gMG and CIDP is currently undervalued and we see additional room for upside from several pipeline readouts in 2024. We maintain our Buy with $557 PO.

On the call, we will also look for additional commentary on expectations for the phase 2 proof-of-concept readouts for efgartigimod in Sjogren's syndrome (1H), post-COVID postural orthostatic tachycardia syndrome (PC-POTS) (1H) and myositis (three subsets in 2H) (see January 26th note for more details). Additional catalysts for the company include: (1) full phase 2 data for empasiprubart in multifocal motor neuropathy (MMN) in 2024; (2) regulatory decisions for Vyvgart in gMG in Switzerland, Australia, Saudi Arabia and South Kores by YE; (3) regulatory decision for Vyvgart in immune thrombocytopenia

and for Vyvgart Hytrulo in gMG in Japan in 1Q; (4) regulatory submissions for subcutaneous efgartigimod in Japan, Europe, Canada and China by YE; (5) initiation of phase 1b/2a trials for ARGX-119 in congenital myasthenic syndrome (CMS) and amyotrophic lateral sclerosis (ALS) in 2024; and (6) initiation of a trial in seronegative patients for Vyvgart in gMG.

ASND: All eyes on May 14th TransCon PTH PDUFA

Ascendis Pharma (ASND, Buy, $156 PO) preannounced strong preliminary 4Q23 Skytrofa revenue of €64mn (+33% q/q) and guided to FY24 Skytrofa revenue of €320-340mn (BofAe: €325mn). We continue to be impressed by the performance of the Skytrofa launch, which we think reads positively for a launch in their second indication, hypoparathyroidism (HPT). Recall, the company announced they launched Yorvipath in Germany and Austria in January using their existing Skytrofa salesforce. On the 4Q call, we look for color on management expectations regarding the initial EU launch as well as timeline guidance for planned launches in other EU territories. Additionally, we look for color on US launch plans for TransCon PTH as we approach its prescription drug user fee act (PDUFA) date of May 14th. Management has previously commented that if positive, they will be ready to begin a US commercial launch six weeks after approval (likely early-July). We note 100% of our KOLs view a US approval as likely and anticipate ~32% of their patients to be on therapy within the first six months of launch (see our TransCon PTH survey). We currently assume an 80% likelihood-of-success for US approval and model modest FY24 risk-adjusted sales of €53.4mn (cons: €81mn) given our view that initial payer dynamics may be gating to uptake. On long-term opportunity, ASND has highlighted that the HPT opportunity could be 4-5x the size of growth hormone disease. We model peak risk-adjusted sales of €1.9bn in 2033. We maintain our Buy rating with $156 PO ahead of the upcoming TransCon HPT May 14th PDUFA.

Other focuses for the 4Q call include: (1) color on plans to partner out their TransCon rights in obesity; (2) updates on planned sBLA (supplementary Biologics License Application) submission for Skytrofa in adult growth hormone deficient patients in 2Q; (3) expectations for several 4Q data readouts including phase 3 ApproaCH topline results evaluating TransCon CNP in achondroplasia, phase 3 topline results evaluating TransCon hGH in Turner syndrome and week-26 topline data from the COACH trial (TransCon hGH / TransCon CNP combination); (4) clinical updates on their oncology franchise; and (5) commentary on expectations for recent spinout ophthalmology company, Eyconis.

BCRX: FY24 Orladeyo y/y growth of 17-23%

Biocryst Pharmaceuticals (BCRX, Buy, $11 PO) reported preliminary FY23 Orladeyo revenue of $325mn (+29% y/y) and expects to exit 2023 with ~1,050 patients on therapy with 73% on paid drug. For 2024, management guides to revenue of $380-400mn (+17-23% y/y; ours: $390mn). The company has provided a clear track to $800mn in US sales by 2029, expecting linear growth with ~200 annual net patients added from 2024-2029, improving proportion of patients on paid drug to 85%, as well as taking several modest price increases. We recently caught up with management who highlighted this outlook assumes impact from competitors' therapies entering the market such as Pharvaris (ticker: PHVS) and Ionis Pharmaceuticals (ticker: IONS; covered by BofA Global Research analyst Jason Gerberry). BCRX noted that the HAE market is sticky given patients are unlikely to switch therapies once they find something that works for them, which should provide market share protection from competitors entering the space. Additionally, management was clear that they still believe $1bn in peak sales is reachable beyond 2029, noting Orladeyo composition of matter patents extend out to 2039. In our view, the $1bn peak sales estimate still needs additional validation for future sales trends, especially as competitors enter the space. As such, we currently model peak sales of $692mn in 2029 and look for updated management commentary on the long-term Orladeyo opportunity during the 4Q call. On pipeline, we highlight the recent R&D Analyst Day where management unveiled five new early-stage programs. On the 4Q call, we look for clarity on program timelines as well as

expectations for future proof-of-concept data readouts. Given pipeline is still early stage, we assign a $1bn pipeline plug and await proof-of-concept data before breaking out stand-alone program value. We note Orladeyo continues to be the main driver to our valuation, contributing $12/sh to our PO. We maintain our Buy rating with $11 PO.

BNTX: Oncology pipeline expansion focus in 2024

BioNTech (BNTX, Buy, $159 PO) reported 3Q23 COVID revenues of €894mn and updated its FY23 revenue guidance to €4bn. We model 4Q COVID revenues of €1.6bn (FY23: €3.97bn, 4Q cons: €1.9bn) in line with company guidance. The company also provided FY24 guidance of €3bn. We currently model €2.5bn (cons: €3.3bn). On the earnings call, we will look for color on expectations for vaccine uptake in 2024 as well as visibility on the mid- and long-term outlook for the COVID franchise. While we assume conservative uptake near-term, we reiterate our view that the potential for combination vaccines with other respiratory viruses including flu will likely be a key a driver of long-term uptake and provide steady COVID revenues. We also await further color on updates for the oncology pipeline as the pipeline continues to mature. Recall, the company has highlighted their focus on expanding the oncology franchise with several late-stage trials to support potential launches starting in 2026. In our view, there is potential from additional upside at the current valuation. We maintain our Buy rating with $159 PO.

Key data catalysts in 2024 include: (1) phase 2 data for BNT311 (anti-PD-L1/4-1BB bispecific) +/- pembrolizumab in relapsed refractory metastatic non-small cell lung cancer; (2) phase 1/2 expansion cohort data for BNT312 (anti-CD40/4-1BB bispecific), BNT316 (anti-CTLA-4) and BNT323 (anti-HER2) in multiple solid tumors. The company recently announced the phase 3 trial of BNT323 in metastatic breast cancer has initiated and is expected to enroll 532 patients; (3) phase 1/2 data for BNT325 (anti-TROP2) in multiple solid tumors; (4) phase 2 data for BNT327 (anti-PD-L1/VEGF bispecific) in multiple solid tumors. The company highlighted phase 2 data for BNT327 in combination with nab-paclitaxel in 1L triple negative breast cancer showing 78.6% objective response rate; (5) phase 2/3 data for Omicron XBB.1.5 monovalent vaccine; and (6) an update on the phase 1 trial of BNT167 (Shingles vaccine). Management commented that an update on the ongoing trial of BNT122 (iNeST) in colorectal cancer is expected in 2025.

FOLD: Looking for color on P&O launch dynamics

Amicus Therapeutics (FOLD, Buy $19 PO) preannounced FY23 revenues for Galafold of ~$387.8mn and Pombiliti+Opfolda (P&O) of ~$11.6mn. The company also provided FY24 guidance for Galafold of 11-16% growth at constant exchange rate. We currently model $439mn (+13% y/y) in Galafold revenues in 2024. On the call, we will look for additional color on the factors driving 2024 revenue to the low and high end of the guidance and expectations for the Fabry market dynamics. We will also focus on initial metrics of the P&O launch in late-onset Pompe disease, including initial uptake following transition of clinical trial and early access program patients in the US and EU, and the split between treatment-naïve and switch patients. We are encouraged by the continued growth of Galafold and strong positive metrics for the P&O launch. We maintain our Buy with $19 PO.

INCY: Awaiting FY24 revenue guidance

Incyte (INCY, Neutral, $69 PO) reported 3Q Jakafi revenue of $636mn, citing inventory channel fluctuations impacting 3Q and Opzelura revenue of $92mn. The company tightened the FY23 guidance for Jakafi to $2.59-2.62bn. Management reported continued high Medicaid utilization volume impacting Opzelura revenues with gross-to-net (GTN) in 3Q at 54% and noted they expect it to remain around 55%. We continue to look for clarity on GTN dynamics in 2024 and long term for Opzelura. For 4Q, we model Jakafi revenue of $702mn (+10% q/q, cons: $697mn) and Opzelura revenue of $103mn (+12% q/q, cons: $104mn). See our estimates for INCY's additional products in Exhibit 2Exhibit 2 below.

Exhibit 1: INCY 4Q23 revenue estimates vs consensus
Summary of 4Q23 estimates

Name	3Q23A	4Q23E	q/q %	Consensus 4Q23
Jakafi	$636mm	$702mm	10.3%	$636mm
Opzelura	$92mm	$103mm	11.8%	$92mm
Jakavi (Royalties)	$97mm	$100mm	3.9%	$97mm
Iclusig	$28mm	$28mm	-0.1%	$28mm
Pemazyre	$19mm	$23mm	20.7%	$20mm
Olumiant (Royalties)	$30mm	$33mm	10.2%	$30mm
Tabrecta (Royalties)	$4mm	$6mm	55.9%	$6mm

Source: BofA Global Research estimates, Bloomberg

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On the 4Q earnings call, we will focus on: (1) FY24 revenue guidance for Jakafi and expectations for competitive dynamics in myelofibrosis following the approval of Ojjaara (momelotinib); (2) color on dynamics of the launch of Opzelura in atopic dermatitis and vitiligo and real-world utilization metrics. We remain focused on commentary on gross-to-net dynamics in 2024. The company is planning to submit a supplemental new drug application for Opzelura in pediatric atopic dermatitis in mid-24 and we will look for color on the potential commercial opportunity; and (3) the company recently highlighted focus on axatilimab with an expected approval in 3L+ chronic graft-vs-host disease (cGVHD) in 2024. INCY is also planning to initiate a phase 3 trial for axa' in combination with steroids and phase 2 trial in combination with ruxolitinib both in 1L cGVHD in 2024. Additional catalysts include: (1) initiate a phase 3 trial for BET inhibitor in combination with rux' in 2H; (3) provide proof of concept data for zilurgisertib in combination with rux' by mid-24; and (4) initiate a phase 1 study for the next generation JAK inhibitor, JAK2V617F, in 1Q. We continue to look for clarity on the long-term opportunity for Opzelura and potential to expand the commercial opportunity for Jakafi.

In our DCF-based model, we roll the quarter and adjust our revenue estimates for the hematology/oncology pipeline in-line with company guidance of $215-225mn. We also tweak our operating expense estimates based on recent trends.

NBIX: Expecting FY24 revenue guidance for Ingrezza

Neurocrine (NBIX, Buy, $154 PO) reported 3Q Ingrezza revenue of $486mn and raised the FY23 revenue guidance to $1.82-1.84bn. We model 4Q Ingrezza revenues of $499mn (cons: $504mn) and FY23 revenues of $1.83bn. We look for FY24 guidance including expectations for growth in tardive dyskinesia and the cadence of the launch in chorea associated with Huntington's disease. Management has commented chorea would have a modest contribution in 2023, but they expect a bigger marketing push in 2024 will help drive uptake. We remain encouraged by the strong commercial performance of Ingrezza and highlight near-term focus will be on the commercial opportunity in congenital adrenal hyperplasia (CAH) and timelines for the new drug application (NDA) filing expected in 2024. We maintain our Buy with $154 PO.

On the 4Q earnings call, we will look for additional color on expectations for the phase 2 readout of NBI-1117568 (M4 agonist) in schizophrenia in 2H. We note the company recently highlighted the muscarinic targeting portfolio including several different mechanisms of action, which we view as an attractive commercial opportunity given strong clinical validation and potential in several large neuropsychiatric indications. Additional data catalysts for the company include: (1) phase 2 data for NBI-1065845 in inadequate response in major depressive disorder in 1H; (2) phase 2 data for luvadaxistat in cognitive impairment associated with schizophrenia in 2H; and (3) phase 2 data for Efmody in adrenal insufficiency and CAH in 1H.

PTCT: Clarity needed on 2024 commercial outlook

PTC Therapeutics (PTCT, Underperform, $15 PO) preannounced total net revenues of $946mn (+35% y/y) highlighting FY23 Translarna, Emflaza and Evrysdi unaudited revenues of $355mn, $255mn and $278mn, respectively. For FY24, the company provided broad revenue guidance of $600-850mn depending on the outcome of the

Translarna CHMP reexamination for EU conditional approval. Given the CHMP decided to maintain their negative opinion (see our January 26th note), we look for an updated commercial outlook on the 4Q earnings call. PTCT expects official EC ratification 67-days after the final decision (likely early-April) with subsequent Translarna removal from the EU markets. Management has previously highlighted that EU revenues account for roughly 45-48% of revenues but approval renewals in other territories like South Korea, Israel and Chile are likely dependent on EU approval, which would put these revenues also at risk. We look for clarity on the timing of these renewals as well as their relative revenue contribution. We maintain our Underperform with $15 PO given the current shaky outlook for the company's commercial franchises and our continued view that pipeline programs still need de-risking.

Other focuses for the 4Q earnings call include: (1) color on expected impact of Emflaza loss of exclusivity in February; (2) updates on regulatory filing process for sepiapterin in phenylketonuria. PTCT last guided to submitting the marketing authorization application to the European Medicines Agency in 1Q and expects to submit a new drug application to the FDA no later than 3Q; (3) FDA feedback on a potential approval paths for Translarna in Duchenne muscular dystrophy and vatiquinone in Friedrich ataxia; (4) expectations for the interim 12-month data for the PIVOT-HD trial evaluating PTC518 in Huntington's disease in 2Q and the topline results for the phase 2 CardinALS trial evaluating utreloxastat in amyotrophic lateral sclerosis in 4Q; and (5) updates on the planned 1Q biologics license application submission for Upstaza for the treatment of aromatic L-amino acid decarboxylase deficiency.

RARE: Focus on late-stage pipeline catalysts in 2024

Ultragenyx (RARE, Buy, $85 PO) preannounced FY23 results and provided sales guidance for 2024. The company reported preliminary 2023 total product revenue of $430-435mn with Crysvita revenue of $325-330mn (+17% y/y) and Dojolvi revenue of $70-71mn (+27% y/y). For 2024, the company guided to $500-530mn in total product revenue with Crysvita revenue guidance of $375-400mn (ours: $380mn) and Dojolvi revenue guidance of $75-80mn (ours: $77mn). We continue to be encouraged by the company's commercial performance in rare disease indications as well as their strong 2024 commercial outlook forecasting ~20% increases in revenue. Additionally, we note high focus on several upcoming pipeline updates that could offer future avenues of growth including: (1) phase 2 update for GTX-102 in Angelman syndrome in 1H. RARE's program is the furthest along in development; however, Ionis Pharmaceuticals (ticker: IONS; covered by Jason Gerberry) is close behind expecting to report out topline data from Part I of their phase 1/2a study in mid-2024. As such, we look for updated RARE timelines on program next steps noting high focus on regulatory feedback regarding a pivotal phase 3 trial design; (2) enrollment updates for the ongoing phase 3 study evaluating setrusumab in osteogenesis imperfecta (expected to complete in 1Q). Management has also guided to providing additional phase 2 data later in 2024; (3) expectations for the interim Stage 1 data evaluating UX701 in Wilson disease and phase 3 data for DTX401 in glycogen storage disease type Ia both expected in 1H; and (4) color on the value add for the upcoming WORLDSymposium presentation for UX111 in Sanfilippo syndrome. Recall, the company continues to seek an accelerated review path with the FDA. We view 2024 as an important year for the company as they look to bring their next stage of assets closer to commercialization. We maintain our Buy with $85 PO and highlight RARE as one of our top picks of 2024.

RYTM: Focus on next gen pipeline franchise

Rhythm Pharmaceuticals (RYTM, Buy, $49 PO) reported $22.5mn (+17% q/q) in Imcivree revenue in 3Q. We model 4Q Imcivree sales of $25.5mn (+13% q/q). We recently caught up with management who highlighted that they do not expect to provide FY24 Imcivree revenue guidance, citing the highly dynamic nature of a rare disease launch. Recall during the 3Q earnings call, RTYM estimated that roughly 80% of covered lives are in states with an Imcivree policy in place or in a state that has had a positive coverage decision. Furthermore, the average time for coverage approval is currently one to three months with an increased number of patients getting approval in the one-month range. Management estimates that roughly 20% of patients are on free drug with the expectation that they will tackle this population on an annual basis when payers update their policies. As such, we note higher focus on current Imcivree reimbursement dynamics given recent KOL feedback highlighting continued challenges getting Imcivree covered for their rare genetic obesity patients. Despite coverage headwinds, we continue to be encouraged by the current Imcivree commercial trajectory and note favorable payer dynamics could offer near-term upside to our current estimates. We also see potential upside within the pipeline given Imcivree expansion opportunity in hypothalamic obesity (HO; phase 3 data expected in 1H25) as well as next generation assets that could increase market share in current indications. We maintain our Buy with $49 PO.

Additional focuses for the 4Q earnings call include: (1) updates regarding the agreement with LG Chem to acquire the global rights of LB54640 (oral MC4R agonist). Based on current timelines, RYTM expects to initiate 2 phase 2 studies in hypothalamic obesity and PPL (POMC, LEPR or PCSK1 deficiency obesity) later this year; (2) status update on the RM718 (weekly MC4R agonist) phase 1 dose finding study that is expected to initiate in 1H24; (3) expectations for phase 2 DAYBREAK Stage 2 data in 2H; and (4) clarity on timing of the supplementary new drug application submission for Imcivree in pediatric Bardet-Biedl syndrome and PPL patients expected in 1H.

SAGE: Looking for initial launch metrics for Zurzuvae

Sage Therapeutics (SAGE, Neutral, $30 PO) launched Zurzuvae in post-partum depression (PPD) in mid-December 2023. The company has commented they expect a $75mn milestone payment after achieving the first commercial sale. We currently model $2.3mn (cons: $1.6mn) for 4Q but note sales could be lower given the official launch occurred late in December. On the earnings call, we will look for color on initial launch metrics during the first few weeks since the launch and color on the ongoing conversations with payors to inform our estimates. Management has commented they are focusing on optimizing access to Zurzuvae without the need for prior authorizations or step edits, which we think will be a key step for uptake. While we are encouraged by Zurzuvae's clinical profile and high unmet need in PPD, we remain cautious on the long-term opportunity as diagnosis and treatments rates are low. We will continue to monitor for color on access and real-world use to understand better the commercial potential of Zurzuvae. We maintain our Neutral with $30 PO.

We highlight the company also has several phase readouts for dalzanemdor (SAGE-718) and SAGE423 in 2024. The company expected to present topline phase 2 data for dalzanemdor from: (1) PRECEDENT study in mild cognitive impairment associated (MCI) with Parkinson's disease in early-24 (Q1/Q2); (2) SURVEYOR study in Huntington's disease (HD) cognitive impairment in mid-24 (Q2/Q3); (3) LIGHTWAVE study in MCI and mild dementia due to Alzheimer's disease in late/24 (Q3/Q4); and (4) DIMENTION study in HD cognitive impairment in late-24. Additionally, topline data for the phase 2b KINECT2 study evaluating SAGE-324 in essential tremor is expected in mid-24.

SRPT: Decision on Elevidys label expansion by August

Sarepta (SRPT, Buy, $164 PO) pre-announced 4Q Elevidys revenues of $131mn ahead of expectations and reported preliminary FY23 revenues for the exon skipping franchise of $945mn ahead of guidance. We are encouraged by the strong momentum of the

Elevidys launch, highlighting the high demand and the continued growth of the exon skipping franchise. Near-term focus remains on the outcome of the regulatory decision regarding the label expansion for Elevidys in Duchenne muscular dystrophy (DMD). Recall, the company submitted the efficacy supplement in December and anticipates acceptance of the filing in March and an action date in August under standard regulatory timelines. However, the company has highlighted FDA's commitment for an expedited review. Management has noted they expect broad label inclusive for all DMD patients regardless of age or ambulatory status. We reiterate our view that a label expansion is likely based on the results from EMBARK, suggesting functional benefit based on the secondary timed functional tests. We think a label inclusive of all ambulatory patients is the most likely scenario but note recent commentary from Peter Marks (see our Jan 9 note) could indicate an all-inclusive label is not out of the question. We currently model 35% peak penetration and $2.4bn in risk-adjusted peak sales for Elevidys but highlight there is room for additional upside under a broad label inclusive of all patients. On the earnings call, we will focus on updates on the regulatory review process for Elevidys and expectations for the cadence of the launch near term under the current label. We will also look for color on expectations for the exon skipping franchise in 2024 and beyond given the expected cannibalization from Elevidys. We reiterate SRPT as one of our top picks for 2024. We maintain our Buy rating with $164 PO.

Exhibit 2: Summary of key changes
Summary of key changes for our covered names made in this report

Ticker		INCY
Rating		B-2-9
Price		$58.22
Estimates	Prev.	Current
Price Ob.	$69	$69
2023E EPS	2.20	2.40
2024E EPS	2.64	2.76
2025E EPS	3.80	3.59

Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Exhibit 3: Stocks mentioned
List of company tickers mentioned in this report

Ticker	Company name	Rating	Price	Price Obj.
ACAD	ACADIA Pharmaceuticals Inc	C-2-9	$25.28	$33
ALNY	Alnylam Pharmaceuticals Inc	B-1-9	$173.37	$246
APLS	Apellis Pharmaceuticals Inc	C-1-9	$62.27	$77
ARGX	Argenx SE	C-1-9	$378.15	$557
ASND	Ascendis Pharma A/S	C-1-9	$141.70	$156
BCRX	BioCryst Pharmaceuticals Inc	C-1-9	$5.09	$11
BNTX	BioNTech SE	C-1-9	$93.03	$159
FOLD	Amicus Therapeutics Inc	C-1-9	$12.32	$19
INCY	Incyte Corp	B-2-9	$58.22	$69
NBIX	Neurocrine Biosciences Inc	B-1-9	$142.29	$154
PTCT	PTC Therapeutics Inc	C-3-9	$25.30	$15
RARE	Ultragenyx Pharmaceutical Inc	C-1-9	$43.22	$85
RYTM	Rhythm Pharmaceuticals Inc	C-1-9	$44.98	$49
SAGE	Sage Therapeutics Inc	C-2-9	$24.72	$30
SRPT	Sarepta Therapeutics Inc	C-1-9	$122.79	$164

Source: BofA Global Research, Bloomberg

BofA GLOBAL RESEARCH

Price objective basis & risk

Acadia Pharmaceuticals (ACAD)

Our DCF-derived PO of $33 encompasses commercial drug Nuplazid in PDP at $14/share. Daybue in Rett represents $18/share to our PO. The remainder of our net

present value (NPV) comes from pipeline and cash. We use a weighted-average cost of capital (WACC) of 9% for PDP and Rett, consistent with how we value other drugs in similar stages of development in our coverage universe. We assume a 21% tax rate for ACAD and zero terminal value.

Downside risks to our PO are 1) slower-than-expected commercialization of Nuplazid and Daybue, 2) stronger-than-expected competition from other 5HT2A compounds and other drugs in development for the same indications as Nuplazid and Daybue, and 3) negative results in pipeline indications.

Upside risks are 1) faster-than-expected Nuplazid and Daybue uptake in the US, 2) potential for partnerships or transactions with larger pharma companies, and 3) advances of early-stage pipeline assets in pain and central nervous system (CNS) disorders.

Alnylam Pharmaceuticals (ALNY)
Our PO of $246 for ALNY consists of $4/share for Onpattro, $120/share for Vutrisiran, $25/share for Givlaari and Lumasiran, $6/share for Leqvio, $7/share for Fitusiran, $20/share for ALN-AGT, $52/sh for other pipeline and partnered assets and $11/sh for net cash. We apply a WACC of 9% for commercial-stage assets, 10% for Vutrisiran in ATTR-CM, 10% for other late stage pipeline, and 11% for ALN-AGT.

Upside risks to our PO are 1) better-than-expected uptake of its marketed stage assets, 2) approval of Onpattro and Vutrisiran in ATTR cardiomyopathy, 3) early-stage pipeline advancing into late-stage development, and 4) positive results from partnered programs.

Downside risks to our PO are 1) slower-than-expected uptake of commercial assets, 2) unexpected safety in its siRNA-based assets, and 3) higher-than-expected expenses.

Amicus Therapeutics (FOLD)
We use a sum of the parts DCF valuation to arrive at our $19 price objective (PO) for Amicus Therapeutics (FOLD). We value lead asset migalastat Galafold at $10/share using a WACC of 9%, similar to how we value other assets in similar stages of development. Pombiliti in Pompe contributes $11/sh to our DCF derived PO. We value Pombiliti using a 9% WACC. The remainder of our valuation comes from the pipeline and cash, contributing -$2 to our PO. Our DCF goes out to 2035 and we use a zero terminal value, consistent with how we value other companies.

Upside risks to our PO are 1) stronger than expected sales of migalastat in the US, 2) identification of additional amenable mutations treatable by migalastat, 3) stronger than expected launch for Pombiliti, and 5) durability and efficacy data from the early stage gene therapy programs.

Downside risks to our PO are 1) failure of one or more of FOLD's products to reach the market, 2) slower than expected uptake for migalastat, 3) better than expected success for competing marketed and development stage drugs.

Apellis Pharmaceuticals (APLS)
Our price objective (PO) of $77 is based on a probability-adjusted net present value (NPV) analysis that includes $15/share for peg' in PNH and $73/share for peg' in GA and -$11/share for pipeline/corporate expenses and cash. The remainder of our valuation comes from pipeline and net cash.

Our discounted cash flow (DCF)-based model assumes sales out to 2036 with no terminal growth, with weighted average cost of capital (WACC) of 9% for PNH and GA, and 12% for pipeline.

Upside risks to our PO are 1) better-than-expected penetration in PNH and/or GA, 2) clarity around reports of rare events of occlusive retinal vasculitis following Syfovre injection, 3) less-than-expected neovascularization event in GA in real-world use, 34) faster-than-expected uptake of peg' in GA, and 5) positive data from other complement-related indications, such as C3G, and CAD.

Downside risks to our PO are 1) higher-than-expected neovascularization or occlusive retinal vasculitis events in GA in real-world setting, 2) better-than-expected results from competitors, 3) delay or failure to obtain regulatory approval, and 4) failure to expand into other complement-related indications.

Argenx SE (ARGX)
Our price objective of $557 is based on our DCF-derived model with valuations assigned for efgartigimod in Myasthenia Gravis ($307), Immune Thrombocytopenia ($6), and Chronic Inflammatory Demyelinating Polyneuropathy ($161), pipeline and corporate expenses ($30) and cash. We assign 9% WACC for MG, 10% for ITP, and CIDP. Our DCF valuation is based on estimates out to 2038. We assume peak penetrations of 10%-35% in US depending on the indication.

Upside risks to our PO are (1) better-than-expected efficacy in efgartigimod indications, (2) faster-than-anticipated timeline to approval, (3) additional indications advancing in clinical development, (4) positive data from its partnerships, and (5) higher-than-expected pricing at launch.

Downside risks to our PO are (1) competitors have better-than-expected efficacy, (2) failure to achieve clinically meaningful results in ongoing studies, and (3) unexpected safety events in ongoing trials.

Ascendis Pharma (ASND)
Our $156 price objective for ASND includes $49 for TransCon GH, $94 for TransCon PTH, $8 for oncology assets, and the remainder of value coming from net cash and pipeline. We use a 9% weighted-average cost of capital (WACC) for GH and 10% WACC for PTH, consistent with how we model other drugs in a similar development stage. We assume zero terminal value for all products, also consistent with our valuation of other covered companies.

Risks to our price objective are slower TransCon GH sales, higher-than-expected competition from other long-acting therapies, failure of PTH to advance to commercialization and pushback on pricing from payors.

Biocryst Pharmaceuticals Inc (BCRX)
Our DCF-derived PO of $11 is comprised of $12/share for Orladeyo in preventing HAE attacks, pipeline/corporate expenses, and net cash. We assume a 9% WACC for Orladeyo and 14% WACC for pipeline expenses. We assume no terminal value.

Upside risks to our price objective are 1) Orladeyo uptake faster than we expect, 2) failure of competitor products in development for HAE, 3) increased government funding, and 4) positive outcome from BCX10013 in PNH, C3G and other complement-mediated diseases.

Downside risks to our price objective are 1) slower-than-expected Orladeyo market penetration, 2) high discontinuation rate of Orladeyo, 3) unexpected long term safety concerns, 4) stronger preference for competing products including Takhzyro, and 5) failure of pipeline products, such as BCX10013 in PNH.

BioNTech (BNTX)

Our DCF-derived PO of $159 for BNTX consists of $18/share for FixVac over four indications (melanoma, H&N, prostate) and $5/share for iNeST over four indications (solid tumors). We assign $76/share to the Comirnaty COVID vaccine and -$15/share to BNTX's early-stage pipeline assets including intratumoral immunotherapy, RiboMabs, RiboCytokines and engineered cell therapy and antibody platforms, as well as future potential infectious disease indications. The remaining value in our PO comes from cash. We use 12-14% WACC for FixVac, 12-13% WACC for iNeST, and 8% for BNT162 (COVID vaccine). We also assume 1.5% terminal growth for FixVac and iNeST.

Upside risks to our price objective are 1) approval of COVID vaccine boosters in a broad population, 2) positive data from clinical-stage programs (FixVac and iNeST) in oncology including melanoma and other solid tumors, 3) potential to reach earlier line patient populations based on combination therapies, and 4) positive data from early stage assets from other platforms including cell therapies, antibodies and small molecule immunomodulators.

Downside risks are 1) failure to show benefit in clinical studies, 2) failure to reach optimized turnaround time for iNeST, 3) visibility needed on regulatory path forward for iNeST, 4) competition from other companies pursuing the same therapeutic modalities, and 5) challenges in scaling up to commercial manufacturing capacity.

Incyte Corporation (INCY)
Our PO of $69 for INCY consists of $41/share for Jakafi/Jakavi, $19/share for Ruxolitinib cream, $3/share for Pemazyre, -$2/share for Monjuvi, $3/share for Olumiant royalty, $0.2/share for Iclusig, $0.5/share for Tabrecta royalty, -$13/share for pipeline, and the remainder in net cash. We apply a weighted-average cost of capital (WACC) of 9% for commercial-stage assets, 10% for late-stage clinical pipeline, and 11% for earlier-stage clinical pipeline with no terminal value.

Upside risks to our PO are 1) positive data from clinical trials in the pipeline, 2) better than expected results from its marketed assets, 3) additional updates from early-stage assets.

Downside risks to our PO are 1) failure of Jakafi or Opzelura to meet our estimates, 2) business development events that investors view negatively, or 3) negative data in clinical trials.

Neurocrine Biosciences (NBIX)
Our DCF-derived PO of $154 consists of $124/share for Ingrezza for tardive dyskinesia, $6/share for chorea and $8/share for CAH. Royalties from Orilissa for endometriosis and Oriahnn for uterine fibroids represent another $3/share. The rest of the valuation is attributed to cash, corporate expense and pipeline assets. We use a 9% weighted-average cost of capital (WACC) for commercial assets and assume no terminal value, consistent with other companies under coverage that have commercial products, and 13% WACC for pipeline.

Downside risks to our price objective and estimates are Ingrezza not approved for chorea in Huntington's patients, pipeline setbacks, higher-than-expected operating expenses, greater-than-expected competition from other drugs, earlier-than-expected generic competition to NBIX's products, potential for future dilutive cash raises, potential for the US drug pricing environment to worsen and any unexpected management changes.

PTC Therapeutics (PTCT)
Our $15 price objective for PTC reflects $3 for Translarna in DMD, $7 for Evrysdi in SMA, $3 for Emflaza, $8 for GT-AADC, $5 for PKU, and the remainder of our valuation is cash and pipeline spend. We use an 10% WACC for Translarna, a 9% WACC for Emflaza

and Evrysdi, and an 10% WACC for Upstaza (PCT-AADC) and sepiapterin, consistent with how we model drugs in similar stage of development. We attach a 14% WACC to the early-stage pipeline pending presentation of data. We assume zero terminal value for all products, also consistent with our valuation of other covered companies.

Downside risks to our price objective are removal of the approval for Translarna in other ex-US territories, failure to receive approval for Translarna in the US, and slower than expected uptake for Evrysdi in SMA and Upstaza in AADC deficiency.

Upside risks to our price objective are faster-than-expected uptake of Evrysdi in SMA, higher Emflaza or Translarna sales than expected, US approval for DMD, and a successful AADC launch.

Rhythm Pharmaceuticals (RYTM)
Our DCF-derived PO of $49/share includes $27/share for Imcivree (setmelanotide) for treatment of POMC null, leptin receptor deficiency (LepR), Bardet-Biedl syndrome (BBS) and basket indication, and $15/sh for hypothalamic obesity (HO). We use a 14% WACC on pipeline expenses, 11% on basket and HO, and 9% in approved indications including PPL deficiency and BBS. We assume no terminal value, consistent with other companies under coverage. The remainder of our valuation is cash and pipeline.

Downside risks to our price objective and estimates are unsuccessful clinical trials, lower-than-expected diagnosis rate, higher-than-expected operating costs, lower-than-expected market penetration, potential for dilutive cash raises in the future and any unexpected management changes.

Upside risks are faster-than-anticipated commercial uptake and progress in additional genetic obesity indications.

SAGE Therapeutics (SAGE)
Our discounted cash flow (DCF)-derived PO of $30 for SAGE consists of $2/share for Zulresso in PPD. Zuranolone contributes $7/share to our PO for PPD and $4/share in MDD. The remaining value in our PO comes from cash ($14/sh), corporate expenses and pipeline ($1/sh) milestones ($2/sh). We use a 9% weighted-average cost of capital (WACC) for Zulresso, a 9% WACC for Zuranolone in PPD, and 11% WACC in MDD, and assume no terminal value for SAGE.

Upside risks to our price objective are 1) approval of zuranolone in MDD, 2) higher-than-expected penetration of zuranolone in PPD and MDD, and 3) positive data from early stage assets.

Downside risks are 1) failure of Zuranolone in MDD, 2) failure of other clinical programs, and 3) lower-than-expected penetration of zuranolone and Zulresso

Sarepta Therapeutics (SRPT)
Our $164 PO is based on a probability-adjusted net present value (NPV) analysis that includes $17/share for Exondys, $8/share for Vyondys, $22/share for Amondys, $78/share for micro-dystrophin gene therapy, $38/share for LGMD assets. The remainder of our valuation comes from pipeline and cash. Our discounted cash flow (DCF) analysis assumes sales out to 2035, with weighted average cost of capital (WACC) of 9-13%.

Upside risks to our PO are 1) better-than-expected market uptake from its exon skipping assets, 2) SRP-9001 US label expansion, and 3) EU approval of SRP-9001 and other assets.

Downside risks to our PO are 1) failure and delay in approval for exon skipping assets, 2)

unexpected safety or durability findings in gene therapy programs, 3) other micro dystrophin competitors, and 4) higher-than-expected royalty payments.

Ultragenyx Pharmaceuticals (RARE)
Our DCF-derived PO of $85 for RARE consists of $10/share for Dojolvi in LC-FAOD, $20/share for Crysvita in XLH and TIO, $0.5/share for Mepsevii in MPS7, $16/share for Angelman, $43/share for gene therapy assets and the remainder for cash and RARE's pipeline. We use a 9% WACC for approved products, 11-12% for clinical-stage products, such as gene therapy programs.

Upside risks to our price objective are: 1) better than expected uptake for its approved products, 2) positive data for clinical stage assets, and 3) accelerated approval for its drug candidates.

Downside risks are: 1) low penetration into rare disease populations, 2) negative data for clinical stage assets, 3) unexpected safety risks associated with clinical stage drug candidates, 4) unexpected generic competition.

Analyst Certification

I, Tazeen Ahmad, 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.

US - Biotechnology Coverage Cluster

Investment rating	Company	BofA Ticker	Bloomberg symbol	Analyst
BUY				
	4D Molecular Therapeutics, Inc.	FDMT	FDMT US	Tazeen Ahmad
	Alnylam Pharmaceuticals	ALNY	ALNY US	Tazeen Ahmad
	Amicus Therapeutics	FOLD	FOLD US	Tazeen Ahmad
	Annexon Biosciences	ANNX	ANNX US	Tazeen Ahmad
	Apellis Pharmaceuticals	APLS	APLS US	Tazeen Ahmad
	Argenx SE	ARGX	ARGX US	Tazeen Ahmad
	Arvinas	ARVN	ARVN US	Tazeen Ahmad
	Ascendis Pharma	ASND	ASND US	Tazeen Ahmad
	Biocryst Pharmaceuticals Inc	BCRX	BCRX US	Tazeen Ahmad
	BioNTech	BNTX	BNTX US	Tazeen Ahmad
	Denali Therapeutics	DNLI	DNLI US	Tazeen Ahmad
	Inozyme Pharma, Inc.	INZY	INZY US	Tazeen Ahmad
	Merus	MRUS	MRUS US	Tazeen Ahmad
	Neurocrine Biosciences	NBIX	NBIX US	Tazeen Ahmad
	PepGen Inc	PEPG	PEPG US	Tazeen Ahmad
	Rhythm Pharmaceuticals	RYTM	RYTM US	Tazeen Ahmad
	Sarepta Therapeutics	SRPT	SRPT US	Tazeen Ahmad
	Ultragenyx Pharmaceuticals	RARE	RARE US	Tazeen Ahmad
NEUTRAL				
	Acadia Pharmaceuticals	ACAD	ACAD US	Tazeen Ahmad
	Incyte Corporation	INCY	INCY US	Tazeen Ahmad
	Prothena Corporation	PRTA	PRTA US	Tazeen Ahmad
	SAGE Therapeutics	SAGE	SAGE US	Tazeen Ahmad
UNDERPERFORM				
	Achilles Therapeutics	ACHL	ACHL US	Tazeen Ahmad
	Fate Therapeutics	FATE	FATE US	Tazeen Ahmad
	Fulcrum Therapeutics	FULC	FULC US	Tazeen Ahmad
	Pharvaris	PHVS	PHVS US	Tazeen Ahmad
	PTC Therapeutics	PTCT	PTCT US	Tazeen Ahmad

Disclosures

Important Disclosures

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

Coverage Universe	Count	Percent	Inv. Banking Relationships [R1]	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 [R1]	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%

[R1] Issuers that were investment banking clients of BofA Securities or one of its affiliates within the past 12 months. For purposes of this Investment Rating Distribution, the coverage universe includes only stocks. A stock rated Neutral is included as a Hold, and a stock rated Underperform is included as a Sell.

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Investment rating	Total return expectation (within 12-month period of date of initial rating)	Ratings dispersion guidelines for coverage cluster[R2]
Buy	≥ 10%	≤ 70%
Neutral	≥ 0%	≤ 30%
Underperform	N/A	≥ 20%

[R2]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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