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WORST START TO A YEAR

Performance of biopharmaceutical sector nosedives in January

By Peter Winter, Editor

The fact that approximately 95 percent of the 353 public biopharmaceutical companies tracked by the BioWorld Stock Report saw their share price values fall in January emphasizes just how brutal the equity markets have been so far this year. The prevailing conditions bring back memories of the chaotic markets experienced back in 2008 during the global financial meltdown. This time around the markets have been derailed by fears of a flagging global economy and a world drowning in an oversupply of crude oil with producers unwilling to turn off the tap.

In this highly volatile environment investors have moved to the sidelines and sold off their holdings in a number of sectors, including health care.

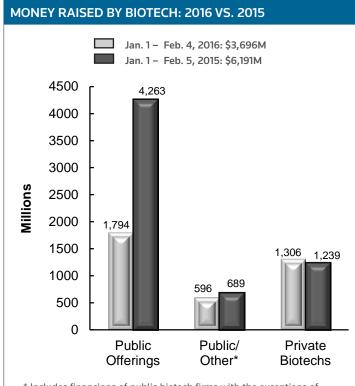
WORST STARTS

The industry has certainly got off to one of its worst starts to a year with the final iteration of the BioWorld Blue Chip Biotech Index, which comprises 20 of the leading companies ranked by market cap, closing January down a staggering 22.5 percent in value. (See BioWorld Blue Chip Biotech Index, p. $\underline{4}$.) The prevailing volatile capital markets and the changing nature of the sector, with pharmaceutical companies in the process of morphing themselves to operate more like innovative biotechnology companies to improve the return on research and development investments, requires that we reflect this with a new index. It is designed to more closely track the progress of this new evolving biopharmaceutical sector as innovation in drug development has now spread well beyond the confines of traditional biotech companies.

We have created a new price-weighted BioWorld Biopharmaceutical Index that combines group members drawn from the BioWorld Blue Chip Biotech Index and BioWorld Pharma Index. Specifically, group members include the 11 top biopharma companies by market cap as of Jan. 29, and 10 leading pharmaceutical companies, including Pfizer Inc., Merck & Co. Inc., Glaxosmithkline plc, Astrazeneca plc, Roche AG, Abbvie Inc., Sanofi SA, Bristol-Myers Squibb Co., Eli Lilly and Co. and Novartis AG.

The new BioWorld Biopharmaceutical Index closed out January

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* Includes financings of public biotech firms with the exceptions of public offerings and certain investments from corporate partners.

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IPO market withers in 4Q, January, despite solid \$6.2B year

By Karen Carey, Staff Writer

For the first time since 2011, the biopharma industry failed to complete a single initial public offering in the month of January, signifying a slowdown that began in the fourth quarter of 2015. Even the dismal year of 2012 had at least one IPO in January, compared with two in 2013, six in 2014 and five last year.

The first week of February broke the dry spell with the first two completed IPOs in any sector – Beigene Ltd.'s \$158.4 million American depositary shares (ADS) transaction, and Editas Medicine Inc.'s \$94.4 million IPO – but 25 biopharma companies continue to wait in the wings.

Including all traditional IPOs, ADS listings and foreign IPOs, *BioWorld Insight* tracked 69 total IPOs throughout 2015, but only 13 occurred in the fourth quarter, including 11 U.S. IPOs, one ADS offering and one foreign IPO.

All told, the 69 IPOs raised \$6.2 billion, compared to 84 IPOs raising \$6.5 billion in 2014, and 42 raising \$2.95 billion in 2013 – significantly more than the 12 IPOs completed in 2012.

The 2015 figures consist of \$3.9 billion from 44 traditional IPOs by private companies, \$1.17 billion from ADS offerings, and \$1.1 billion in foreign IPOs. Of the 44 traditional IPOs, 18 – or 41 percent – were on the plus side with an average price increase of 59.3 percent at the end of 2015, with two companies more than doubling their IPO price. A total of 26 stocks – 59 percent – closed out the year below their IPO price at an average drop of 33.2 percent, with six companies losing more than half their value.

However, as is the case with the unpredictability of stock price

fluctuations, not all increases remained steady through January, and some top 2015 IPO stocks lost speed in the first month of 2016 without any significant news explaining the drop.

SURGING IPO STOCKS OF 2015

- Although the fourth quarter represented the fewest number of IPOs for the year, a 4Q IPO by Aclaris Therapeutics Inc., of Malvern, Pa., experienced 2015's largest stock incline at nearly 145 percent. The climb followed a disappointing and perhaps, underpriced IPO raise of \$63.8 million in October. The dermatology company priced shares below its initial range of \$14 to \$16, offering 5.8 million shares at \$11 apiece. Aclaris started a phase II trial of its high-concentration hydrogen peroxide topical solution A-101 for common warts in November, and a phase III trial in seborrheic keratosis treatment in January. Aclaris' stock (NASDAQ:ACRS) tripled to more than \$33 at one point in December, but is now running at about double its IPO price, closing last Wednesday at \$22.
- Canton, Mass.-based Collegium Pharmaceutical Inc.'s stock (NASDAQ:COLL) climbed 129.2 percent by the end of 2015 from its \$80 million May IPO, which priced at \$12. The stock closed Wednesday at \$19.52, below its 2015 close of \$27.50, representing an increase of 62.7 percent or roughly half of what the Dec. 31 close showed. Collegium raised \$50 million in a private offering two months before its IPO, and just raised another \$55 million in January through a follow-on offering, ramping up for its Xtampza ER launch. The oxycodone extended-release capsules for chronic pain gained tentative FDA approval in November, with final approval pending patent litigation filed by Purdue Pharma LP in March 2015. On Feb. 2, the company announced a court decision invalidating three Orange Book-listed patents asserted against Collegium.

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BIOWORLD INSIGHT

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BUSINESS OFFICE

Donald R. Johnston (Senior Director, Current Awareness), Amanda Lanier (Managing Editor), Sarah Cross (Marketing Director), Penney Holland (Web Production Manager)

CONTACT US

Jennifer Boggs, (770) 810-3120 // Anette Breindl, (770) 810-3134 // Sarah Cross, (770) 810-3138 // Michael Fitzhugh, (770) 810-3064 // Penney Holland, (770) 810-3047 // Donald R. Johnston, (770) 810-3118 // Nuala Moran, 44 127-0812775 // Randy Osborne, (770) 810-3139 // Marie Powers, (770) 810-3136 // Mari Serebrov, (770) 810-3141 // Cormac Sheridan, 353-87-6864323 // Peter Winter, (770) 810-3142 // Lynn Yoffee, (770) 810-3123







INVESTORS BACK BUG FIGHTERS

Fighting resistance with novel mechanisms of action

By Brian Orelli, Staff Writer

With the rising increase in bacteria and fungus resistant to current medications, companies are developing drugs that use novel mechanisms of action to fight the bugs.

"Infectious disease is in dire need of some innovation. We're kin to where oncology was in the 1970s," Jeff Stein, president and CEO of Cidara Therapeutics Inc., told *BioWorld Insight*.

Investors appear to be backing the idea that novel compounds can find a place in doctors' arsenal of anti-infectives. Last week, Spero Therapeutics LLC raised \$30 million in a series B financing to support its development of therapies to treat gram-negative bacteria.

And last November, Amplyx Pharmaceuticals Inc. raised \$40.5 million in a series B financing to advance its broad-spectrum antifungal APX001. (See *BioWorld Today*, Nov. 11, 2015.)

Cidara raised \$42 million in a series B last year and then went public just two months later, raising an additional \$69.3 million net of underwriting discounts, commissions and offering-related transaction costs. (See *BioWorld Today*, April 16, 2015.)

IMMUNOTHERAPY 2.0

Taking from the world of cancer immunotherapy, San Diego-based Cidara is developing bispecific molecules to attract immune cells to the infectious cells. The platform, which Cidara calls Cloudbreak, involves an effector moiety that binds to the immune cell, a targeting moiety that binds to the infectious cell and a linker between them.

In a proof-of-concept ex vivo experiment, Cidara used caspofungin, an antifungal drug that binds to the cell wall of *Aspergillus* linked to a tripeptide with a formal group on it, which can bind to formyl peptide receptors that neutrophils use to detect bacterial proteins that start with a formlymethionine. At concentrations well below the level required for caspofungin to kill *Aspergillus*, the molecule was able to attract neutrophils that killed the fungus.

Cidara is testing different combinations of effector and targeting moieties, including antibodies to determine the most effective combination. In addition to attracting neutrophils, it may be possible to attract T cells and other players in the adaptive immune system. And different targeting moieties could be used to target bacteria, viruses or other funguses.

"We can follow a well-trodden path that a lot of these oncology companies have taken and leverage a large body of work," Stein said. Cidara hopes to have a development candidate from the Cloudbreak platform before the end of the year.

In the meantime, the company is working on CDC101, a longacting antifungal in the echinocandin class. Last month, the company said a phase I multiple ascending-dose trial in healthy volunteers didn't turn up any safety concerns, including hepatotoxicity seen with other drugs in the echinocandin class. Cidara plans to start a phase II comparator trial in patients infected with Candida by the end of this quarter.

HELPING OTHERS

Spero Therapeutics, of Cambridge, Mass. is developing what it calls a Protentiator platform designed to improve the potency of existing anti-infective medications in gram-negative bacteria.

"The outer envelopes on gram-negative bacteria tend to keep out drugs," Spero's president and CEO, Ankit Mahadevia, told *BioWorld Insight*. Drugs designed to get through the highly

See Infectious disease, page 10

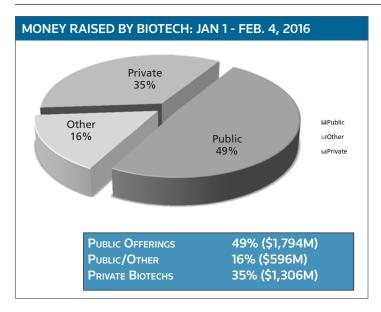


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Markets

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down almost 17 percent, with all its members contributing red figures. The general markets also had a bad month but not as bad as biopharma, with the Nasdaq Composite index and the Dow Jones Industrial Average recording drops in value of 8 percent and 5.5 percent, respectively. (See BioWorld Biopharmaceutical Index, p. 6.)

ADDING TO THE GLOOM

Leading the decliners in the month was Incyte Corp., which announced at the end of January a futility-driven stoppage of a phase II substudy testing Jakafi (ruxolitinib) and Stivarga (regorafenib, Bayer AG) against metastatic colorectal cancer (mCRC). The news contributed to driving its shares (NASDAQ:INCY) down even further to close out the month

down 35 percent. (See BioWorld Today, Jan. 9, 2016.)

The decision to stop the substudy was made during a planned interim analysis that showed the drug combination failed to demonstrate "a sufficient level of efficacy" in patients with relapsed or refractory mCRC and levels of C-reactive protein – linked to inflammation – of greater than 10 mg per liter in their blood.

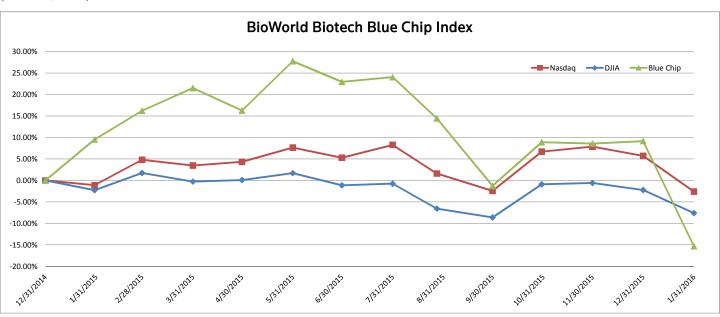
Companies reporting any hint of negative news saw their share values plummet. Even though Biomarin Pharmaceutical Inc. had received negative advisory committee feedback in November for its Kyndrisa (drisapersen) in Duchenne muscular dystrophy (DMD), news in January that it had received an expected complete response letter from the FDA, still hit the company's shares (NASDAQ:BMRN), which closed down 29 percent by the end of the month.

To further add to the gloom for biopharma companies, even though most are reporting annual financials that are in line with expectations, the positive reports failed to impress. For example, shares of both Celgene Corp. and Vertex Pharmaceuticals Inc. closed out January down 16 percent and 28 percent respectively. (See *BioWorld Today*, Jan. 29, 2016.)

For the full year, Vertex reported revenues totaling \$1.03 billion, including \$350.7 million for Orkambi, a drug that combines previously approved Kalydeco (ivacaftor) with lumacaftor and gained initial approval last year in CF patients 12 and older with the homozygous F508del mutation. It reported revenue of \$631.7 million for Kalydeco. Vertex ended the year with about \$1 billion in cash, cash equivalents and marketable securities.

For the full year, Celgene reported net product sales totaling \$9.16 billion, a 21 percent increase over 2014. Net income for the year was \$3.88 billion, or \$4.71 per share. The company ended the year with \$6.55 billion on its balance sheet.

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WEEK IN REVIEW

FINANCINGS

Avexis Inc. set terms of its IPO, planning to raise \$85 million by offering 4.25 million shares priced in a range of \$19 to \$21.

Beigene Ltd. priced its IPO of 6.6 million American depositary shares at \$24 per ADS.

Cancer Prevention Pharmaceuticals Inc. is aiming to raise \$25 million from its proposed IPO by offering 1.9 million shares priced between \$12 and \$14.

Editas Medicine Inc. priced 5.9 million shares at \$16 each in its IPO.

Enyo Pharma SAS closed a \$24.4 million series A round of financing.

Epibiome Inc. completed a \$6 million series A financing.

Kempharm Inc. priced \$75 million aggregate principal amount of 5.5 percent senior convertible notes due 2021 in a private placement.

LAM Therapeutics closed a \$40 million financing.

Mission Therapeutics Ltd. has raised \$86.3 million in a third round of funding.

Neos Therapeutics Inc. filed an S-1 with the SEC seeking to raise up to \$69 million in an underwritten public offering.

Novavax Inc. said it closed its \$300 million convertible senior unsecured note offering.

Proteostasis Therapeutics Inc. set terms for its IPO, filing to raise \$50 million by offering 3.9 million shares priced in a range of \$12 to \$14.

The life sciences arm of Index Ventures is splitting from its parent and launching a new \$250 million fund dedicated to early stage European research.

Therapure Biopharma Inc. said its proposed IPO is being postponed due to current conditions in capital markets.

DEALS

Antibe Therapeutics Inc. completed its acquisition of the remaining 15 percent minority interest in **Citagenix Inc.**, a sales and distribution company with a focus on regenerative medicine.

Astrazeneca plc completed the acquisition of a majority equity stake in **Acerta Pharma LLC**, which is developing acalabrutinib (ACP-196), an irreversible oral Bruton's tyrosine kinase inhibitor.

Avalanche Biotechnologies Inc. plans to acquire **Annapurna Therapeutics SAS** through an all-stock transaction that will combine pipelines, management teams and resources with the goal of creating a gene therapy company that's bigger than the sum of its parts.

Braeburn Pharmaceuticals Inc. agreed to provide **Knight Therapeutics Inc.** exclusive rights to commercialize Probuphine in Canada.

Eisai Co. Inc. said it entered an agreement with **Esteve SA** to co-promote Fycompa (perampanel) in Spain.

Huya Bioscience International LLC said it inked a licensing agreement with **Eisai Co. Ltd.** for the commercialization of Huya's HBI-8000.

Pharmamar SA signed with **Specialised Therapeutics Asia Pte Ltd.** to market marine-based antitumor compound Aplidin (plitidepsin) for the treatment of hematological tumors in 12 Asian countries.

Portola Pharmaceuticals Inc. entered a development deal for andexanet alfa in Japan with **Bristol-Myers Squibb Co.** and **Pfizer Inc.**, under which the compound will be explored further as an antidote for the latter pair's therapy Eliquis (apixaban).

Scivac Therapeutics Inc. received shareholder approval to issue up to 650 million common shares to acquire **VBI Vaccines Inc.**

Sigmoid Pharma Ltd. entered an agreement to acquire Freund Pharmatec Ltd., the Irish subsidiary of Tokyo-based **Freund Corp.**, that develops mini-encapsulation and layering technologies.

Teva Pharmaceutical Industries Ltd. is collaborating with **Abcellera Inc.**, which will apply its high-throughput single-cell antibody platform for the discovery of rare monoclonal antibodies.

Vertical Pharmaceuticals LLC, generic firm **Trigen Laboratories LLC** and **Osmotica Holdings Corp. Ltd.** said they completed their combination, creating a specialty pharma and generics company.

... AND MORE

Avanir Pharmaceuticals Inc. said the FDA approved Onzetra Xsail (sumatriptan nasal powder) for the acute treatment of migraine, with or without aura, in adults.

Biodel Inc. completed a reduction in work force affecting 15 nonexecutive employees, a move intended to preserve the company's cash.

Cell Therapy Catapult changed its name to Cell and Gene Therapy Catapult to more accurately reflect the activities of the organization.

Merck & Co. Inc. received FDA approval for its once-daily hepatitis C virus treatment, Zepatier (elbasvir and grazoprevir).

Pierre Fabre Group is establishing an open innovation initiative to tap into research and clinical or preclinical development projects in the oncology, onco-dermatology and dermatology areas, in order to bolster its pipeline.

The Korean Ministry of Food and Drug Safety is shortening the biologics review process for rare and incurable diseases to speed up the approvals and overseas distribution of Korea-developed biopharmaceuticals.

With increasing reports of neurological disorders and neonatal malformations caused by the Zika virus from 22 countries, the World Health Organization has declared an international emergency, calling it an "extraordinary event."

WORD ON THE STREET

"We are the first Korean company to complete phase II clinical studies and receive an approval to initiate our phase III clinical study of a new biological drug. This alone is a big deal for us. This is a new biological drug – [a] gene therapy – and it's from us, a small Korean company."

Kenneth Song, assistant manager, Viromed Co. Ltd., on the successful completion of a phase II study in the U.S. for its flagship product, VM202, for the treatment of critical limb ischemia

"A coordinated international response is needed to improve surveillance, the detection of infections, congenital malformations and neurological complications, to intensify the control of mosquito populations, and to expedite the development of diagnostic tests and vaccines to protect people at risk, especially during pregnancy."

Margaret Chan, WHO Director-General, commenting on the threat of the Zika virus during a special meeting

"This is the big step forward in transforming Avalanche from an eye company to a gene therapy company."

Paul Cleveland, CEO, Avalanche Biotechnologies Inc., on the plan to acquire privately held Annapurna Therapeutics SAS through an all-stock transaction

"It's fair to say in cell therapy, while people are moving toward pivotal studies very quickly, there's also a lot of research going on in the clinic. A colleague at GSK once said, 'Research with cell therapy is done in humans,' and that's a very apt point. We need to examine all of the possibilities. If we get a checkpoint inhibitor working with cell therapy, we might have some very, very interesting data."

James Noble, CEO of Adaptimmune Therapeutics plc, discussing the company's expanded T-cell receptor engineered cancer immunotherapy program, including combination studies, with Glaxosmithkline plc

WEEK IN WASHINGTON

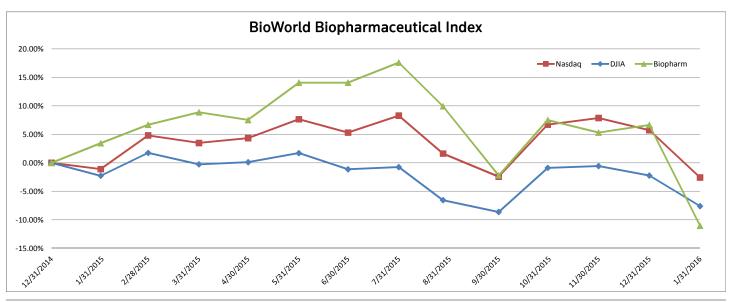
The FDA is welcoming congressional efforts to create a distinct review path for drug-device combination products. "It is a problem," Janet Woodcock, head of the agency's drug center, said at a Senate Health, Education, Labor and Pensions (HELP) Committee hearing last week. "We need more clarity. We need a different path." She added that the agency is eager to work with lawmakers on devising that path. Her comments coincided with the FDA reopening a 2009 comment period on how it reviews combination products. And next month, HELP will consider including the Combination Product Regulatory Fairness Act, introduced last June, in its trimmed-down response to the 21st Century Cures Act, which was passed by the House last year.

The U.S. Court of Appeals for the Federal Circuit may have opened the door Monday to generics of Purdue Pharma LP's abuse-deterrent Oxycontin (oxycodone hydrochloride). The appeals court upheld a lower court ruling in *Purdue Pharma v. Epic Pharma LLC* that invalidated or declared as obvious claims relating to the painkiller's abuse-deterrent properties, as well as low-ABUK product patents pertaining to minimal amounts of 14-hydroxy, a potential toxin, remaining in the oxycodone active pharmaceutical ingredient. //

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Markets

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TRACKING DRUG DEVELOPERS

Our second new index – the BioWorld Drug Developers Index – comprises representative companies from each of the BioWorld Blue Chip, Growth and Emerging Growth biotech indices, which will no longer be maintained. The 30 group members all have market caps above \$250 million. The index allows a closer tracking of the progress of drug R&D, rather than by company size and stage of development.

Drug development is an expensive and risky undertaking and in these turbulent economic times investors are shying away from companies that are involved in that space, reflected by the whopping 34 percent drop in value of the index in January. It certainly is a dramatic change in sentiment from biotech's bullrun, which saw the index hit a peak at the beginning of 2015. (See BioWorld Drug Developers Index, below.)

Leading the decliners was Sarepta Therapeutics Inc., whose shares (NASDAQ:SRPT) fell dramatically by 69 percent. What tanked the share value was news that FDA staff reviewing the company's eteplirsen (Exondys 51) expressed "considerable doubt" regarding how much the drug improves dystrophin production for patients with DMD and about whether improvements seen in small trials could be reliably attributed to the drug. The negative comments had followed closely on the agency's rejection of Biomarin's Kyndrisa and suggest that chances for eteplirsen's approval are low. (See *BioWorld Today*, Jan. 19, 2016.)

San Diego-based Halozyme Therapeutics Inc. (NASDAQ: HALO) also saw its shares drop by almost 50 percent as

investors were not impressed with the company's annual financial guidance presented at the recent J.P. Morgan Healthcare conference.

The company had rounded out December on a high note, announcing a partnership deal with Eli Lilly and Co., which will access Halozyme's Enhanze delivery platform. The deal includes \$25 million up front and up to \$160 million for each of up to five collaboration targets. (See *BioWorld Today*, Dec. 22, 2015.)

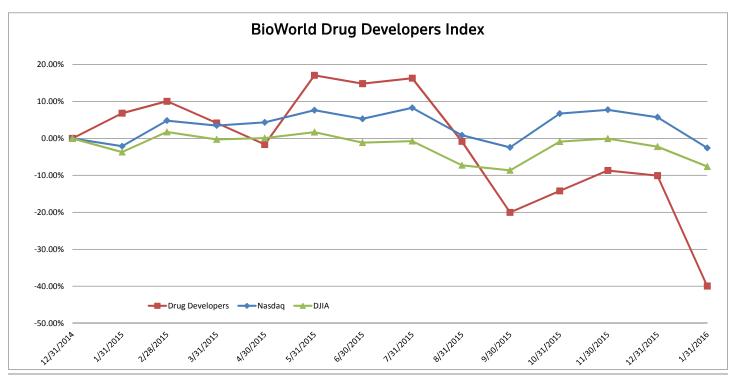
Halozyme President and CEO Helen Torley noted in the business update that the Lilly deal was the sixth the firm had signed and it allowed the company to "enter the year with great momentum," emphasizing an expanded clinical program for PEGPH2O, an investigational pegylated form of recombinant human hyaluronidase, which hit targeted enrollment in a phase II study in pancreatic cancer patients.

Investors were, however, disappointed in Halozyme's 2016 financial guidance of revenues in the range of \$110 million to \$125 million, which was lower than consensus estimates.

WILL THE TIDE CHANGE?

After this terrible start, industry watchers will be wondering when the sector will finally hit bottom. Unfortunately it remains at the mercy of the capital markets, which remain volatile. In the first four days of trading in February, the BioWorld Biopharmaceutical Index dropped a further 1.3 percent, suggesting that many companies may be closing in on an oversold position with investors starting to troll for buying opportunities.

There is still plenty of pain ahead for the sector, and it will require a significant flow of positive news to reverse the tide along with a change of fortunes for the general markets. //



IPOs

Continued from page 2

- Philadelphia's Spark Therapeutics Inc.'s (NASDAQ:ONCE) stock appeared solid at the end of 2015 when it was trading at double its \$185 million IPO price of \$23 a share. The stock surged to a high of \$79.50 last March, but it is now running below \$30, significantly down from its end-of-year closing of \$45.31. The stock jumped in October, following positive top-line pivotal phase III data of gene therapy SPK-RPE65 for genetic blinding conditions. Spark completed a \$94 million follow-on offering in December, and received a \$15 million milestone payment through its hemophilia B partnership with New York-based Pfizer Inc., giving it more than \$290 million in cash and equivalents at the close of the year.
- In June, Seres Therapeutics Inc., of Cambridge, Mass., (NASDAQ:MCRB) offered its IPO shares at \$18, above its \$15-\$17 price range. The company raised \$133.7 million and the stock closed at \$51.40 on the first day of trading. By the end of 2015, it closed at \$35.09 a 94.9 percent increase from the IPO price, but the stock closed last Wednesday at \$24.09, a more modest increase of 33.8 percent. Seres' lead drug, the oral microbiome therapeutic SER-109, is in phase II development for the prevention of *Clostridium difficile* infection.

SLUMPING IPO STOCKS OF 2015

- Shares of Fremont-Calif.-based Zosano Pharma Inc. (NASDAQ:ZSAN) hit a high of \$12 in March, but mostly slid downward throughout the year, trading at or below its January IPO price of \$11. It ended 2015 at \$2.28, down 79.3 percent, in line with last Wednesday's close of \$2.34. In June, Zosano completed enrollment in a phase II trial of ZP-Glucagon, its microneedle patch to treat severe hypoglycemia, also raising \$15 million in a debt financing. A month later, it discontinued its January 2014 Novo Nordisk glucagon-like peptide-1 analogues transdermal patch collaboration for type 2 diabetes. Other news events included completing phase I enrollment for microneedle patch delivery of zolmitriptan to treat migraine, and reporting positive phase II results for ZP-Glucagon for severe hypoglycemia and phase I results for ZP-Triptan for migraine.
- Bellerophon Therapeutics Inc.'s stock (NASDAQ:BLPH) was

- \$7.65 July 24, but dropped to \$3.39 on July 27, following the report that its Bioabsorbable Cardiac Matrix showed no statistically significant difference from placebo for both primary and secondary endpoints in the 303-patient PRESERVATION I trial to prevent heart failure. The Hampton, N.J.-based company, which completed a \$60 million IPO priced at \$12 a share in January 2015, does not plan to continue development. It finished out the year at a \$2.96 share price, a decline of 75.3 percent. The company replaced its leadership team in September, reducing its headcount and costs, and will now focus on phase III development of INOpulse in pulmonary arterial hypertension. Shares closed Wednesday at \$2.21, representing an even more dramatic 81.6 percent decrease from its IPO price.
- Ritter Pharmaceuticals Inc., of Los Angeles, watched its stock (NASDAQ:RTTR) gradually decline 66 percent from its \$20 million June IPO price of \$5 a share, closing out 2015 at \$1.70. Shares ended the day last Wednesday at \$1.22, down even more 75.6 percent. Ritter, which develops products that modulate the human gut microbiome to treat gastrointestinal diseases, is preparing for a phase IIb/III trial of RP-G28 for lactose intolerance. RP-G28 stimulates the growth of lactosemetabolizing bacteria in the colon, reducing lactose-derived gas production.

IPOS OF FOREIGN COMPANIES

Total money raised from foreign companies seeking public U.S. listings through ADS offerings amounted to nearly \$1.17 billion, representing 11 companies from eight different countries: Australia, Austria, Belgium, Denmark, Finland, France, Israel and the U.K. The biggest ones in terms of gross money raised were Cellectis SA (NASDAQ:CLLS), of Paris, with \$228.3M in March, and Galapagos NV (NASDAQ:GLPG), of Mechelen, Belgium, with \$241.5M in May.

In terms of companies conducting foreign IPOs, BioWorld's tally for 2015 was 14 total, raising \$1.1 billion on exchanges in China, Belgium, Sweden, the U.K., Ireland, Norway and Japan. The foreign listings include 3SBio Inc.'s IPO on the Hong Kong exchange (1530) in June, raising \$272.61M, and Malin Corp. plc's IPO on the Irish Stock Exchange (MLC) in March, raising \$352.8M. //

IPO PERFORMANCE IN 2015								
Company (location; ticker symbol)	Date completed	IPO price	12/31 closing price	% change				
Aclaris Therapeutics Inc. (Malvern, Pa.; ACRS)	Oct-15	\$11	\$26.94	144.9%				
Collegium Pharmaceutical Inc. (Canton, Mass.; COLL)	May-15	\$12	\$27.50	129.2%				
Spark Therapeutics Inc. (Philadelphia; ONCE)	Jan-15	\$23	\$45.31	97.0%				
Seres Therapeutics Inc. (Cambridge, Mass.; MCRB)	Jun-15	\$18	\$35.09	94.9%				
Inotek Pharmaceuticals Corp. (Lexington, Mass.; ITEK)	Feb-15	\$6	\$11.33	88.8%				

Continued on page 9

Company (location; ticker symbol)	Date	IPO	12/31 closing	% change
	completed	price	price	
Kempharm Inc. (Coralville, Iowa; KMPH)	Apr-15	\$11	\$19.86	80.5%
Cytomx Therapeutics Inc. (South San Francisco; CTMX)	Oct-15	\$12	\$20.87	73.9%
Aduro Biotech Inc. (Berkeley, Calif.; ADRO)	Apr-15	\$17	\$28.14	65.5%
Global Blood Therapeutics Inc. (South San Francisco; GBT)	Aug-15	\$20	\$32.33	61.7%
Voyager Therapeutics Inc. (Cambridge, Mass.; VYGR)	Nov-15	\$14	\$21.90	56.4%
Myokardia Inc. (South San Francisco; MYOK)	Oct-15	\$10	\$14.66	46.6%
Blueprint Medicines Corp. (Cambridge, Mass.; BPMC)	May-15	\$18	\$26.34	46.3%
Chiasma Inc. (Newton, Mass.; CHMA)	Jul-15	\$16	\$19.57	22.3%
Axovant Sciences Ltd. (Hamilton, Bermuda; NYSE:AXON)	Jun-15	\$15	\$18.03	20.2%
Aimmune Therapeutics Inc. (Brisbane, Calif.; AIMT)	Aug-15	\$16	\$18.45	15.3%
Edge Therapeutics Inc. (Berkeley Heights, N.J.; EDGE)	Oct-15	\$11	\$12.50	13.6%
Cidara Therapeutics Inc. (San Diego; CDTX)	Apr-15	\$16	\$17.16	7.3%
Axsome Therapeutics Inc. (New York; AXSM)	Nov-15	\$9	\$9.27	3.0%
Wave Life Sciences Pte. Ltd. (Singapore; WVE)	Nov-15	\$16	\$15.95	-0.3%
Neos Therapeutics Inc. (Grand Prairie, Texas; NEOS)	Jul-15	\$15	\$14.32	-4.5%
Tracon Pharmaceuticals Inc. (San Diego; TCON)	Jan-15	\$10	\$9.24	-7.6%
Intec Pharma Ltd. (Jerusalem; NTEC)	Aug-15	\$6	\$5.36	-10.7%
Mirna Therapeutics Inc. (Austin, Texas; MIRN)	Oct-15	\$7	\$6.25	-10.7%
Pronai Therapeutics Inc. (Vancouver, British Columbia; DNAI)	Jul-15	\$17	\$15.04	-11.5%
Dimension Therapeutics Inc. (Cambridge, Mass.; DMTX)	Oct-15	\$13	\$11.28	-13.2%
Colucid Pharmaceuticals Inc. (Burlingame, Mass.; CLCD)	May-15	\$10	\$8.37	-16.3%
Flex Pharma Inc. (Boston; FLKS)	Jan-15	\$16	\$12.45	-22.2%
Strongbridge Biopharma plc (formerly Cortendo AB, Trevose, Pa.; SBBP)	Oct-15	\$10	\$7.60	-24.0%
Regenxbio Inc. (Rockville, Md.; RGNX)	Sep-15	\$22	\$16.60	-24.5%
Carbylan Therapeutics Inc. (Palo Alto, Calif.; CBYL)	Apr-15	\$5	\$3.62	-27.6%
Zynerba Pharmaceuticals Inc. (Devon, Pa.; ZYNE)	Aug-15	\$14	\$10.07	-28.1%
Atyr Pharma Inc. (San Diego; LIFE)	May-15	\$14	\$9.83	-29.8%
Nantkwest Inc. (Cardiff-by-the-sea, Calif.; NK)	Jul-15	\$25	\$17.33	-30.7%
Catabasis Pharmaceuticals Inc. (Cambridge, Mass.; CATB)	Jun-15	\$12	\$7.93	-33.9%
Xbiotech Inc. (Austin, Texas; XBIT)	Mar-15	\$19	\$10.87	-42.8%
Nivalis Therapeutics Inc. (Boulder, Colo.; NVLS)	Jun-15	\$14	\$7.74	-44.7%
Biopharmx Corp. (Menlo Park, Calif.; NYSE MKT:BPMX)	Jun-15	\$2.75	\$1.52	-44.7%
Cerecor Inc. (Baltimore; CERC)	Oct-15	\$6.5	\$3.35	-48.5%
Eyegate Pharma Inc. (Waltham, Mass.; OTCQB:EYEG)	Feb-15	\$6	\$2.74	-54.3%
Vtv Therapeutics Inc. (High Point, N.C.; VTVT)	Jul-15	\$15	\$6.81	-54.6%
Viking Therapeutics Inc. (San Diego; VKTX)	Apr-15	\$8	\$3.41	-57.4%
Ritter Pharmaceuticals Inc. (Los Angeles; RTTR)	Jun-15	\$5	\$1.70	-66.0%
Bellerophon Therapeutics Inc. (Hampton, N.J.; BLPH)	Feb-15	\$12	\$2.96	-75.3%
Zosano Pharma Inc. (Fremont, Calif.; ZSAN)	Jan-15	\$11	\$2.28	-79.3%
NOTES	3411 13	7	72.20	, 5.5 /5

This chart does not include American Depository Share transactions or foreign IPOs. All stocks trade on Nasdag, unless otherwise noted.

Infectious disease

Continued from page 3

polar and negatively charged lipopolysaccharide outer layer tend to have a hard time getting through the inner plasma membrane, Mahadevia explained.

Rather than trying to kill the bacteria, Spero is developing drugs that interact with and disrupt the outer membrane on gramnegative bacteria, which it hopes will allow other drugs to enter the cell and kill it. Spero plans to start human studies for its lead molecule SPR741 by the end of this year.

In addition to the Protentiator drugs, Spero is working on two other classes of drugs further behind in development: drugs that target Multiple virulence factor Regulator (MvfR) and another that targets dihydrofolate reductase (DHFR).

Its MvfR program, which is partnered Roche AG, is designed to slow the virulence of *Pseudomonas* infections. MvfR is a transcription factor that controls the expression of virulence factors. (See *BioWorld Today*, April 10, 2014.)

"People die from infections because doctors can't find the right antibiotic in time, and the infection overwhelms the host," Mahadevia said. Inhibiting MvfR won't kill the bacteria, but it will limit the damage from the infection, buying more time for the antibiotics to work.

The DHFR program isn't a novel pathway since trimethoprim has been used for more than 50 years, but 30 percent of bacterial isolates are now resistant to trimethoprim. Spero is developing propargyl-linked antifolates that bind to and inhibit DHFR even in trimethoprim-resistant isolates.

KEEPING MUM

Amplyx Pharmaceuticals hasn't released much information on the mechanism of action for its antifungal, APX001, which it licensed from an undisclosed pharma company.

When looking for a molecule to license, Mike Grey, president and CEO of Amplyx, said the company was looking for something that was close to being ready to enter the clinic, had a novel target that would work on a broad spectrum so it could attack rare molds and those that are resistant to current treatments, and had intravenous (I.V.) and oral versions to allow patients to leave the hospital and finish their treatment.

"It checks those three boxes really well," Grey said of APX001.

The San Diego-based company plans to start a phase I trial on the I.V. version of APX001 in healthy volunteers in the second quarter and a separate trial for the oral version in the summer.

Assuming no safety concerns at the proper exposure level, Amplyx plans to start two phase II trials in 2017. One trial will compare APX001 to an active control in patients infected with Candida. Another open-label trial will treat patients with Aspergillus or rare molds that can be hard to identify.

Does APX001 need to be better than the current therapies? "Not

necessarily," said Ciara Kennedy, Amplyx's chief operating officer, pointing out that being noninferior might be good enough to get APX001 approved because of the emerging resistance to the drug. If APX001 has a better side effect profile or is able to combat strains that the current therapies can't, that would be a bonus.

Grey and Kennedy worked together at Lumena Pharmaceuticals Inc., which was acquired by Dublin-based Shire plc in 2014, begging the question of whether Amplyx might also get taken out before APX001 gets on the market. That's not the plan, Grey insisted, pointing out that the company now has funding to get through the phase II trials and begin preparations for the phase III program. (See *BioWorld Today*, May 13, 2014.)

"We do this with the intent of building a company but recognize that others may intervene before we get there," Grey said. //



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BIOTECH MONEY RAISED BY MONTH IN 2016								
Type of Financing	Jan	Total (\$M)						
Public offerings	\$1,541	\$1,541						
Public/other	\$580.94	\$580.94						
Private biotechs	\$1,113.47	\$1,113.47						
Total (\$M)	\$3,235.41	\$3,235.41						

Public offerings = Initial, follow-on. Private biotechs = Financings of private firms. Public/other = Other financings of public companies, including loans, bridge financings, exercises of warrants, debt offerings, rights offerings, standard private placements, PIPE financings and institutional offerings of registered stock.

Public financing of biotechnology companies

Commenced trading in January 2016

Company (symbol)#		Date comm.	Shares/ units (M)	Price	Shares out (M)@	Underwriters		Post- offering market cap (M)%
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INITIAL OFFERINGS TOTAL: \$0M

There were no IPOs completed in the month of January.

Number of IPOs in January: 0 Average value of January IPOs: \$0M Number of IPOs in 2016: 0

Total raised in IPOs in 2016: \$0M Average value of IPOs in 2016: \$0M

Average value of 1POs III 2010: \$010								
FOLLOW-ON	I OFFER	INGS TO	OTAL: \$1,	541M				
Acadia Pharmaceuticals Inc. (San Diego; ACAD) ¹	1/7/16	1/8/16	10.34S	\$29.00	111.24	BofA Merrill Lynch; J.P. Morgan Securities; Cowen and Co.; JMP Securities; Needham & Co.; H.C. Wainwright & Co.; Ladenburg Thalmann	\$300.00	\$3,225.96
Acceleron Pharma Inc. (Cambridge, Mass.; XLRN) ²	1/4/16	1/6/16	3.75S	\$40.00	36.95	Morgan Stanley; Leerink Partners; UBS Investment Bank; JMP Securities	\$150.00	\$1,478.00
Adamas Pharmaceuticals Inc. (Emeryville, Calif.; ADMS) ³	6/1/15	1/7/16	2.5S	\$23.00	20.92	Cowen and Co.; Piper Jaffray; William Blair; JMP Securities; Trout Capital	\$57.50	\$481.16
Aequus Pharmaceuticals Inc. (Vancouver, British Columbia; TSX-V:AQS) ⁴	12/14/15	1/11/16	3.5S	C\$0.50	N/A	N/A	\$1.23	\$0.00

Company (symbol)#	Date filed	Date comm.	Shares/ units (M)	Price	Shares out (M)@	Underwriters	Gross (US\$M)	Post- offering market cap (M)%
Agile Therapeutics Inc. (Princeton, N.J.; AGRX) ⁵	7/1/15	1/25/16	5.5S	\$6.35	27.8	William Blair; RBC Capital Markets; Janney Montgomery Scott; Cantor Fitzgerald; FBR	\$35.00	\$176.53
Akebia Therapeutics Inc. (Cambridge, Mass.; AKBA) ⁶	4/14/15	1/7/16	7.25S	\$9.00	37.9	Morgan Stanley; UBS Investment Bank; JMP Securities; Needham & Co.; Brean Capital	\$65.25	\$341.10
Ardelyx Inc. (Fremont, Calif.; ARDX) ⁷	7/20/15	1/8/16	8.625S	\$10.00	34.57	Citigroup; Leerink Partners; Wedbush Pacgrow; JMP Securities; Cantor Fitzgerald; Ladenburg Thalmann	\$86.25	\$345.70
Cempra Inc. (Chapel Hill, N.C.; CEMP) ⁸	5/7/15	1/8/16	4.16S	\$24.00	4.167	J.P. Morgan Securities; Jefferies; Cowen and Co.; Stifel, Nicolaus & Co.; Needham & Co.; Ladenburg Thalmann; WBB Securities	\$100.00	\$100.01
Collegium Pharmaceutical Inc. (Canton, Mass.; COLL) ⁹	1/4/16	1/8/16	2.75S	\$20.00	23.44	Jefferies; Piper Jaffray; William Blair; Needham; Janney Montgomery Scott	\$55.00	\$468.80
Epizyme Inc. (Cambridge, Mass.; EPZM) ¹⁰	1/7/16	1/8/16	15.33S	\$9.00	55.06	Citigroup; Leerink Partners; RBC Capital Markets; JMP Securities; Wedbush Pacgrow; Mizuho Securities; H.C. Wainwright; Maxim Group	\$137.97	\$495.54
Galena Biopharma Inc. (San Ramon, Calif.; GALE) ¹¹	12/22/15	1/7/16	19.77S and W for 11.86S	\$1.10	181.67	Raymond James & Associates; Roth Capital Partners; Noble Financial Capital Markets; FBR Capital Markets; Maxim Group	\$21.75	\$199.84
Otonomy Inc. (San Diego; OTIC) ¹²	9/14/15	1/8/16	5S	\$20.00	29.24	BofA Merrill Lynch; Cowen and Co.; Piper Jaffray; Sanford C. Bernstein; Suntrust Robinson Humphrey	\$100.00	\$584.80
Prothena Corp. plc (Dublin; PRTA) ¹³	4/6/15	1/7/16	2.25S	\$53.00	33.77	RBC Capital Markets; UBS Investment Bank; Barclays; Oppenheimer & Co.; Wedbush Pacgrow; Ladenburg Thalmann; Lifesci Capital	\$119.25	\$1,789.81

Company (symbol)#	Date filed	Date comm.	Shares/ units (M)	Price	Shares out (M)@	Underwriters	Gross (US\$M)	Post- offering market cap (M)%
Psivida Corp. (Watertown, Mass.; PSDV) ¹⁴	12/2/15	1/8/16	4.44S	\$4.00	33.63	Ladenburg Thalmann; Northland Securities	\$17.80	\$134.52
Sage Therapeutics Inc. (Cambridge, Mass.; SAGE) ¹⁵	1/5/16	1/7/16	3.16S	\$47.50	32.02	J.P. Morgan Securities; Goldman, Sachs & Co.; Leerink Partners; Cowen and Co.; Canaccord Genuity	\$150.00	\$1,520.95
Therapeuticsmd Inc. (Boca Raton, Fla.; NYSE MKT:TXMD) ¹⁶	11/17/15	1/7/16	17.4S	\$8.25	193.08	Goldman, Sachs & Co.; Cowen and Co.; Stifel; Guggenheim Securities	\$144.00	\$1,592.91

Number of follow-on offerings in January: 16 Average value of January follow-ons: \$96.31M Number of follow-on offerings in 2016: 16 Total raised in follow-ons in 2016: \$1,541M Average value of follow-ons in 2016: \$96.31M

NOTES

- # Unless otherwise indicated, shares are traded on the Nasdaq exchange.
- @ This column reflects the shares outstanding following the offering, when disclosed.
- % Market capitalization is calculated based on the offering price.

Currency conversions are based on exchange rates at the time of the deal. This chart includes only biotech companies that develop therapeutics.

- ¹ Acadia's overallotment option: 1.55M shares.
- ² Acceleron's overallotment option: 562,500 shares.
- ³ Adamas' overallotment option: 375,000 shares.
- ⁴ Aequus raised C\$1.75M (US\$1.23M) in the Canadian offering.
- ⁵ Agile's overallotment option: 826,771 shares.
- ⁶ Akebia's overallotment option: 1.09M shares.
- ⁷ Includes Ardelyx's proposed offering to raise 1.125M shares.
- 8 Cempra's overallotment option: 625,000 shares.
- ⁹ Collegium's overallotment option: 412,500 shares.
- ¹⁰ Includes Epizyme's overallotment option: 2M shares.
- ¹¹ Galena's overallotment option: 2.97M shares and warrants to purchase up to 1.8M shares.
- ¹² Otonomy's overallotment option: 750,000 shares.
- ¹³ Prothena's overallotment option: 337,500 shares.
- ¹⁴ Includes Psivida's overallotment option: 440,000 shares.
- ¹⁵ Sage's overallotment option: 473,684 shares.
- ¹⁶ Includes Therapeuticsmd's overallotment option: 2.272 million shares.

Public financing of biotechnology companies

Filed and pending IPOs

Company (symbol)#*	Date filed	Shares/ units (M)	Price	Shares out@	Lead, other underwriters	Gross (US\$M)
INITIAL OFFERINGS						
Advanced Inhalation Therapies Ltd. (Tel Aviv, Israel; AITP) ¹	8/27/15	0.675U	N/A	4.44	Joseph Gunnar	\$10.125
Anaptysbio Inc. (San Diego; ANAB)	9/9/15	N/A	N/A	N/A	Credit Suisse; Stifel; JMP Securities; Wedbush Securities	\$86.25
Anterios Inc. (New York; ANTE)	4/2/15	3.95	\$12-\$14	13.5	Stifel (co-lead); RBC Capital Markets (co-lead); JMP Securities; Needham & Co.	\$50.7
Audentes Therapeutics Inc. (San Francisco; BOLD)	1/4/16	N/A	N/A	N/A	BofA Merrill Lynch; Cowen and Co.; Piper Jaffray; Wedbush Pacgrow	\$86.25
Avexis Inc. (Bannockburn, Ill.; AVXS)	1/20/16	4.25S	\$19-\$21	21.9	Goldman, Sachs & Co.; BMO Capital Markets; Chardan; Jefferies	\$85.00
Bavarian Nordic A/S (Copenhagen; BAVN) ²	1/5/16	ADS	N/A	N/A	Cowen and Co.; Piper Jaffray; Nomura Securities International	N/A
Biocardia Inc. (San Carlos, Calif.; BCDA)	6/16/15	3.85S	\$12-\$14	11.2	Cantor Fitzgerald; Roth Capital Partners; Maxim Group	\$50.05
Cancer Prevention Pharmaceuticals Inc. (Tucson, Ariz.; NYSE:CPP)	12/24/15	1.92S	\$12-\$14	7.42	Aegis Capital; Maxim Group	\$24.96
Clearside Biomedical Inc. (Alpharetta, Ga.; CLSD)	1/8/16	N/A	N/A	N/A	RBC Capital Markets; Stifel, Needham & Co.; Wedbush Pacgrow Healthcare	\$57.50
Corvus Pharmaceuticals Inc. (Burlingame, Calif.; CRVS)	1/4/16	N/A	N/A	N/A	Credit Suisse; Cowen and Co.; Guggenheim Securities; Cantor Fitzgerald; BTIG	\$115.00
Gensight Biologics SA (Paris; GNST)	7/7/15	4.65ADS	\$13-\$15	N/A	Leerink; Evercore ISI; Canaccord Genuity	\$65.1
Lumena Pharmaceuticals Inc. (San Diego; LIVR)	4/2/14	N/A	N/A	N/A	Citigroup (co-lead); Cowen and Co. (co-lead); Leerink Partners (co-lead)	\$75.00
Mapi-Pharma Ltd. (Ness Ziona; MAPI)	1/26/16	3.125S	\$15-\$17	11.76	JMP Securities; FBR; Maxim Group	\$50
Merus BV (Utrecht, the Netherlands; MRUS)	10/22/15	N/A	N/A	N/A	Citigroup; Jefferies; Guggenheim Securities; Wedbush Pacgrow	\$60
Oncobiologics Inc. (Cranbury, N.J.; ONS)	1/15/16	N/A	N/A	N/A	Jefferies; Barclays; Cantor Fitzgerald	\$115.00
Plx Pharma Inc. (Houston; PLXP)	10/5/16	3.85	\$17-\$19	9.37	Raymond James; Maxim Group; Janney Montgomery Scott	\$68.4
Proteostasis Therapeutics Inc. (Cambridge, Mass.; PTI)	12/23/15	3.85S	\$12-\$14	16.7	Leerink Partners; RBC Capital Markets; Baird; H.C. Wainwright	\$50.1

Company (symbol)#*	Date filed	Shares/ units (M)	Price	Shares out@	Lead, other underwriters	Gross (US\$M)
Reata Pharmaceuticals Inc. (Irving, Texas; RETA)	1/4/16	N/A	N/A	N/A	Citigroup; Cowen and Co.; Piper Jaffray	\$80.00
Sancilio Pharmaceuticals Inc. (Riviera Beach, Fla.; SPCI)	8/31/15	N/A	N/A	N/A	UBS Investment Bank; Piper Jaffray; JMP Securities; FBR	\$86.25
Spring Bank Pharmaceuticals Inc. (Milford, Mass.; SBPH)	1/5/16	N/A	N/A	N/A	William Blair; Wedbush Pacgrow; BTIG	\$57.50
Syndax Pharmaceuticals Inc. (Waltham, Mass.; SNDX)	1/4/16	N/A	N/A	N/A	Morgan Stanley; Citigroup; JMP Securities; Oppenheimer & Co.	\$86.25
Therapure Biopharma Inc. (Mississauga, Ontario; TSX)	11/26/15	6.15S - 7.27S	C\$11-\$13	N/A	GMP Securities; CIBC World Markets; National Bank Financial	C\$80
Tigenix NV (Leuven, Belgium; TIG) ³	12/24/15	ADS	N/A	N/A	Canaccord Genuity; Nomura; KBC Securities; Chardan Capital Markets	N/A
Visterra Inc. (Cambridge, Mass.; VIST)	1/5/16	N/A	N/A	N/A	Leerink Partners; Stifel; Needham & Co.; Wedbush Pacgrow	\$69.00
Viventia Bio Inc. (Winnipeg, Manitoba; VITA)	10/21/16	N/A	N/A	N/A	Leerink Partners; Cowen and Co.; Guggenheim Securities	\$86.25

Unless otherwise indicated, shares are traded on the Nasdaq exchange.

- * Stock symbols for companies seeking to complete IPOs are proposed.
- @ This column reflects the shares outstanding following the offering, when disclosed.

N/A = Not available, applicable or reported.

The value of all offerings is based on either the midpoint of the price range listed in the company's SEC filing or the maximum aggregate offering price listed in the SEC filing.

This chart includes only biotech companies that develop therapeutics.

- Advanced Inhalation's units each consist of two ordinary shares and three warrants each to purchase one ordinary share.
- ² Bavarian Nordic filed Form F-1 for a proposed IPO of American Depositary Shares to be listed on Nasdaq under the symbol BAVN.
- ³ Tigenix filed a Form F-1 for a proposed IPO of its American Depository Shares to be listed on Nasdaq. The company's ordinary shares are currently listed on Euronext Brussels.

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2016 TOP PRIVATE FINANCINGS OF PUBLIC COMPANIES								
Company	Amount raised (\$M)							
Novavax Inc.	\$300							
Halozyme Therapeutics Inc.	\$150							
Transgene SA	\$32							
Omeros Corp.	\$22.3							
Cardiome Pharma Corp.	\$20							
Essa Pharma Inc.	\$15							
CASI Pharmaceuticals Inc.	\$10.1							
Apricus Biosciences Inc.	\$10							
Arno Therapeutics Inc.	\$7.4							
Capnia Inc.	\$5.4							

2016 TOP FINANCINGS OF PRIVATE COMPANIES							
Company	Amount raised (\$M)						
Zai Labs Ltd.	\$100						
C4 Therapeutics	\$73						
Nextcure Inc.	\$67						
Millendo Therapeutics Inc.	\$62						
Zymeworks Inc.	\$61.5						
Codiak Biosciences Inc.	\$61						
Cardiorentis AG	\$60						
Adicet Bio Inc.	\$51						
Petra Pharma Corp.	\$48						
Bioatla LLC	\$45						

Other financings of public biotechnology companies January 2016

Company (location)	Type of financing	Number of shares, units or warrants (M)	Amount raised (M)	Investors; placement agents; details	Date
TOTAL: \$580.94M					
Aequus Pharmaceuticals Inc. (Vancouver, British Columbia)	Private placement	1.795	\$0.7	Aequus raised C\$1M (US\$0.7M) in a private placement of 1.79M common shares at C\$0.50 each	1/11/16
Amarantus Bioscience Holdings Inc. (San Francisco)	Investment	N/A	\$2.5	Amarantus closed a \$1M investment, in the form of series H convertible preferred stock and warrants, from an undisclosed investor; the company also entered a deal with International Fusion to provide funding of up to \$1.5M over the next five weeks	1/28/16
Apricus Biosciences Inc. (San Diego)	Registered direct offering	11.36S	\$10	Apricus raised \$10M through the offering of 11.36M shares of common stock and warrants to purchase up to 5.68M shares; the shares and warrants are being sold in combination, consisting of one share of common stock and a warrant to purchase half of a share of common stock at \$0.88 each; investors include Sarissa Capital and Aspire Capital	1/15/16
Arno Therapeutics Inc. (Flemington, N.J.)	Private placement of common stock	N/A	\$7.4	Arno completed a private placement resulting in gross proceeds of about \$7.4M; the financing was led by existing investors, including affiliates of Chairman Arie Belldegrun, Miami-based Opko Health Inc., Soros Fund Management LLC, Commercial Street Capital LLC, Pontifax, Bonderman Family Limited Partnership, Perceptive Advisors LLC and Auriga Capital Management	1/14/16

Company Type of financing				Investors; placement agents; details	Date
Capnia Inc. (Redwood City, Calif.)	I		\$5.4	Capnia closed the \$5.4M second tranche of its \$10M convertible preferred stock and warrant offering with funds managed by Sabby Management LLC; Capnia closed the \$4.6M first tranche in October	1/13/16
Cardiome Pharma Corp. (Vancouver, British Columbia)	Private placement of common shares	N/A	\$20	Cardiome Pharma executed a purchase agreement with Lincoln Park Capital Fund LLC to purchase up to \$20M worth of common shares	1/13/16
CASI Pharmaceuticals Inc. (Rockville, Md.)	Private placement of common stock and warrants	on the sale of approximately 8.45M shares priced at \$1.19 apiece and about 1.69M warrants with a purchase price of 12.5 cents apiece		1/20/16	
Essa Pharma Inc. (Vancouver, British Columbia)	placement of		\$15	Essa Pharma completed a private placement of 4.54M units at \$3.30 each to raise \$15M in a financing led by Clarus Lifesciences, with participation from Deerfield Management and others	1/7/16
Halozyme Therapeutics Inc. (San Diego)	Royalty credit agreement	t		Halozyme entered a \$150M credit agreement, secured by future royalties of Enhanze products; the financing will be facilitated through investment funds managed by Pharmakon Advisors and Athyrium Capital Management	1/5/16
Novavax Inc. (Gaithersburg, Md.)	Gaithersburg, placement of		\$300	Novavax offered \$300M in convertible senior unsecured notes that will mature on Feb. 1, 2023, plus an option for an additional \$30M of notes; Citigroup and J.P. Morgan are acting as joint bookrunning managers; Piper Jaffray and Guggenheim Securities are serving as co-lead managers	1/27/16
Omeros Corp. (Seattle) Nondilutive senior credit facility N/A		N/A	\$22.3	Omeros closed the \$50M credit facility with Oxford Finance and East West Bank; some of the loan was used to repay debt, and the remaining net proceeds of \$22.3M are for general corporate purposes and working capital	1/8/16
Onconova Therapeutics Inc. (Newtown, Pa.)	Registered direct offering	1.9S and 1.9W	\$1.84	Onconova raised \$1.84M from a single institutional investors who bought 1.9M shares at \$0.95 each, plus 1.9M warrants to purchase one-half of a share each at \$1.15 per share	1/7/16
OWC Pharmaceutical Research Corp. (Petach Tikvah, Israel)	Equity purchase agreement	N/A	\$0.75	OWC entered a \$750,000 equity purchase agreement with Kodiak Capital Group LLC	1/12/16

Company (location)	Type of financing	Number of shares, units or warrants (M)	Amount raised (M)	Investors; placement agents; details	Date
Pacgen Life Sciences Corp. (Vancouver, British Columbia)	Private placement of units	5.3U	\$0.32	Pacgen plans a nonbrokered private placement of up to 5.3M units at a subscription price of 6 cents apiece for gross proceeds of up to \$318,000; each unit will consist of one common share and a warrant to purchase half of one common share	1/20/16
Pharmacyte Biotech Inc. (Silver Spring, Md.)	Private placement	N/A	\$1.02	Pharmacyte raised an additional \$1.02M through a private placement with Berkshire Capital Management Co. Inc. and SPYR Inc.	1/15/16
Tiziana Life Sciences plc (London)	Unsecured convertible loan	N/A	\$1.02	Tiziana raised £709,406 (US\$1.02M) through the issue of 472,938 unsecured convertible loan notes to certain existing investors	1/14/16
Transgene SA (Strasbourg, France)	Loan	N/A	\$32.59	Transgene secured a €20M (US\$21.9M) loan from the European Investment Bank under the Infectious Diseases Finance Facility program, which will be released in two tranches; a second financing involves a commitment from major shareholder the Institut Merieux to provide additional funding of about €10M	1/8/16

This chart does not include real estate or manufacturing plant financings, or debt deals done to replace existing debt. Loan money is included in the total only when it is drawn down, if disclosed.

Currency conversions are based on exchange rates at the time of the deal.

The date indicated refers to the *BioWorld Today* issue in which the news item can be found.

N/A = Not applicable; ND = Not disclosed.

This chart includes only biotech companies that develop therapeutics.

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Venture capital & other investments in private biotechnology companies January 2016

Company	Location	Amt. (M)	Details	Date
TOTAL: \$1,113.47M				
Adagene Inc. Suzhou, China		\$28	Adagene closed a \$28M series B round led by GP Healthcare Capital, with participation from new investor New World TMT and current investors Eight Roads Ventures China, F-Prime Capital and Wuxi Corporate Venture Fund; China Renaissance acted as the exclusive financial advisor	1/29/16
Adicet Bio Inc.	Menlo Park, Calif.	\$51	Adicet raised \$51M in a series A round led by Orbimed and included Novartis Venture Fund as well as Pontifax	1/27/16
Aelix Therapeutics SL	Barcelona, Spain	\$12	Raised €11.5M (US\$12.6M) in a series A round led by Ysios Capital, with participation from Johnson & Johnson Innovation – JJDC Inc. and Caixa Capital Risc	1/13/16
Alector LLC	San Francisco			1/8/16
Aslan Pharmaceuticals Pte. Ltd.	Singapore	\$9	Aslan closed its series C round adding \$9M to the \$34M raised in December for a total of \$43M; the latest investment came from MVP Capital Partners, in addition to investors previously announced	1/8/16
Bamboo Therapeutics Inc.	Chapel Hill, N.C.	ND	Cure Duchenne Ventures LLC is investing in Bamboo an undisclosed amount	1/12/16
Bioatla LLC	San Diego	\$45	Bioatla said Global BIO Impact Fund committed to invest \$45M, including \$15M in Bioatla equity by the end of January and \$30M by the end of March	1/12/16
Blend Therapeutics Inc.	Watertown, Mass.	\$38	Blend Therapeutics raised \$38M in a series C financing co-led by Novo A/S and New Enterprise Associates; Flagship Ventures, Nanodimension and Eminent Venture Capital also participated	1/28/16
C4 Therapeutics			1/7/16	
Cardiorentis AG	Zug, Switzerland	\$60	Cardiorentis raised CHF60M (US\$60M) in a series B financing led by three new private investors	1/12/16
Carsgen Therapeutics Ltd.	Shanghai	\$30	Carsgen completed a \$30M series B round led by KTB Ventures and Jolly Innovation Ventures, with participation from Kaitai Capital and JIC Genesisfountain Healthcare Ventures	1/26/16
Centauri Therapeutics Ltd.	London and Kent, U.K.	\$4.3	Centauri raised £3M (US\$4.3M) from Animatrix Capital LLP and private investors	1/20/16
Circle Pharma Inc.	South San Francisco	ND	Circle extended its seed funding round with an undisclosed investment from Shangpharma Investment Group Ltd.	1/8/16

Company	Location	Amt. (M)	Details					
Codiak Biosciences Inc.	Cambridge, Mass.	\$61	Codiak closed its \$61M series B round co-led by Arch Venture Partners and Flagship Ventures, with participation by the Alaska Permanent Fund, Alexandria Venture Investments, and Fidelity Management and Research Co.	1/27/16				
Deciphera Pharmaceuticals LLC	Waltham, Mass.	\$15	Deciphera increased its series B financing to more than \$90M with the addition of SV Life Sciences to the syndicate; the company raised \$75M in the initial closing in September 2015	1/6/16				
Elastagen Pty Ltd.	Sydney	\$9.18	Elastagen closed an A\$13M (US\$9.18M) series B round from new investors Korea Investment Partners (KIP), Amorepacific Ventures, and the Wellcome Trust; all existing investors including Brandon Capital Partners, GBS Ventures and ATP Innovations also participated	1/7/16				
Emmaus Life Sciences Inc.	Torrance, Calif.	\$1.7	Emmaus raised \$1.7M in gross proceeds by selling 377,778 common shares of stock to Korea Biomedical Science Institute as part of a collaboration agreement	1/27/16				
Iconic Therapeutics Inc.	South San Francisco	\$40	Iconic closed a \$40M series C round that included new investors HBM Healthcare Investments, Cormorant Asset Management and Osage University Partners; all of Iconic's existing investors, including MPM Capital, H.I.G. Capital and Lundbeckfund Ventures participated	1/12/16				
Inivata Ltd.	Cambridge, U.K.	\$42.2	Inivata raised £31.5M (US\$42.2M) in a series A round from Imperial Innovations plc, Cambridge Innovation Capital and Johnson & Johnson Development Corp., as well as new investor Woodford Patient Capital	1/27/16				
Isomerase Therapeutics Ltd.	Cambridge, Mass.	\$0.79	Neurovive Pharmaceutical AB, of Stockholm, acquired a 5% stake in Isomerase, through a payment of 6.8M Neurovive shares, including 738,533 newly issued shares, and plans to acquire an additional 5% stake this year through a cash payment of £550,000 (US\$792,500)	1/15/16				
Kodiak Sciences Inc.	Palo Alto, Calif.	\$34	Raised \$34M in a series B financing led by an undisclosed, U.Sbased life sciences-focused investor	1/13/16				
Lodo Therapeutics Corp.	New York			1/11/16				
Millendo Therapeutics Inc.	Ann Arbor, Mich.	\$62	Millendo raised \$62M in a series B investment led by New Enterprise Associates and included new investors Roche Venture Fund, Adams Street Partners, Altitude Life Science Ventures, Longwood Fund and Renaissance Venture Capital Fund, along with current Millendo investors Frazier Healthcare Partners, Osage University Partners, 5AM Ventures and the Regents of the University of Michigan	1/6/16				
Nextcure Inc.	Germantown, Md.	\$67	Nextcure raised \$67M from a series A round from Canaan Partners, Lilly Asia Ventures, Orbimed Advisors, Pfizer Inc. and Sofinnova Ventures, who were joined by Alexandria Venture Investments	1/7/16				

Company	Location	Amt. (M)	Details	Date
Petra Pharma Corp.	New York	\$48	Petra Pharma became the first life science start-up for Accelerator Corp., raising \$48M in a series A round from Abbvie Inc., Alexandria Venture Investments, Arch Venture Partners, Eli Lilly and Co., Harris & Harris Group Inc., Innovate NY Fund, Johnson & Johnson Innovation/JJDC Inc., The Partnership Fund for New York City, Pfizer Venture Investments, Watson Fund and Wuxi Pharmatech	1/6/16
Rasrx LLC	San Luis Obispo, Calif.	ND	Rasrx received an undisclosed investment from CureDuchenne Ventures LLC	1/6/16
Rubius Therapeutics Inc.	Cambridge, Mass.	\$25	Rubius received a \$25M investment from Flagship Ventures	1/4/16
Scholar Rock Inc.	Cambridge, Mass.	\$36	Scholar Rock raised \$36M in a series B financing led by Fidelity Management and Research Co., with participation from Cormorant Asset Management and from Scholar Rock's existing investors: Polaris Partners, Timothy Springer, Arch Venture Partners, Ecorl Capital and the Kraft Group	1/5/16
Sino Health (part of Sinopharm Group Co. Ltd.; Beijing)	Beijing	ND	Frontline Bioventures led a series A round for Sino Health, an invested company of Sinopharm	12/7/15
Syros Pharmaceuticals Inc.	Watertown, Mass.	\$40	Syros raised \$40M through a preferred stock transaction led by Deerfield Management Co., and including Casin Capital, Fidelity Management and Research Co., Wuxi Healthcare Ventures, Polaris Partners, Redmile Group, Aisling Capital and Alexandria Venture Investments	1/14/16
Tmunity Therapeutics Inc.	Philadelphia	\$10	Tmunity raised \$10M in equity financing from Penn Medicine and Lilly Asia Ventures	1/13/16
Vasopharm GmbH	Wurzburg, Germany	\$21.7	Vasopharm raised €20M (US\$21.7M) in a series G round co-led by existing investors Entrepreneurs Fund, Heidelberg Capital Private Equity and new investor, U.Kbased Fort Rock Capital; existing investors Bayern Kapital and funds advised by Hanseatic Asset Management LBG also participated	1/22/16
Xeris Pharmaceuticals Inc.	Austin, Texas	\$41	Xeris raised \$41M in a series C round led by the Redmile Group and including other new investors Deerfield Management and Sabby Management, as well as The McNair Group and other existing investors	1/8/16
Zai Labs Ltd.	Shanghai	\$100	Raised more than \$100M in a series B financing from Advantech Capital and Orbimed, along with series A backers Qiming Ventures, Sequoia and TF Capital	1/11/16
Zymeworks Inc.	Vancouver, British Columbia	\$61.5	Zymeworks closed a \$61.5M series A mezzanine financing co-led by BDC Capital and Lumira Capital, who were joined by Eli Lilly and Co., Summit, Celgene Corp., CTI Life Sciences Fund and the Fonds de solidarite FTQ, as well as Perceptive Advisors, Teralys Capital, Northleaf Venture Catalyst Fund, Brace Pharma Capital, Merlin Nexus and others	1/11/16

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This chart includes only biotech companies that develop therapeutics.

ND = Not disclosed.

Milestone payments from corporate partners January 2016

Company (location)	Partner (location)	Amt. (M)	Details	Date
Total: \$131.15M (Year to D	Pate: \$131.15M)			
Biontech AG (Mainz, Genmab A/S (Copenhagen, Denmark)		ND	Biontech has triggered two milestone payments to be paid by Genmab to Biontech, as part of the co-development and commercialization agreement signed in May 2015	1/13/16
Cytomx Therapeutics Inc. (South San Francisco)	Bristol-Myers Squibb Co. (New York)	\$10	For the selection of a third target in accordance with the firms' May 2014 oncology collaboration	1/21/16
Galapagos NV (Mechelen, Belgium)	Abbvie Inc. (North Chicago)	\$10	For the initiation of a randomized, double-blind, placebo-controlled phase I study over a range of doses of cystic fibrosis candidate GLPG2222 in healthy volunteers in Belgium	1/20/16
Immunocore Ltd. (Oxford, U.K.)	Glaxosmithkline plc (London)	ND	For the selection of the first candidate as part of the firms' 2013 discovery collaboration; the selected Immtac, based on Immunocore's T-cell receptor technology, is designed to address a number of different cancer indications	1/7/16
Immunogen Inc. (Waltham, Mass.)	Bayer AG (Leverkusen, Germany)	ND	For the initiation of a global phase II study designed to support registration of anetumab ravtansine (BAY 94-9343) as a treatment for mesothelioma	1/27/16
Incyte Corp. (Wilmington, Del.)	Eli Lilly and Co. (Indianapolis)	\$35	For the submission of an NDA for oral once-daily baricitinib to treat moderately to severely active rheumatoid arthritis	1/20/16
Ionis Pharmaceuticals Inc. (Carlsbad, Calif.) Biogen Inc. (Cambridge, Mass.)		\$2.15	For completing the target enrollment of the phase III CHERISH study aimed at supporting marketing approval of nusinersen in children with spinal muscular atrophy	1/13/16
Ionis Pharmaceuticals Inc. (Carlsbad, Calif.)	Glaxosmithkline plc (London)	\$1.5	For the start of a phase I study of IONIS-HBV-LRx	1/14/16
Oncomed Pharmaceuticals Inc. (Redwood City, Calif.)	Celgene Corp. (Summit, N.J.)	\$72.5	A \$70M safety milestone from Celgene based on an analysis of available phase Ib and blinded interim phase II trial data associated with the demcizumab program; a \$2.5M milestone for clinical candidate designation of an undisclosed preclinical immuno-oncology program	1/6/16
Zymeworks Inc. (Vancouver, British Columbia)	Eli Lilly and Co. (Indianapolis)	ND	For the successful achievement of a research milestone in its collaboration with Lilly in the development of an immune-modulating bispecific antibody using the company's Azymetric platform	1/20/16

NOTES

Currency conversions are based on exchange rates at the time of the deal.

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ND = Not disclosed.

10 BIGGEST U.S. WINNERS FOR THE WEEK											
Share Price By P	ercent	Share Price By Dollars									
Sinovac Biotech	40.44	Bluebird Bio	6.37								
Bluebird Bio	15.40	Celyad	3.69								
Aimmune Thera	14.04	Pacira Pharma	3.68								
Celyad	10.51	Gilead Sciences	2.14								
Collegium Pharma	10.10	Sinovac Biotech	2.03								
Innoviva	10.08	Aimmune Thera	1.92								
Sciclone Pharma	9.64	Collegium Pharma	1.72								
Cempra	8.01	Cempra	1.38								
Coherus Biosci	7.99	Forward Pharma	1.18								
Forward Pharma	7.35	Coherus Biosci	1.06								

10 BIGGEST U.S. LOSERS FOR THE WEEK											
Share Price By P	ercent	Share Price By D	Dollars								
Axovant Sciences	-29.50	Regeneron Pharma	-23.48								
Nantkwest	-23.88	Shire	-10.98								
Edge Thera	-18.36	Biogen	-9.19								
Fibrogen	-17.90	Intercept Pharma	-7.72								
Versartis	-15.98	Amgen	-7.69								
Neurocrine Biosci	-15.42	Ligand Pharma	-7.47								
Uniqure	-15.03	Jazz Pharma	-6.97								
Flexion Thera	-14.73	Neurocrine Biosci	-6.56								
La Jolla Pharma	-14.46	Kite Pharma	-6.02								
Lexicon	-14.33	Biomarin Pharma	-5.61								

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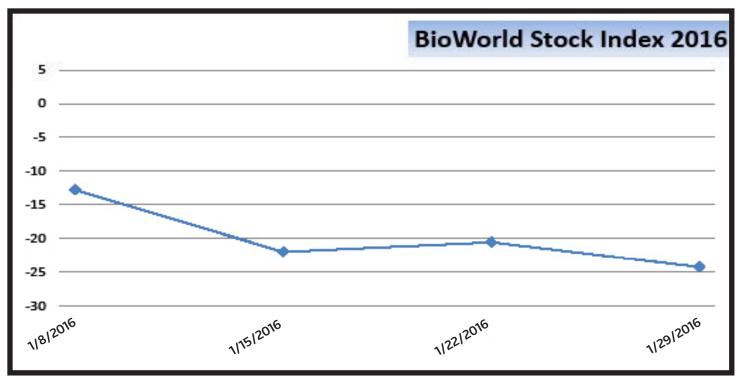
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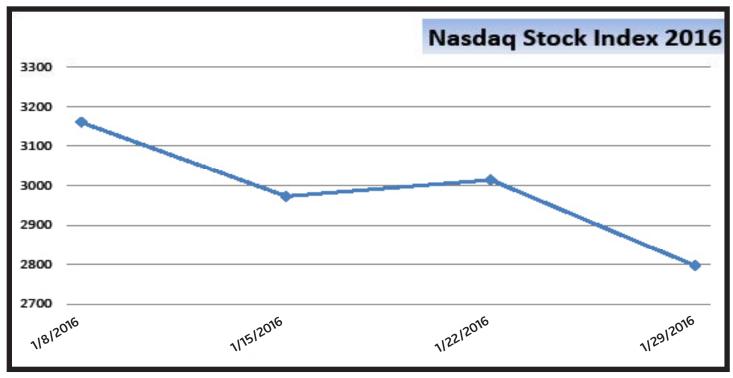
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These graphs compare the performance of the biotech stocks for all of 2016 using two different measures. The BioWorld Stock Indicator measures the average percent change year to date in the approximately 352 U.S. bioharma stocks that are covered weekly in *BioWorld Insight*. The Friday closing price of each stock on the list is compared either to its 2015 closing price (12/31/15) or its IPO price (if the stock started trading in 2016), and expressed as a percent change. Then the percent changes for all stocks on the list are added and subsequently

divided by the total number of stocks listed. The Nasdaq Biotech Index comprises 190 biopharma securities that are listed on Nasdaq. The companies must have a minimum market cap of \$200M to be included on the list. The index is market-value weighted, with the representation of each stock in the index being proportional to its closing price times the total number of shares outstanding, relative to the total market value of the index.



BIOWORLD STOCK REPORT FOR PUBLIC BIOTECHNOLOGY COMPANIES

COMPANY	SYMBOL	CLOSE 1/29	CLOSE 2/5	%CHA WK	NGE VOL YTD (000)	COMPANY	SYMBOL	CLOSE 1/29	CLOSE 2/5	%CHANGE	
Abeona Thera	ABEO	2.61	2.4	-8.05	-28.57 160	Celladon	CLDN	1.12	1.11	-0.89 -24	
Acadia Pharma	ACAD	20.69	19.36	-6.43	-45.69 13436	Celldex Therap	CLDX	8.3	7.26	-12.53 -53	
Acceleron Pharma	XLRN	30.7	26.59	-13.39	-45.47 2880	Cellectis	CLLS	22.36	20.41	-8.72 -34	
Acelrx Pharma	ACRX	3.61	3.52	-2.49	-8.57 1176	Cellular Biomedicine	CBMG	13.8	17.8		7.17 535
Achaogen	AKAO	3.62	3.8	4.97	-33.80 162	Cel-Sci	CVM	0.4757	0.4621		.89 1843
Achillion	ACHN	6.76	6.32	-6.51	-41.43 8891	Celsion	CLSN	1.32	1.26	-4.55 -34	.38 237
Aclaris Thera	ACRS	22.23	21.54	-3.10	-20.04 93	Celyad	CYAD	35.11	38.8	10.51 -28	
Acorda Therap	ACOR	36.82	36.67	-0.41	-14.28 2475	Cempra	CEMP	17.23	18.61	8.01 -40	
Adamas Pharma	ADMS	17.14	15.25	-11.03	-46.15 1953	Cerulean Pharma	CERU	2.4	2.29	-4.58 -18	3.21 322
Adamis Adaptimmune	ADMP ADAP	4.75 7.07	4.68 7.12	-1.47 0.71	-13.33 104 -40.96 1453	Cerus Chemocentryx	CERS CCXI	5.43 3.72	5.43 3.6	-3.23 -55	
Adma Biologics	ADMA	6.035	5.54	-8.20	-31.35 76	Chiasma	CHMA	10.3	10.15	-1.46 -48	
Aduro Biotech	ADRO	14.48	14.38	-0.69	-48.90 1990	Chimerix	CMRX	7.7	6.93	-10.00 -22	
Advanced Acceler	AAAP	24.88	25.76	3.54	-17.62 209	Cidara Therap	CDTX	11.66	10.92	-6.35 -36	.36 218
Advaxis	ADXS	6.82	6.35	-6.89	-36.88 3842	Cleveland Biolabs	CBLI	3.791	3.41	-10.05 -2	.29 102
Aegerion Pharma	AEGR	7.08	7.05	-0.42	-30.20 2410	Clovis Oncology	CLVS	20.92	19.87	-5.02 -43	.23 4322
Aeolus	AOLS AERI	0.2034 16.54	0.205 15.22	0.79 -7.98	-14.58 61 -37.49 1769	Codexis Coherus Biosci	CDXS CHRS	4.05 13.26	3.91 14.32	-3.46 -7	.57 270 .63 2350
Aerie Pharma Aeterna Zentaris	AEZS	3.25	3.09	-4.92	-31.03 1138	Collegium Pharma	COLL	17.03	18.75	10.10 -31	.82
Affimed Thera	AFMD	3.32	3.2	-3.61	-55.06 954	Colucid Thera	CLCD	5.67	5.75	1.41 -31	.30 67
Affymax	AFFY	0.0817	0.0853	4.41	18.47 123	Compugen	CGEN	4.71	4.69	-0.42 -26	.60 677
Agenus	AGEN	3.15	3	-4.76	-33.92 5976	Conatus Pharma	CNAT	1.74	1.84	5.75 -3	5.11 7444
Agile Thera	AGRX	6.1	5.76	-5.57	-40.98 600	Concert Pharma	CNCE	15.27	14.2	-7.01 -25	5.14 699
Agios Pharma	AGIO	42.22	38	-10.00	-41.47 8824	Contrafect	CFRX	3.27	3.4	3.98 -28	.42 132
Aimmune Thera	AIMT	13.68	15.6	14.04	-15.45 641	Corcept	CORT	3.65	3.39		.93 1387
Akebia Thera	AKBA	7.33	7.44	1.50	-42.41 1518	CorMedix	CRMD	1.78	1.62		.20 433
Albany Molecular	AMRI	16.32	15.45	-5.33	-22.17 1391	CTI Biopharma	CTIC	1.26	1.12	-11.11 -8	.94 4949
Alcobra	ADHD	5.12	5.01	-2.15	-20.22 467	Curis	CRIS	1.64	1.42	-13.41 -51	
Alder Biopharma	ALDR	24.18	22.14	-8.44	-32.97 3993	Cyclacel Pharma	CYCC	0.36	0.365	1.39 -27	
Aldeyra Thera	ALDX	4.81	4.1499	-13.72	-38.79 31	Cytokinetics	CYTK	7.7	6.91	-10.26 -33	.94 2094
Alexion Pharma	ALXN	145.93	142.28	-2.50	-25.41 15615	Cytomx Thera	CTMX	15.61	14.72	-5.70 -29	.47 298
Alexza Pharma	ALXA	0.3376	0.3198	-5.27	-54.31 624	Cytrx	CYTR	1.84	1.77	-3.80 -33	3.21 1945
Alimera Sciences	ALIM	2.31	2.2	-4.76	-9.09 294	DBV Technologies	DBVT	25.99	24.26	-6.66 -33	3.19 635
Alkermes	ALKS	32.01	32.17	0.50	-59.47 11505	Depomed	DEPO	15.34	16.14	-5.82 -23	.98 8895
Alnylam Pharma	ALNY	68.94	65.59	-4.86	-30.33 6653	Dermira	DERM	28	26.37		8.81 606
Amag Pharma	AMAG	22.91	23.68	3.36	-21.56 4399	Dicerna Pharma	DRNA	6.56	5.92	-9.76 -50	
Amarin	AMRN	1.36	1.39	2.21	-26.46 4304	Dimension Thera	DMTX	7.8	6.85	-12.18 -39	
Amgen	AMGN	152.73	145.04	-5.04	-10.65 22712	Dipexium Pharma	DPRX	8.09	7.32	-9.52 -34	.64 164
Amicus	FOLD	6.04	5.99	-0.83	-38.25 10493	Discovery Labs	DSCO	2.38	2.47	3.78 -15	
Amphastar Pharma	AMPH	12.05	11.05	-8.30	-22.35 1270	Durect	DRRX	1.2	1.03	-14.17 -53	
Ampio Pharma	AMPE	2.38	2.1	-11.76	-40.00 482	Dynavax	DVAX	24.09	21.05	-12.62 -12	.87 3957
Anacor Pharma	ANAC	75.13	72.91	-2.95	-35.46 4544	Edge Thera	EDGE	11.11	9.07	-18.36 -27	
Ani Pharma	ANIP	32.01	30.61	-4.37	-32.17 887	Egalet	EGLT	8.42	8.76	4.04 -20	
Anthera Pharma	ANTH	3.23	2.67	-17.34	-42.46 3171	Eleven Biothera	EBIO	0.3204	0.2991	-6.65 -90	
Apotose Biosci	APTO	2.94	2.76	-6.12	9.09 77	Emergent Biosol	EBS	36.6	35.78	-2.24 -10	
Applied Genetic Tech	AGTC	14.61	14.15	-3.15	-30.64 427	Emisphere Tech	EMIS	0.635	0.58	-8.66 -14	.07 63
Aquinox Pharma	AQXP	10.49	11.13	6.10	-10.82 2120	Enanta Pharma	ENTA	25.7	22.74	-11.52 -3°	1.13 1286
Aradigm	ARDM	3.611	3.15	-12.77	-20.65 56	Endocyte	ECYT	3.35	3.02	-9.85 -24	.69 742
Ardelyx	ARDX	10.41	9.82	-5.67	-45.81 988	Enzon Pharma	ENZN	0.49	0.4779	-2.47 -29	.98 553
Arena Pharma	ARNA	1.51	1.57	3.97	-17.37 11444		EPRS	3.23	3.18	-1.55 2	2.91 254
Argos Thera	ARGS	2.7	3.14	16.30	35.93 783	Epirus Biopharma Epizyme	EPZM	9.09	9.35	2.86 -41	.64 2327
Ariad Pharma	ARIA	5.02	5.07	1.00	-18.88 19301	Esperion Thera	ESPR	14.88	15.54).19 2823
Argule	ARQL	1.75	1.67	-4.57	-23.04 269	Evoke Pharma	EVOK	3.16	3.04		.88 59
Array Biopharma	ARRY	3.09	2.91	-5.83	-31.04 19582	Exelixis	EXEL	4.62	4.54	-1.73 -19	.50 23447
Arrowhead Research	ARWR	3.48	3.46	-0.57	-43.74 4119	Eyegate Pharma	EYEG	1.7	3.25	91.18 18	
Ascendis Pharma	ASND	19.04	18.91	-0.68	3.22 249	Fate Thera	FATE	2.155	1.9	-11.83 -43	
Assembly Bio	ASMB	5.12	5.1	-0.39	-32.09 174	Fibrogen	FGEN	20.28	16.65	-17.90 -45	
Atara Biothera	ATRA	18.1	17.16	-5.19	-35.02 998	Five Prime Thera	FPRX	35.95	31.54	-12.27 -24	
Atyr Pharma	LIFE	5.28	4.29	-18.75	-56.36 728	Flamel Tech	FLML	10.16	9.35	-7.97 -23	.42 694
Auris Medical	EARS	4.48	4.07	-9.15	-16.26 603	Flex Pharma	FLKS	8.315	7.1	-14.61 -42	.97 414
Avalanche Biotech	AAVL	6	4.44	-26.00	-53.36 2672	Flexion Thera	FLXN	15.48	13.2	-14.73 -31	.50 628
Avax Tech Aveo Pharma	AVXT AVEO	0.027 1.01	0.0191 0.9501	-29.26 -5.93	-33.91 557 -24.60 667	Foamix Pharma	FOMX FBIO	6.48 2.48	6.29 2.51	-2.93 -22 1.21 -10	.44 433
Axovant Sciences	AXON	15.93	11.23	-29.50	-37.71 4764	Fortress Bio Forward Pharma	FWP	16.05	17.23	7.35 -9	.32 96
Axsome Thera	AXSM	7.83	7.21	-7.92	-22.22 114	Galena Biopharma	GALE	0.67	0.6299	-5.99 -5:	7.15 7250
Bellerophon Thera	BLPH	2.31	2.03	-12.12	-31.42 70	Galmed Pharma	GLMD	6.25	6.0818	-2.69 -20	.08 100
Bellicum Pharma	BLCM	11.3	10.5	-7.08	-48.20 1649	Generex Biotech	GNBT	0.0076	0.006	-21.05 15	.38 7876
Bellus Health	BLUSF	0.759	0.8951	17.93	21.29 18	Genocea Biosci	GNCA	3.11	2.84	-8.68 -4	6.11 635
Benitec Biopharma	BNTC	3.59	3.57	-0.56	-11.19 10	Genvec	GNVC	0.56	0.4901	-12.48 -73	.36 821
Bind Thera	BIND	1.76	1.65	-6.25	-27.95 395	Geron	GERN	3.05	2.86	-6.23 -40).91 11912
Bio Blast Pharma	ORPN	3.66	3.03	-17.21	-21.71 296	Gilead Sciences	GILD	83	85.14	2.58 -15	.86 88899
Biocryst Pharma	BCRX	6.97	6.14	-11.91	-40.50 4543	Global Blood Thera	GBT	18.93	18.58	-1.85 -42	.53 1600
Biodel	BIOD	0.249	0.27	8.43	-21.19 2582	Globeimmune	GBIM	3.01	2.17	-27.91 -43	.93 200
Biodelivery Sci	BDSI	4.05	3.73	-7.90	-22.13 3721	Glycomimetics	GLYC	4.71	4.28	-9.13 -26	.08 89
Biogen	BIIB	273.05	263.86	-3.37	-13.87 10696	Gtx	GTXI	0.6709	0.66	-1.62 -5	5.71 91
Biolinerx	BLRX	1.03	1.005	-2.43	-22.69 229	GW Pharma	GWPH	50.16	44.72	-10.85 -35	1.41 9893
Biomarin Pharma	BMRN	74.02	68.41	-7.58	-34.70 10476	Halozyme	HALO	8.8	7.9	-10.23 -54	
Biondvax Pharma	BVXV	3.6	3.5	-2.78	-11.61 33	Harvard Bio	HBIO	2.97	2.96		.70 292
Bio-path Holdings	BPTH	1.4	1.35	-3.57	8.00 136	Heat Biologics	HTBX	2.45	2.1599		.06 322
Biopharmx	BPMX	1.78	1.59	-10.67	4.61 91	Histogenics	HSGX	3.01	2.42	-19.60 -30	.86 67
Biota Pharma	BOTA	1.61	1.51	-6.21	-22.16 201	Horzon Pharma	HZNP	17.5	17.15	-2.00 -20	.86 20118
Biotie Therapies	BITI	24.72	24.9	0.73	73.52 242	Idera Pharma	IDRA	1.94	1.84	-5.15 -40	.45 5185
Bluebird Bio Blueprint Medicines	BLUE BPMC	41.36 15.72	47.73 14.9	15.40 -5.22	-25.68 8764 -43.43 1170	lgnyta	RXDX IMDZ	9.98 10.47	9.01 10.09	-9.72 -32 -3.63 -49	.76 762
Calithera Biosci	CALA	5	4.76	-4.80	-37.86 541	Immune Design Immune Pharma	IMNP	0.53	0.42	-20.75 -42	.54 852
Cara Thera	CARA	9	7.88	-12.44	-53.26 2349	Immunocellular	IMUC	0.23	0.2272	-1.22 -36	.05 1656
Carbylan Therap	CBYL	2.43	0.6	-75.31	-83.43 4701	Immunogen	IMGN	8.49	7.64	-10.01 -43	
Cardiome	CRME	6.62	5.64	-14.80	-30.46 88	Immunomedics	IMMU	1.88	2.2	17.02 -28	.34 12372
Casi Pharma	CASI	1.08	0.8985	-16.81	-6.41 186	Incyte	INCY	70.56	71.01	0.64 -34	.52 17584
Catabasis Pharma	CATB	6.62	5.75	-13.14	-27.49 177	Infinity Pharma	INFI	6.21	5.72	-7.89 -2	7.13 2862
Catalyst Biosciences Catalyst Pharma	CBIO CPRX	2.21 1.86	2.2 1.78	-0.45 -4.30	-29.71 66 -27.35 2175	Innoviva Inotek Pharma	INVA ITEK	10.02 7.83	11.03 6.87		.65 7015
Celator	CPXX	1.29	1.415	9.69	-19.60 613	Inovio Pharma	INO	6.68	6.01	-10.03 -10	.57 21959
Celgene	CELG	99.76	97.89	-1.87	-18.26 43313	Insmed	INSM	13.2	12.78	-3.18 -29	.59 2898

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BIOWORLD STOCK REPORT FOR PUBLIC BIOTECHNOLOGY COMPANIES

COMPANY	SYMBOL	CLOSE 1/29	CLOSE 2/5	%CHA WK	ANGE YTD	VOL (000)	COMPANY	SYMBOL	CLOSE 1/29	CLOSE 2/5	%CHA WK	NGE YTD	VOL (000)
Insys	INSY	17.35	16.34	-5.82	-42.93	6247	Respirerx Pharma	RSPI	0.0157	0.0158	0.64	-21.00	1558
Intec Pharma Intercept Pharma	NTEC ICPT	4.38 106.23	4.08 98.51	-6.85 -7.27	-23.88 -34.04	20 4963	Retrophin Revance Thera	RTRX RVNC	14.97 20.73	14.93 18.5	-0.27 -10.76	-22.60 -45.84	2693 1971
onis Pharma	IONS	38.93	35.39	-9.09	-42.85	10558	Rexahn Pharma	RNN	0.3598	0.3617	0.53	-0.36	
ronwood Pharma	IRWD	9.24	8.43	-8.77	-27.26	8139	Rigel Pharma	RIGL	2.75	2.51	-8.73	-17.16	2037
Jazz Pharma Juniper Pharma	JAZZ JNP	128.74 7.94	121.77 7.91	-5.41 -0.38	-13.37 -23.20	2963 164	Ritter Pharma Rockwell Medical	RTTR RMTI	1.37 6.26	1.19 6.23	-13.14 -0.48	-30.00 -39.16	207 2244
Juno Thera	JUNO	27.58	26.47	-4.02	-39.80	9476	Rxi Pharma	RXII	0.2926	0.2896	-1.03	-24.19	759
Kamada	KMDA	3.7	3.95	6.76	-4.73	23	Sage Thera	SAGE	33.58	31.49	-6.22	-45.99	3287
Karyopharm Thera	KPTI	6.22	5.76	-7.40 -4.90	-56.53	1796	Sagent Pharma	SGNT	15.11	14.49	-4.10	-8.93	
Kempharm Keryx Biopharma	KMPH KERX	15.09 3.53	14.35 3.55	-4.90 0.57	-27.74 -29.70	234 6457	Sangamo Biosci Sarepta Thera	SGMO SRPT	6.05 11.88	5.66 12.22	-6.45 2.86	-38.01 -68.33	5372 6545
Kite Pharma	KITE	47.49	41.47	-12.68	-32.70	7268	Sciclone Pharma	SCLN	7.99	8.76	9.64	-4.78	
La Jolla Pharma	LJPC	17.71	15.15	-14.46	-43.89	1116	Scynexis	SCYX	4.768	5.2	9.06	-16.26	122
Lexicon Ligand Pharma	LXRX LGND	10.19 99.97	8.73 92.5	-14.33 -7.47	-34.41 -14.68	3432 2351	Seattle Genetics Seres Thera	SGEN MCRB	32.98 27.13	31.85 25.19	-3.43 -7.15	-29.03 -28.21	12324 766
Loxo Oncology	LOXO	20.66	19.25	-6.82	-32.34	815	Shire	SHPG	168.3	157.32	-6.52	-23.26	
Lpath	LPTN	0.195	0.1601	-17.90	-29.50	657	Siga Tech	SIGAQ	0.465	0.53	13.98	26.19	150
Macrocure Macrogenics	MCUR MGNX	1.07 20.13	0.99 18.23	-7.48 -9.44	-22.05 -41.14	148 1263	Sinovac Biotech Soligenix	SVA SNGX	5.02 0.88	7.05 0.8997	40.44 2.24	23.25 -20.38	3131 265
Mannkind	MNKD	0.9973	0.9678	-2.96	-33.26		Sophiris Bio	SPHS	1.93	1.68	-12.95	-5.62	1138
Marina Biotech	MRNA	0.162	0.16	-1.23	-39.62	462	Sorrento Thera	SRNE	5.25	5.05	-3.81	-42.02	1786
Marinus Pharma	MRNS	5.77	5.32 0.405	-7.80	-30.37	430	Spark Therapeutics	ONCE SPPI	28.3199	25.14	-11.23	-44.52	1768 4212
Mast Thera Medgenics	MSTX MDGN	0.4 3.6	3.32	1.25 -7.78	-3.64 -44.85	6518 465	Spectrum Pharma Stemcells	STEM	4.96 0.35	4.63 0.33	-6.65 -5.71	-23.22 -20.77	
Medicinova	MNOV	4.03	4.14	2.73	16.62	591	Stemline Thera	STML	5.04	4.29	-14.88	-32.01	344
Medivation MEI Pharma	MDVN MEIP	32.7 1.29	29.14 1.24	-10.89 -3.88	-39.72 -22.50	17013 763	Strongbridge Biophan	ma SBBP SCMP	4.6	4.47 11.53	-2.83 -8.85	-41.18	352 1873
MEI Pharma Merrimack Pharma	MACK	6.17	1.24 6.04	-3.88 -2.11	-22.50 -23.54	763 8790	Sucampo Pharma Summit Thera	SCMP	12.65 9	7.82	-8.85 -13.11	-33.31 -32.00	1873
Metabolix	MBLX	0.8621	1.22	41.51	-20.78	130	Sunesis	SNSS	0.78	0.785	0.64	-12.53	736
Minerva Neurosci	NERV	5.2 4.51	5.35 3.9101	2.88 -13.30	-11.86 -37.44	85 94	Supernus Pharma Synergy Pharma	SUPN SGYP	11.34 3.75	12.13 3.58	6.97 -4.53	-9.75 -36.86	
Mirna Thera Momenta Pharma	MIRN MNTA	12.42	11.77	-5.23	-37.44	2425	Synta Synta	SNTA	0.2449	0.2	-4.53 -18.33	-43.18	4033
Myokardia	MYOK	9	8.26	-8.22	-43.66	438	Taxus Cardium	CRXM	0.2499	0.25	0.04	-24.24	25
Myrexis	MYRX	0.09	0.09	0.00	0.00	149	Tenax Thera	TENX	2.63	2.63	0.00	-19.82	171
Nabriva Thera Nantkwest	NBRV NK	8.47 10.3	8.34 7.84	-1.53 -23.88	-13.31 -54.76	179 2605	Tesaro Tetralogic Pharma	TSRO TLOG	34.54 0.2522	35.49 0.1986	2.75 -21.25	-32.17 -88.52	2873 5605
Nektar Therap	NKTR	13.64	11.94	-12.46	-29.14	16715	Tetraphase Pharma	TTPH	5.44	4.75	-12.68	-52.64	3511
Neos Thera	NEOS	13.58	8.72	-35.79	-39.11	1234	TG Therapeutics	TGTX	8.17	8.5	4.04	-28.75	2414
Neothetics	NEOT NRX	1.06 0.93	0.96 0.9201	-9.43 -1.06	-30.94 -42.49	261 642	The Medicines Co. Threshold	MDCO THLD	34.56 0.32	31 0.29	-10.30 -9.38	-16.98 -39.57	4601 2409
Nephrogenex Neurocrine Biosci	NBIX	42.55	35.99	-15.42	-36.38	8993	Titan Pharma	TTNP	3.53	3.84	8.78	-13.51	1714
Neuroderm	NDRM	13.5	12.55	-7.04	-26.39	472	Tobira	TBRA	7.18	6.89	-4.04	-31.44	223
Neurogesx	NGSX NLNK	0.0034	0.004	17.65 -4.64	14.29 -36.16	159 2774	Tokai Pharma	TKAI TRVN	6.27	6 7.53	-4.31	-31.19	338 1759
Newlink Genetics Nivalis Thera	NVLS	24.36 4.69	23.23 4.86	3.62	-37.21	334	Trevena Trinity Biotech	TRIB	7.28 10.59	10.32	3.43 -2.55	-28.15 -12.24	553
Northwest Bio	NWBO	2.12	2.02	-4.72	-36.88	1379	Ultragenyx	RARE	56.15	53.85	-4.10	-52.00	5153
Novabay	NBY	2.58	2.44	-5.43	20.79	56	Uniqure	QURE	18.23	15.49	-15.03	-6.35	1406
Novavax Nymox Pharma	NVAX NYMX	5.15 2.31	4.81 2.03	-6.60 -12.12	-42.67 -38.11	60664 805	United Therap Vanda Pharma	UTHR VNDA	123.18 8.53	118.45 8.64	-3.84 1.29	-24.37 -7.20	4182 3128
Ocera Thera	OCRX	2.7	2.79	3.33	-10.58	150	Vascular Biogenics	VBLT	3.08	3.39	10.06	-35.55	2125
Ocular Thera	OCUL	6.12	5.99	-2.12	-36.07	953	Verastem	VSTM	1.21	1.13	-6.61	-39.25	2177
Ohr Pharma Omeros	OHRP OMER	3.93 10.79	3.16 11.09	-19.59 2.78	-48.53 -29.50	1013 1133	Versartis Vertex Pharma	VSAR VRTX	11.14 90.75	9.36 86.61	-15.98 -4.56	-24.39 -31.17	889 16180
Oncogenex Pharma	OGXI	0.6879	0.7112	3.39	-41.22	813	Vical	VICL	0.35	0.3327	-4.94	-18.85	1421
Oncomed Pharma	OMED	9.25	9.31	0.65	-58.70	1290	Viking Thera	VKTX	2.08	1.72	-17.31	-49.56	127
Onconova Thera Oncothyreon	ONTX ONTY	0.63 1.33	0.55 1.15	-12.70 -13.53	-42.52 -48.20	410 3851	Vitae Pharma Vital Therapies	VTAE VTL	9.8 9.15	9.17 9.15	-6.43 0.00	-49.34 -20.57	463 469
Ophthotech	OPHT	54.19	50.87	-6.13	-35.22	2576	Vivus	VVUS	1.01	1.02	0.99	0.00	5067
Opko Health	OPK	8.04	8.26	2.74	-17.81	16116	Voyager Thera	VYGR	10.68	10.36	-3.00	-52.69	301
Orexigen Osiris Thera	OREX OSIR	1.83 7.16	1.84 6.39	0.55 -10.75	6.98 -38.44	6234 919	VTV Thera Wave Life Sciences	VTVT WVE	7.25 13.53	6.29 12.59	-13.24 -6.95	-7.64 -21.07	176 48
Otonomy	OTIC	14.92	13.8	-7.51	-50.27	1466	Xbiotech	XBIT	8.25	7.72	-6.42	-28.98	310
Oxigene	OXGN	0.6299	0.6096	-3.22	-19.78	255	Xencor	XNCR	10.82	10.71	-1.02	-26.74	2014
Pacira Pharma Pain Therapeutics	PCRX PTIE	59.42 1.62	63.1 1.74	6.19 7.41	-17.83 -0.57	3632 415	Xenon Pharma Xenoport	XENE XNPT	6.61 4.97	6.78 4.66	2.57 -6.24	-15.67 -15.12	
Palatin Tech	PTN	0.48	0.59	22.92	-11.14	578	Xoma	XOMA	1.01	0.8794	-12.93	-33.88	6393
Paratek Pharma	PRTK	14.62	13.3	-9.03	-29.89	246	Zafgen	ZFGN	6.65	6.27	-5.71	-0.32	5152
Peregrine Pharma Pfenex	PPHM PFNX	0.98 8.87	0.8699 8.2	-11.23 -7.55	-25.65 -33.76	5651 229	Ziopharm Oncology Zogenix	ZIOP ZGNX	4.97 9.48	5.11 8.49	2.82 -10.44	-38.51 -42.40	
Pharmathene	PIP	1.57	1.63	3.82	-14.21	3063	Zosano Pharma	ZSAN	2.48	2.25	-9.27	-1.32	
Pharmos	PARS	0.038	0.035	-7.89	-12.50	133	Zynerba Pharma	ZYNE	6.62	6.18	-6.65	-38.63	188
Portola Pharma	PTLA	33.03	30.97	-6.24	-39.81	3639							
Pozen Progenics Pharma	POZN PGNX	6.55 4.17	5.94 4.21	-9.31 0.96	-13.03 -31.32	2619 4905							
Pronai Thera	DNAI	8.28	7.19	-13.16	-52.19	604	NOTES						
Progr Thera	PRQR	5.27	5.24	-0.57	-39.63	187	Trading volumes fo	r Nasdaα Δ	mey and N	IVSE are re	orded as	the total	Lnumbe
Protalix Biothera Proteon Thera	PLX PRTO	0.85 9.33	0.84 7.81	-1.18 -16.29	-17.65 -49.65	282 98							
PTC Thera	PTCT	23.82	24.63	3.40	-23.98	3372	of shares traded (in						_
Pulmatrix	PULM	2.8476	2.95	3.60	-29.76	28	Friday); the weekly	and YID %	cnanges a	re from IPC	completi	on, wher	e
Puma Biotech QLT Inc.	PBYI	41.74	39.72	-4.84 2.00	-49.34 -4.14	4334 720	applicable.						
	QLTI RDUS	2.5 32.03	2.55 31.26	-2.40	-4.14 -49.20	4610	Average Percent C	hange Weel	k: -4.23%				
	RPTP	4.1	3.89	-5.12	-25.19	5886	Range: -75.31% to	_		omnanios	252		
Radius Health Raptor Pharma				E 40	-17.41	63	Kange: -/3.31% to	ישוון ;0% סויור	TINGL OLC	ompanies:	JJC		
Radius Health Raptor Pharma Recro Pharma	REPH	7.83	7.4	-5.49	30.71	F7E2	for a kind of the state of the	1\					
Radius Health Raptor Pharma Recro Pharma Regeneron Pharma	REPH REGN	420.09	396.61	-5.59	-26.94	5752	(not market weight	ed)					
Radius Health Raptor Pharma Recro Pharma Regeneron Pharma Regenxbio Regulus Thera	REPH REGN RGNX RGLS	420.09 13.9 5.78		-5.59 -8.42 2.77	-26.94 -23.31 -31.88	5752	(not market weight Average Percent C	•	-27.42%				
Radius Health Raptor Pharma Recro Pharma Regeneron Pharma	REPH REGN RGNX	420.09 13.9	396.61 12.73	-5.59 -8.42	-26.94 -23.31	5752 316 2415 7070		hange YTD:		Companies			