

Obesity Meeting 2010

Debating What's Needed For an Obesity Approval

By Trista Morrison
Editor

Obesity's "big three" are top of mind these days, thanks to recent FDA panel rejections and upcoming FDA decision dates for Arena Pharmaceuticals Inc.'s Lorquess (lorcaserin) and Vivus Inc.'s Qnexa (phentermine/topiramate), as well as a pending panel for Orexigen Therapeutics Inc.'s Contrave (naltrexone SR/bupropion SR).

They were certainly top of mind at last week's annual meeting of the Obesity Society, as was debate about what it's going to take to get a weight loss drug FDA approved – better drugs, a better pathway, better panels, better patient stratification or better disease management?

Thomas Hughes, CEO of obesity start-up Zafgen Inc., said many obesity specialists he spoke with during the meeting were frustrated to see the FDA advisory panels come down so hard on Lorquess and Qnexa. "This is a group of people who care deeply about obesity," he said. They are desperate for new treatment options and they "don't understand" what happened in those panels.

In July, the FDA's Endocrinologic and Metabolic Drugs Advisory Committee voted 10 to 6 against approval of Qnexa, arguing that one-year data were not sufficient to demonstrate safety and cited concerns about fetal exposure, metabolic acidosis and adverse psychiatric, cognitive and cardiovascular events. Two months later, the panel voted 9 to 5 against approval of Lorquess, primarily because of rat data showing increased tumor risk, as well as concerns about valvulopathy and adverse cognitive events. (See *BioWorld Today*, July 16, 2010, and Sept. 17, 2010.)

See Obesity Approval, page 4

Mimic the Knife

Beyond Obesity's Big Three: New Peripheral Research

By Trista Morrison
Editor

With FDA panels and decision dates looming, Arena Pharmaceuticals Inc.'s Lorquess (lorcaserin), Vivus Inc.'s Qnexa (phentermine/topiramate) and Orexigen Therapeutics Inc.'s Contrave (naltrexone SR/bupropion SR) command center stage in obesity.

But the Obesity Society's annual meeting last week spotlighted early stage data from a few biotech start-ups that have learned from pharma's setbacks targeting the central nervous system and are trying a peripheral approach to obesity.

"Certainly biotech is responding to what pharma has learned," said Phil Speros, cofounder and CEO of obesity start-up Halsa Pharmaceuticals Inc.

He pointed to Sanofi-Aventis Group SA's Acomplia (rimonabant) as the "poster child" for the difficulties of impacting obesity through the central nervous system. The drug blocked cannabinoid type 1 (CBI) in an attempt to suppress appetitive drive, but it also caused psychological adverse events, leading Sanofi to pull the drug from the market in Europe and abandon U.S. approval attempts. Pfizer Inc. and Merck & Co. Inc. also dumped their CBI blocker programs for obesity.

Lorquess, Qnexa and Contrave each affect the central nervous system. Lorquess agonizes the 5-HT_{2c} serotonin receptor, while Qnexa combines diet drug phentermine with epilepsy drug topiramate, and Contrave combines opioid blocker naltrexone with dopamine stimulator bupropion. Contrave faces the FDA's Endocrinologic and Metabolic

See Obesity Research, page 3

THIS WEEK IN BIO WORLD INSIGHT

THE VENTURE CAPITAL BOOM 10 YEARS LATER, SANS EXITS	2
MONEY RAISED BY BIOTECH IN 2010 VS. 2009	2
MONEY RAISED BY BIOTECH IN 2010: JAN. - OCT.	4
WEEK IN REVIEW	5
WORD ON THE STREET	6
BIOTECH COMPANY DEALS WITH OTHER BIOTECHS.....	7
MANUFACTURING, MARKETING AND DISTRIBUTION DEALS	14
BIOTECH-BIOTECH MODIFIED DEALS	15

No Empty-Nesters Here

The Venture Capital Boom 10 Years Later, Sans Exits

By **Brian Orelli**
Contributing Writer

Venture capital fundraising tends to go through boom-bust cycles. We're currently in a slump, but a decade ago fundraising was roaring. (See *BioWorld Insight*, July 19, 2010.)

A decade also happens to be the term that VC funds are established for. Combine a boom 10 years ago with a lack of exit options recently, and you have many funds reaching the end of their life with active companies in their portfolios.

"That's not necessarily because they are failures," said David Collier, managing director at CMEA Capital. "It's often more attractive to keep the companies growing."

Fortunately VCs, which tend to be problem-solvers anyway, have myriad solutions.

Nearly all venture funds are established with the ability to extend the fund for a few years. Limited partners (LP) are often receptive to this approach to maximizing value as the fund winds down, and the managing partners usually lower their fee during the extension since they aren't spending time exploring new investments for the fund.

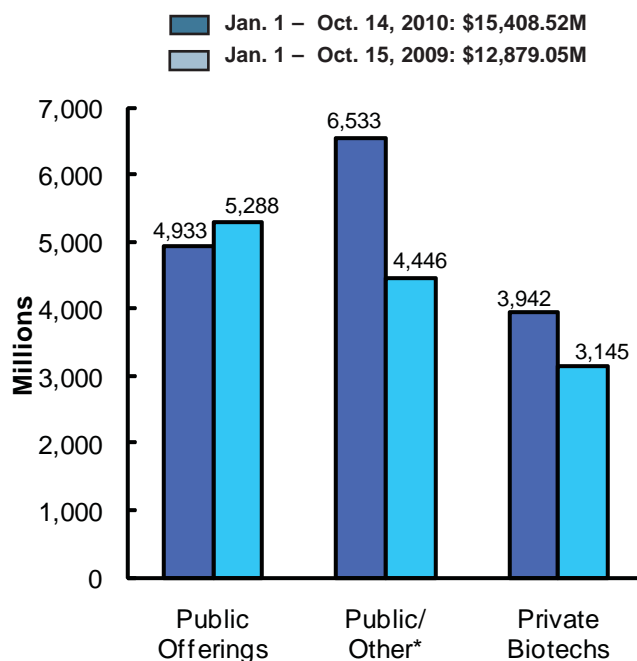
It becomes a balancing act between a firm's newer funds and older funds that are winding down, but Collier said managing partners have to make sure not to upset long-standing LPs.

"We maximize for the LPs because the LP relationships are paramount," said Collier. "If you don't have good relationships with your LPs, you can't raise more funds."

At some point though, funds can end up with assets when the extensions have run out. At that point, funds have three options: do an initial public offering (IPO), sell the company or sell the fund's stake in the company.

Forcing an IPO in this market is rough. While Collier thinks some of the recent IPOs into the weak market may have been pushed by venture capital funds in need of a way out, he's not convinced it's a big factor. Instead, the decision to do an

Money Raised By Biotech In 2010 Vs. 2009



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

IPO has more to do with how much money a development-stage company needs. (See *BioWorld Insight*, Oct. 4, 2010.)

"Companies take whatever awful terms they can get because they need a large chunk of cash for development," said Collier. Otherwise, another round of VC funding is usually the more appropriate option.

An exit through an acquisition is certainly possible, but Collier noted that the number of companies in the drug-developer space towers over the number of M&A transactions each year.

See *Venture*, page 6

BioWORLD® INSIGHT (ISSN 1541-0579) is published every Monday by AHC Media LLC, 3525 Piedmont Road, Building Six, Suite 400, Atlanta, GA 30305. Opinions expressed are not necessarily those of this publication. Mention of products or services does not constitute endorsement. BioWORLD® and BioWORLD® INSIGHT are trademarks of AHC Media LLC, a Thompson Publishing Group company. Copyright © 2010 AHC Media LLC. All Rights Reserved. No part of this publication may be reproduced without the written consent of AHC Media LLC. (GST Registration Number R128870672)

ATLANTA NEWSROOM: Managing Editor: **Lynn Yoffee**.
Editor: **Trista Morrison**.
Database Editor: **Karen Pihl-Carey**.
Production Editor: **Amanda Lanier**.

BUSINESS OFFICE: Senior Vice President/Group Publisher: **Donald R. Johnston**.
Director of Product Management: **Jane Cazzorla**
Account Representatives: **Bob Sobel, Chris Wiley, Scott Robinson**.

DISPLAY ADVERTISING: For ad rates and information, please call **Stephen Vance** at (404) 262-5511 or e-mail him at stephen.vance@ahcmedia.com.

REPRINTS: For photocopy rights or reprints, call our reprints department at (404) 262-5547.
PRESS MATERIALS: Send all press releases and related information to newsdesk@bioworld.com.

SUBSCRIBER INFORMATION

Please call **(800) 888-3912** to subscribe or if you have fax transmission problems. Outside U.S. and Canada, call **(404) 262-5476**. Our customer service hours are 8:30 a.m. to 6:00 p.m. EST.

EDITORIAL
Lynn Yoffee: **(404) 262-5408**
Trista Morrison: **(858) 901-4785**
Donald R. Johnston: **(404) 262-5439**
Internet: <http://www.bioworld.com>



Obesity Research

Continued from page 1

Drugs Advisory Committee on Dec. 7, but safety concerns already prompted the panel to vote against Lorquess and Qnexa. (See *BioWorld Today*, July 16, 2010, and Sept. 17, 2010.)

Other drugs have tried to impact obesity by working through the gut, but with limited success. Roche AG gained FDA approval of Xenical (orlistat), which inhibits gastric and pancreatic lipases to decrease the absorption of dietary fat, but marginal efficacy and unpleasant side effects have limited sales.

"The only real success in obesity so far has been bariatric surgery," said Ben Shapiro, chairman of PureTech Ventures and a cofounder of obesity start-up Gelesis Inc. "If you could come up with a way to mimic the effects of surgery – but not have to do it with a knife – that's the way that one is going to answer this challenge."

And that's exactly what a new generation of obesity-focused biotech is trying to do.

Peripheral Data

Gelesis presented data at the obesity meeting for Attiva and Gellica, two superabsorbent biodegradable hydrogels that swell to about 100 times their weight in the stomach and the small intestine. The concept is that the pills would reduce stomach volume in a way that mimics bariatric surgery.

An initial Phase I trial of Attiva showed the drug significantly increased post-meal satiety and decreased hunger before the next meal. Preclinical data on both compounds presented at the obesity meeting showed they significantly decreased food intake for up to 18 hours.

Shapiro noted that in addition to the effect on stomach volume, Gelesis is aiming to impact hormonal signaling in the gut. He reported that safety for the devices looks good so far, and the next step will be a robust proof-of-concept study. The Boston-based company was founded in 2006 and raised \$16 million in 2008. (See *BioWorld Today*, Jan. 4, 2008.)

Also presenting at the obesity meeting was Zafgen Inc., which is seeking to shrink fat with small-molecule angiogenesis inhibitors that target adipose cells. The Cambridge, Mass.-based company presented preclinical data showing that prototype compound ZGN-201, a methionine aminopeptidase 2 (MetAP2) inhibitor, eliminated excess body fat in obese mice while improving metabolism and inflammation measures.

During the first four weeks of treatment, ZGN-201-treated mice lost all excess body weight ($p < 0.01$), driven by a 30 percent reduction in food intake ($p < 0.01$). After nine months, the ZGN-201 treated mice had 43 percent lower body weight than the control mice, and improvements were observed in fasting glucose, insulin and inflammatory measures. A separate study in dogs showed similar elimination of excess body fat.

Zafgen is conducting a Phase I trial and expects to report

data early next year. (See *BioWorld Today*, Sept. 11, 2008.)

Halsa, too, is pursuing a peripheral approach to obesity that involves recombinant human Zinc-alpha2-glycoprotein (ZAG), a protein that plays a role in lipolysis, or the breakdown of fat in adipose tissue. Halsa skipped the obesity meeting this year, but last year presented preclinical data showing that ZAG-treated obese diabetic mice lost 3.5 g, or about 4 percent of their weight compared to untreated mice, in five days. Blood glucose, triglycerides and plasma insulin levels also decreased significantly, while muscle mass increased. (See *BioWorld Today*, Feb. 5, 2010.)

Speros said Halsa continues to see very encouraging preclinical data in terms of route of administration, efficacy and safety. The biotech is aiming to file an investigational new drug application in 15 months.

Looking to the Future

The peripheral approaches to obesity are still early stage, so their success is far from assured. And regardless, the CNS-targeted or gut-targeted approaches may yet find a niche.

"With 200 million people obese or overweight, no one treatment will cover all the bases," Speros said.

New research on the genetics of obesity, some of which was presented at the obesity meeting, might help clarify which approaches are most appropriate for which patients.

"We see the treatment of severe obesity as a problem that is targetable," said Zafgen CEO Thomas Hughes. "If we target that population, we will have a better chance of generating the risk/benefit relationship that regulators are looking for."

Hughes likened the obesity field to that of cardiovascular disease, which was initially seen as a single indication before it fragmented into hypertension, high cholesterol and other sub-groups.

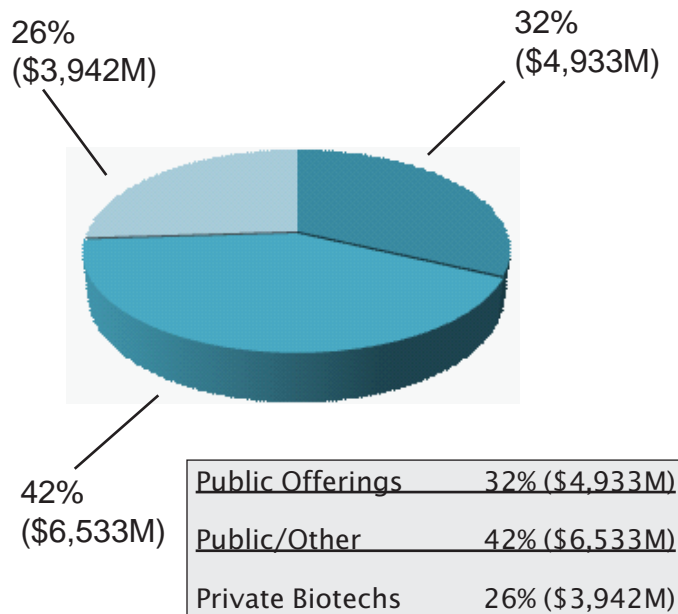
Yet Speros predicted that in the near term, most obesity drug developers will still try to target a large population of obese patients. It's possible that in the future, genetic information could create mutation-driven niches in obesity the way it has in oncology, he acknowledged, but that's "maybe 30 years" away.

Before niches can develop for targeted drugs, the obesity field needs broadly effective drugs like chemotherapy for cancer, Speros said. "We don't have a single good treatment yet," he lamented. "We don't even have cisplatin." ■

"The only real success in obesity so far has been bariatric surgery. If you could come up with a way to mimic the effects of surgery – but not have to do it with a knife – that's the way that one is going to answer this challenge."

– Ben Shapiro, chairman, PureTech Ventures and cofounder, Gelesis Inc.

Money Raised By Biotech in 2010: Jan. 1 - Oct. 14, 2010



Obesity Approval

Continued from page 1

The FDA is slated to make a final decision on Lorquess Oct. 22 and Qnexa Oct. 28, while Orexigen's Contrave faces the panel on Dec. 7. But neither investors nor physicians are particularly optimistic, given how events have unfolded thus far.

Some experts at the obesity meeting were also disgruntled about the recent market withdrawal of Abbott's weight loss drug Meridia (sibutramine). The withdrawal was driven by data from a large outcomes trial called SCOUT showing only modest weight loss and higher risk of heart attacks and strokes. (See *BioWorld Today*, Oct. 11, 2010.)

But the SCOUT trial enrolled mainly high-risk patients with underlying cardiovascular disease – most of whom would not be eligible for treatment with Meridia anyway. By that logic, one physician complained, you might as well outlaw marathon running, because if you asked a bunch of 60-year-olds with heart disease to go out and run a marathon, it would probably kill one third of them. A drug shouldn't necessarily be taken away from everyone just because of side effects in a contraindicated population, he argued.

Zafgen's Hughes predicted that if some new obesity drugs don't get approved, physicians will turn to off-label use of glucagon-like peptide-1 (GLP-1) agonists like diabetes drugs Victoza (liraglutide, Novo Nordisk AS), Byetta (exenatide, Amylin Pharmaceuticals Inc. and Eli Lilly and Co.) and potentially Amylin and Lilly's Bydureon (exenatide LAR), which also is up for an FDA decision Oct. 22. To be sure, data

on Victoza and taspoglutide, a GLP-1 agonist from Ipsen SA and Roche AG, were featured at the obesity meeting.

One way or the other, doctors are going to find new obesity drugs, Hughes said.

Better Drugs? Better Pathway?

But is it possible to get a new drug approved for obesity in the current regulatory environment?

Phil Speros, cofounder and CEO of obesity start-up Halsia Pharmaceuticals Inc., believes FDA approval is possible for drugs that balance acceptable risk with good efficacy.

But reaching that ideal balance might require a different scientific approach.

Ben Shapiro, chairman of PureTech Ventures and a cofounder of obesity start-up Gelesis Inc., noted that most of the pharmacotherapeutic approaches to obesity thus far have mimicked neurotransmitters in the brain. Since each neurotransmitter plays many roles, targeting them results in toxicity – and if a company could isolate one element alone and avoid toxicity, the effect probably wouldn't be strong enough, he explained.

Some of the newer biotech start-ups are pursuing a peripheral rather than central approach to obesity. They're focusing on mechanisms that have anatomical effects within the gastrointestinal tract and simultaneously impact hormone signaling in the gut. (*For more on this, see the companion article in this issue.*)

"The only real success in obesity so far has been bariatric surgery," Shapiro said. "If you could come up with a way to mimic the effects of surgery – but not have to do it with a knife – that's the way that one is going to answer this challenge."

Speros noted that the "big three" clearly thought they had struck the right safety and efficacy balance when they sought FDA approval, but the FDA panels thus far have complained of insufficient data.

"I think in some cases a regulatory abundance of caution is appropriate," Speros said. "But at the time of a new drug application, you have to recognize you won't have all the answers. There's a right amount of science we can do to get drugs through the regulatory process – we have to figure out what that right amount is."

Broad Politics? Deep Science?

Beyond better drugs and a better regulatory path, experts at the obesity conference noted that getting new drugs approved might require more representation of obesity specialists on FDA advisory committees.

That ties into a need to rethink the way obesity is treated, Hughes said. "This is a practice that should be managed by a multidisciplinary team of experts," he explained – a team that understands nutrition, cardiovascular components,

See Obesity Approval, page 5

WEEK IN REVIEW

Financings

Cytomedix Inc. secured \$13 million through a registered direct offering and equity purchase agreements.
Cytori Therapeutics Inc. raised \$19.3 million in a public stock offering.
Noxxon Pharma AG is raising \$35 million in Series D financing.
Prolong Pharmaceuticals LLC raised \$30 million in first round financing from an undisclosed investor.
Regeneron Pharmaceuticals Inc. raised \$175.1 million in a public stock offering.
Synsolia Therapeutics raised \$30 million in its third round of financing.

Deals

Envoy Therapeutics Inc. and **Takeda Pharmaceutical Co. Ltd.** inked a schizophrenia discovery deal.
Exelixis Inc. signed two more deals with **Bristol-Myers Squibb Co.** worth a combined \$565 million.
Genmab AS signed a \$53.5 million antibody deal with **H. Lundbeck AS**.
ImmunoGen Inc. signed a Tumor-Activated Prodrug technology deal with **Novartis AG**.
Pfizer Inc. is acquiring **King Pharmaceuticals Inc.** for \$3.6 billion.
Synsolia Therapeutics inked a \$725 million Parkinson's deal with **UCB SA**.
Synthetic Genomics Vaccines Inc. partnered with **Novartis AG** on influenza vaccine production.

. . . And More

BioWorld Today has the latest from the European Society for Medical Oncology annual meeting and the Obesity 2010 meeting.

Abbott withdrew obesity drug Meridia (sibutramine) from the U.S., Canadian and Australian markets.
Alexza Pharmaceuticals Inc. got an FDA complete response letter for agitation drug AZ-004.
Alkermes Inc. gained FDA approval of Vivitrol (naltrexone xr) for opioid dependence.
Halozyme Therapeutics Inc. is ramping down discovery and cutting 25 percent of its staff.
Inviragen Inc. and **PharmaJet Inc.** got a \$15.5 million National Institutes of Health contract for a needle-free dengue vaccine.
Jazz Pharmaceuticals Inc. got an FDA complete response letter for JZP-6 (sodium oxybate) in fibromyalgia.
Onyx Pharmaceuticals Inc. said manufacturing issues will cause a six-month delay with carfilzomib.
Seattle Genetics Inc. reported more good Phase II data with SGN-35, this time in anaplastic large cell lymphoma.
SIGA Technologies Inc. is poised for a potential \$2.8 billion government smallpox contract.

Obesity Approval

Continued from page 4

endocrine issues, arthritis, psychology and the many other factors that either contribute to or arise from obesity.

"This is an aspect of obesity treatment that needs to mature. As the healthcare system evolves – it needs to be dealt with," Hughes said.

Better management of obesity patients might make the FDA more comfortable with the prescribing of new obesity drugs – and less worried about the drugs being used inappropriately.

Another factor that might help is increasing information about the role genetics play in obesity. At the obesity meeting, there were several presentations devoted to the molecular mechanisms of obesity, as well as presentations on genome-wide association studies in obesity.

Hughes said such studies might one day offer a way to better stratify obese patients and figure out which ones will respond to which drugs. That could help pinpoint patients

for which the risk/benefit profile of new obesity drugs is most appropriate.

"We tend to look at obesity as one problem, but it's starting to fragment," Hughes explained. "Obesity as a disease is really just coming of age." ■

Is Your Company Featured in This Issue?

Promote it on your website or in your investor kit!

For high-quality reprints of articles about your company, please contact Stephen Vance at (404) 262-5511, or stephen.vance@ahcmedia.com

WORD ON THE STREET

"It's either overly optimistic or a fool's errand, depending on which approach you take."

—Glenn Kaza, president of Prolong Pharmaceuticals LLC, on trying to develop so-called blood substitute products

"It's discouraging because you see how tough the path is. It's encouraging because there's still a relatively empty market."

—Phil Speros, cofounder and CEO of Halsa Pharmaceuticals Inc., on recent regulatory setbacks for the obesity space

"It just shows you have to have a very bad short-term memory."

—Paul Grayson, president and CEO of Fate Therapeutics Inc., on why serial entrepreneurs keep starting companies in an industry where there's a 90 percent failure rate

Venture

Continued from page 2

Even if an acquisition becomes an option, the increased use of earn-out-based acquisitions could result in the fund holding contingent value rights for a contingency that's still years away. BioMarin Pharmaceutical Inc., for instance, recently made three purchases with small payments at close, but huge back-end payments to investors if certain milestones are met. (See *BioWorld Insight*, Aug. 23, 2010.)

The last option is to sell the fund's stake in the private company to another fund. Companies not ready for an IPO or to be acquired are usually in a situation where they need additional funding to take them to the next level. By selling

the stake to a fund with dry powder, the secondary investor can take the company to where it needs to go.

Selling the stake as one chunk is preferable to divvying up the illiquid shares of a private company to each individual LP; disposing of them individually or waiting until an IPO is rarely more profitable for the LP.

With none of the options particularly appealing, LPs may be more willing to further extend the fund to maximize value.

"It's like your teenagers are stuck in the house and you can't get them out of the house because there aren't any jobs," Collier concludes. Expect some time before we have empty-nester funds. ■

BIOWORLD®

Tipping the Market Scales with Biotech Regimens

OBESITY REPORT

This brand new market report from *BioWorld Today* shows how a burgeoning disease, a strong public awareness, committed government endeavors and a lack of new drug and device approvals have created the perfect "unmet need" recipe for opportunity. Co-published with *Medical Device Daily*, the report's comprehensive analysis and data, combined with our in-depth forecasts, make this the only source you'll need focusing on the obesity space.

Order this new report today from *BioWorld*—it's just \$299 plus \$17.95 in S&H.



Call

1-800-688-2421 or 1-404-262-5476



Visit

www.bioworld.com/bioobesity

KEY TOPICS COVERED IN THIS 130-PAGE REPORT INCLUDE:

- The projected revenue growth in pharma and biotech obesity sectors
- Up-to-date news on competitors—R&D, deals and corporate financial activity
- Obesity's contribution to heart disease, cancer, diabetes, stroke, arthritis and more
- Defining obesity as a disease, an epidemic, or just an out-of-control condition
- Childhood obesity probability indicators and statistics for unborn-to-teenage population
- And much more!

Top 5 Deals Between Biotech Companies: Aug. 1 - Oct. 14

Company	Company	Deal Value
Genentech Inc.	Seattle Genetics Inc.	\$912
Knopp Neurosciences Inc.	Biogen Idec Inc.	\$345
Jennerex Inc.	Transgene SA	\$116
Phylogica	MedImmune Inc.	\$99.5
Targacept Inc.	Cornerstone Therapeutics Inc.	\$76.4

Biotechnology Company Deals With Other Biotechnology Companies: Aug. 1 - Oct. 14, 2010

Company* (Country; Symbol)	Company* (Country; Symbol)	Type/Product Area	Terms/Details (Date)
AUGUST			
Advaxis Inc. (OTC BB:ADXS)	Vibalogics GmbH* (Germany)	Deal to co-develop a room temperature stable processing technology for live vaccines originally engineered for Advaxis	Financial details were not disclosed (8/12)
Axiogenesis AG (Germany; FSE:A18)	iPS Academia Japan Inc. (Japan)	Nonexclusive licensing agreement to access its pluripotent stem cell technology for the development of predictive disease models	The agreement expands Axiogenesis's stem cell portfolio, with assets in both murine and human model systems (8/4)
BrainCells Inc.*	Proximagen Group plc (UK; LSE:PRX)	Agreement under which BrainCells is acquiring sabcomeline, a compound aimed at psychiatric and neurologic disorders	The deal will bring in as much as \$51M in up-front and milestone payments, plus royalties (8/5)
Cornerstone Therapeutics Inc. (CRTX)	Alitair Pharmaceuticals Inc.*	License and development agreement under which Cornerstone has acquired certain intellectual property	The companies will collaborate to develop one or more products to treat respiratory diseases (8/3)
Cynapsus Therapeutics Inc. (Canada; CDNX:CTH)	Adagio Pharmaceuticals Ltd.* (Canada)	License option agreement granting Cynapsus the option to execute a proposed exclusive, worldwide agreement to license all intellectual property relating to APL-I30277, a reformulation of an approved Parkinson's drug	The firms also finalized an exclusive worldwide license where Cynapsus will assume development and commercialization rights in return for milestones and royalties to Adagio (8/10)
Cypress Biosciences Inc. (CYPB)	Alexza Pharmaceuticals Inc. (ALXA)	In-licensing agreement for the Staccato nicotine drug delivery technology from Alexza	The deal is worth \$6M, including \$5M up front and \$1M in milestones (8/27)
Cypress Biosciences Inc. (CYPB)	Marina Biotech Inc. (MRNA)	In-licensing agreement for Marina's Phase I autism drug candidate carbetocin	The deal is worth \$27.75M, including \$750,000 up front and the rest in milestones; Cypress also will pay royalties (8/27)

Company* (Country; Symbol)	Company* (Country; Symbol)	Type/Product Area	Terms/Details (Date)
Emergent BioSolutions Inc. (NYSE:EBS)	Temasek Life Science Ventures Pte Ltd.* (Singapore)	Deal to form a joint venture, EPIC BIO Pte Ltd., of Singapore, to develop, manufacture and commercialize a vaccine against influenza caused by H5 influenza strains	Both companies will contribute cash and intellectual property to the partnership; Emergent will have 60% ownership, while TLV will hold 40% (8/12)
Genentech Inc. (NYSE:DNA)	Seattle Genetics Inc. (SGEN)	Deal for Genentech applying Seattle Genetics' ADC platform to an undisclosed number of specific targets	Terms call for Genentech to pay \$12M up front, with potential milestones and maintenance fees that could exceed \$900M (8/4)
Isotechnika Pharma Inc. (Canada; TSX:ISA)	3SBio Inc. (China; SSRX)	Development and commercialization agreement for voclosporin to treat autoimmune disease	Isotechnika will get \$6M, including an up-front licensing payment of \$1.5M, with the additional \$4.5M invested by 3SBio through a convertible debenture; 3SBio gets exclusive rights in China, Hong Kong and Taiwan for all uses, excluding ophthalmic indications (8/25)
Knopp Neurosciences Inc.*	Biogen Idec Inc. (BIIB)	Deal to develop a Phase III drug candidate for amyotrophic lateral sclerosis	Knopp will receive \$80M in initial payments and \$265M in potential milestones, while Biogen Idec takes over development and potential commercialization of KNS-760704 in global markets (8/19)
Oxford BioMedica plc (UK; LSE:OXB)	Emergent Product Development Co. GmbH (subsidiary of Emergent BioSolutions Inc.; NYSE:EBS)	Nonexclusive rights agreement to Oxford's Hi-8 PrimeBoost technology patents and sublicense to poxvirus patents for the development and commercialization of vaccines and therapeutics targeting eight infectious diseases	Emergent will pay an up-front licensing fee of \$1M, potential milestones of up to \$20.4M and undisclosed royalties on sales (8/19)
Phylogica Ltd. (Australia; ASX:PYC)	MedImmune Inc. (subsidiary of AstraZeneca plc; UK)	Agreement to test Phylogica's Phylomer peptide library for antimicrobial peptides	Phylogica will receive \$750,000 up front, with an additional \$750,000 in committed research funding for an initial 12-month term; Phylogica also is eligible to receive development, regulatory and commercial milestone payments of up to \$98M, plus royalties (8/19)

Company* (Country; Symbol)	Company* (Country; Symbol)	Type/Product Area	Terms/Details (Date)
Proteonomix Inc. (OTC BB:PROT)	Proteonomix Inc. investors	Executed a joint venture agreement to create a new stem cell treatment and research facility in the United Arab Emirates	The investment group has committed \$5M and the joint venture will be called XGen Medical LLC; it will be owned 51% by Proteonomix and 49% by the investor group (8/18)
PURE Bioscience Inc. (PURE)	FTA Bioscience LLC*	Deal for product-specific licenses for development of a silver dihydrogen citrate-based treatment for tinea unguium (nail fungus) and tinea pedis (athlete's foot)	Financial terms were not disclosed (8/3)
Targacept Inc. (TRGT)	Cornerstone Therapeutics Inc. (CRTX)	Licensing deal for rights to nicotinic receptor-based patents and preclinical compounds targeting alpha7, primarily aimed at respiratory diseases	Targacept agreed to pay a \$1.5M up-front fee for the rights; additional payments to Cornerstone could range from \$45.6M to up to \$74.9M, depending on which of the two lead compounds successfully moves through development (8/4)
Valirx plc (UK; LSE:VAL)	Cancer Research Technology Ltd.* (UK)	Licensing agreement for Valirx's anticancer compound VAL201, which stops growth of hormone-resistant breast and prostate tumors in mice	Valirx will provide milestone payments in exchange for exclusive rights to treat, prevent and diagnose cancer and other diseases (8/13)
SEPTEMBER			
Artes Biotechnology GmbH* (Germany)	Select Vaccines Ltd. (Australia; ASX:SLT)	Deal under which Artes acquired the Anavax virus-like particle technology from Select Vaccines	Terms were not disclosed (9/28)
Asterand plc (PK:ATDPF)	Cellzome AG* (Germany)	Asterand's subsidiary, BioSeek LLC, signed a two-year agreement to apply its BioMAP predictive human disease models to support and advance Cellzome's discovery projects	The projects are focused on the treatment of inflammatory diseases (9/24)
Champions Biotechnology Inc. (OTC BB:CSBR)	Cephalon Inc. (CEPH)	Partnership to test the effectiveness of CEP-32496, Cephalon's B-Raf inhibitor, using Champions' Biomerk Tumorgraft in various cancer indications	No financial terms were disclosed (9/9)

Company* (Country; Symbol)	Company* (Country; Symbol)	Type/Product Area	Terms/Details (Date)
DM Corp. (India)	ORF Genetics (Iceland)	Joint venture to develop, produce and market human recombinant therapeutic proteins and biosimilars	DM brings expertise in management of preclinical research, clinical development and marketing, while ORF Genetics will supply expertise in plant genetics and protein biochemistry (9/2)
Evotec AG (Germany; PK:EVTCY)	Almirall SA (Spain; Madrid:ALM)	Partnership to identify small-molecule ion channel modulators for respiratory diseases using Evotec's screening platform	No financial details were disclosed (9/24)
Genmab A/S (Denmark; CSE:GEN)	Seattle Genetics Inc. (SGEN)	Partnership giving Genmab rights to use Seattle Genetics' ADC technology with its HuMax-TF antibody targeting the tissue factor antigen, which is expressed on numerous types of solid tumors	Seattle Genetics received an undisclosed up-front payment and has the right to exercise a co-development option for any resulting ADC products at the end of Phase I; it will receive research support payments and if it opts into an ADC product, the companies will co-develop and share all future costs and profits on a 50-50 basis (9/15)
HUYA Bioscience International LLC*	Quintiles Transnational Corp.*	Agreement to co-develop a cancer drug, HBI-8000, sourced in China by HUYA	Terms were not disclosed (9/29)
Jennerex Inc.*	Transgene SA (France; Paris:TNG)	Overseas deal for its mid-stage cancer product JX-594	Transgene gains European rights for an undisclosed equity investment and up to \$116M in milestones (9/9)
Ligand Pharmaceuticals Inc. (LGND)	Proximagen Ltd. (UK; LSE:PRX)	Exclusive licensing agreement for a series of compound hits related to the CXCR4 target	Ligand will receive an up-front payment and continue to be entitled to receive potential future milestone and royalty payments (9/20)
Morphosys AG (Germany; FSE:MOR)	Absynth Biologics Ltd.* (UK)	License and collaboration agreement for target molecules associated with <i>Staphylococcus aureus</i> infections	MorphoSys will generate antibodies using its HuCAL Platinum antibody library, which Absynth will test in relevant disease models; Absynth will receive an up-front payment, milestone payments and royalties (9/3)
Orexo AB (Sweden; SSE:ORX)	Newbridge Pharmaceuticals	Agreement for the licensing and distribution of breakthrough cancer pain drug Abstral (sublingual fentanyl) in the Middle East and Africa	Specific terms were not disclosed, but included up-front milestone and revenue-sharing payments (9/17)

Company* (Country; Symbol)	Company* (Country; Symbol)	Type/Product Area	Terms/Details (Date)
RedHill Biopharma Ltd.* (Israel)	Giaconda Ltd. (Australia; ASX:GIA); IntelGenx Corp. (Canada; OTC BB:IGXT)	Deal acquiring a clinical-stage drug to treat Crohn's disease and two additional gastrointestinal products from Giaconda; and a deal with IntelGenx to jointly develop a new drug formulation for acute migraine	Financial terms were not disclosed (9/14)
RTI Biologics Inc. (RTIX)	Athersys Inc. (ATHX)	Agreement to provide access to its Multipotent Adult Progenitor Cell technologies for RTI to use in certain orthopedic indications	Terms call for Athersys to receive a \$3M license fee; it also is eligible for up to \$37.5M in development milestones and up to \$35.5M in sales milestones, plus tiered royalties (9/14)
RXi Pharmaceuticals Corp. (RXII)	EyeGate Pharma Inc.*	Collaboration on the ocular delivery of RNAi therapeutics	EyeGate will contribute its iontophoresis technology for delivering RXi's Sd-rx-RNA compounds to the eye in preclinical models (9/23)
Topica Pharmaceuticals Inc.*	Undisclosed partner	Sublicense and purchase option agreement with an undisclosed partner to develop luliconazole	The product is a broad-spectrum antifungal (9/22)
Vivalis SA (France; Paris:VLS)	Mymetics Corp. (Switzerland; OTC BB:MYMX)	Research license agreement to evaluate the replication of an undisclosed virus in Vivalis' EB66 cell line for the manufacturing of human vaccines developed by Mymetics	Terms were not disclosed (9/29)
OCTOBER			
ACEA Biosciences Inc.*	Vivo Biosciences Inc.*	Collaboration for the further development of label-free and real-time cell-based assays for the xCELLigence System	The new assays will incorporate Vivo's HuBiogel platform (10/7)
BioDelivery Sciences International Inc. (BDSI)	TTY Biopharm Co. Ltd.*	Partnership to develop and commercialize BEMA Fentanyl in China and Taiwan in a deal potentially worth \$1.3M	The deal includes an up-front payment of \$300,000; BEMA Fentanyl is a treatment for breakthrough pain in cancer marketed as Onsolis in the U.S. and Canada (10/8)
Cypress Bioscience Inc. (CYPB)	Exagen Diagnostics Inc.*	Asset purchase deal for Exagen to acquire Cypress' diagnostic business for up to \$8M in up-front and milestone payments	Additional payments will come in the form of a 10% royalty on sales (10/12)

Company* (Country; Symbol)	Company* (Country; Symbol)	Type/Product Area	Terms/Details (Date)
ERYtech Pharma* (France)	Genzyme Corp. (GENZ)	Collaboration to develop a therapeutic enzyme formulation for Genzyme disease indications using technology developed by ERYtech	The agreement lasts for 15 months and will cover studies to evaluate the feasibility of enzyme encapsulation and preclinical studies of that formulation (10/13)
Fate Therapeutics Inc.*	BD Biosciences (unit of Becton, Dickinson and Co.; NYSE:BDX)	Collaboration and license agreement to help develop and then distribute commercially IPSC tools and technologies for use in both academic and industry R&D efforts	The deal includes an undisclosed up-front payment, research funding and milestones; the company also is eligible for royalties (10/14)
Immunovaccine Inc. (CDNX:IMV)	IRX Therapeutics Inc.* (Canada)	Partnership to study IRX's vaccines IRX-2 and DepoVax in order to determine whether a combination of the two vaccines is superior in generating an antitumor immune response	Financial terms were not disclosed (10/6)
International Stem Cell Corp. (OTC BB:ISCO)	Insight Bioventures India Private Ltd. (India)	Agreement to establish an Indian affiliate of ISCO to develop and commercialize ISCO's stem cell-derived corneal tissue products for blindness and visual impairment	The new affiliate will assist in the development of cell systems for drug screening and manufacture ISCO's Lifeline Cell Technology culture media (10/6)
Isogenica Ltd.* (UK)	NovaBiotics Ltd.* (UK)	Agreement to fast-track the development of NovaBiotics' platform peptide anti-infective technology	Financial terms were not disclosed (10/6)
Ligand Pharmaceuticals Inc. (LGND)	Venenum Biodesign LLC*	Agreement to sell its combinatorial chemical library and associated technology, including an ultra-high throughput screening platform, to Venenum	Venenum is buying everything for \$1.8M, paying \$1M at the close of the transaction and \$800,000 over a two-year period, plus 10% of revenues from resulting third-party collaborations for three years (10/8)
Morphosys AG (Germany; FSE:MOR)	Sloning BioTechnology GmbH*	Deal to integrate the Slonomics technology into the existing HuCAL antibody platform	Morphosys paid \$26.4M in cash to Sloning's shareholders (10/8)
NovaBiotics Ltd.* (UK)	Isogenica Ltd.* (UK)	Partnership to develop new applications for NovaBiotics' anti-infective drugs	NovaBiotics will work with Isogenica on two research projects, one concerning peptide selection and the other will be peptide maturation (10/5)

Company* (Country; Symbol)	Company* (Country; Symbol)	Type/Product Area	Terms/Details (Date)
Nuevolution AS* (Denmark)	Consortium with EpiTherapeutics Aps* (Denmark), ExpreS2ion Biotechnologies* (Denmark) and the research group of Kristian Helin of the Biotech Research & Innovation Centre at the University of Copenhagen	Discovery collaboration focused on epigenetic disorders	As part of the collaboration, Nuevolution will apply its Chemetics technology to screen hundreds of millions of small molecules (10/7)
Sirius Genomics Inc.* (Canada)	Golden Helix Inc.*	Partnership to develop a companion diagnostic for Vasopressin and similar drugs	Golden Helix will contribute its single nucleotide polymorphism and copy number variant analysis technology to Sirius's pipeline to identify potential genetic markers in septic shock and related disorders (10/13)
Stemedica International SA* (subsidiary of Stemedica Cell Technologies Inc.)	AnC Bio* (South Korea)	Agreement to form a joint venture with AnC Bio	The JV, to be named StemedicaAnC, will manufacture stem cells developed by Stemedica for ischemic stroke and other degenerative disorders (10/6)
Vivus Inc. (VVUS)	Meda AB (Sweden; SSE:MEDAA)	Agreement to sell Muse, Vivus' marketed product for erectile dysfunction, to its European partner, Meda	Meda is buying it for \$23.5M, including a \$22M up-front payment and a milestone payment of \$1.5M based on future sales of Muse; Vivus employees affiliated with Muse will join Meda (10/5)

Notes:

* Private companies are indicated with an asterisk. Unless otherwise notes, the trading symbols listed for public biotechnology companies are on the Nasdaq market.

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

ASX = Australian Stock Exchange; CDNX = Canadian Venture Exchange; FSE = Frankfurt Stock Exchange; LSE = London Stock Exchange; NYSE = New York Stock Exchange; OTC BB = Over-the-Counter Bulletin Board; PK = Pink Sheets; SSE = Stockholm Stock Exchange; TSX = Toronto Stock Exchange.

READING A HAND-ME-DOWN?

If you're reading this issue, but not a subscriber, please call us to start receiving your very own copy.

Or, for even more convenience, subscribe to our online version or have it e-mailed directly to you!

Authorized copying privileges and multi-user access for your entire office are available at discounted rates.

Simply call 1-800-688-2421 or 1-404-262-5476 for more information!

Manufacturing, Marketing and Distribution Agreements Between Biotech Companies: Aug. 1 - Oct. 14, 2010

Company* (Country; Symbol)	Company* (Country; Symbol)	Type/Product Area	Terms/Details (Date)
AUGUST			
Stellar Pharmaceuticals Inc. (Canada; OTC BB:SLXCF)	Laboratorios Inibsa SA* (Spain)	Agreement to distribute Uracyst for painful bladder syndrome in Spain	Inibsa will pay Stellar an up-front license fee and a specified transfer price (8/2)
SEPTEMBER			
DSM BioSolutions*	PolyTherics Ltd.* (UK)	Partnership to manufacture HiPeg IFN alpha-2a	The companies will adapt PolyTherics' pegylation method to develop a large-scale process for preclinical and clinical development (9/8)
Edimer Pharmaceuticals Inc.*	CMC Biologics A/S* (Denmark)	Manufacturing contract to support the development of EDI200 for the treatment of X-linked hypohidrotic ectodermal dysplasia	Financial terms were not disclosed (9/10)
Nabi Biopharmaceuticals Inc. (NABI)	Diosynth RTP Inc.*	Five-year commercial manufacturing agreement for the manufacture of a drug substance integral to the production of NicVAX, Nabi's vaccine to treat nicotine addiction and prevention of smoking relapse	Financial terms were not disclosed (9/2)
Santarus Inc. (SNTS)	S2 Therapeutics Inc.* and VeroScience LLC*	Distribution and license agreement granting Santarus exclusive rights to manufacture and commercialize Cycloset in the U.S.	Santarus is paying \$5M up front to S2 and VeroScience and will pay a product royalty of 35% of the gross margin associated with net sales up to \$100M of cumulative total gross margin, increasing to 40% thereafter (9/10)
Synthecon Inc.*	Biomerix Corp.*	Distribution agreement for three-dimensional cell culture scaffolds developed using Biomerix's biomaterial technology	No financial terms were disclosed (9/21)
OCTOBER			
ThromboGenics NV (Belgium; BR:THR)	MSD Biologics Ltd.* (UK)	A 10-year supply deal for the production of microplasmid	Financial terms were not disclosed (10/1)
Notes:			
* Private companies are indicated with an asterisk.			
The date indicated refers to the <i>BioWorld Today</i> issue in which the news item can be found.			
Unless otherwise noted, stock symbols listed are on the Nasdaq market.			
BR = Brussels Stock Exchange; OTC BB = Over-the-Counter Bulletin Board.			

Biotech–Biotech Collaborations: Modified Agreements: Aug. 1 - Oct. 14, 2010

Company* (Country; Symbol)	Company* (Country; Symbol)	Type/Product Area	Terms/Details (Date)
I. MODIFIED AGREEMENTS			
AUGUST			
Inspire Pharmaceuticals Inc. (ISPH)	Allergan Inc. (NYSE:AGN)	Amended marketing agreement that gives Inspire sole control over future development of Prolacria	The deal runs through Dec. 31, 2020; Inspire is entitled to receive revenues based on net sales of Restasis and any other human ophthalmic formulation of cyclosporine owned or controlled by Allergan (8/30)
Lexicon Pharmaceuticals Inc. (LXRX)	Symphony Capital LLC*	Lexicon bought back rights to LX6171 for cognitive disorders, LX1031 for irritable bowel syndrome and LX1032 for gastrointestinal disorders	Lexicon paid \$10M up front and will make deferred payments of \$50M, minus a 50% share of the expenses incurred by Lexicon up to an aggregate reduction of \$15M, plus contingent payments of up to \$30M (8/3)
NsGene AS* (Denmark)	Biogen Idec Inc. (BIIB)	Expanded license and commercialization agreement giving Biogen extended rights to Neublabin	Deal secures \$6M up front, for NsGene, plus an annual maintenance fee of \$1.5M in the years it doesn't receive a development milestone and until acceptance of the first regulatory filing (8/11)
SEPTEMBER			
Argenta Discover Ltd.* (UK; division of Galapagos NV; BR:GLPG)	Genentech Inc. (NYSE:DNA; unit of the Roche Group)	Contract extension to expand the portfolio of projects in the collaboration	Genentech gains integrated medicinal chemistry, in vitro biology and ADME services (9/13)
OCTOBER			
Labopharm Inc. (Canada; DDSS)	Paladin Labs Inc. (Canada; TSX:PLB)	Expanded relationship for Paladin to distribute two of Labopharm's products in certain jurisdictions	Financial terms were not disclosed (10/14)

BIO WORLD PERSPECTIVES

A free, weekly e-zine offering unique viewpoints on developments within the biotechnology industry. Sign-up today and get a fresh outlook on topics that you can't find elsewhere!

Go to BioWorld.com and click on "Perspectives"!

Company* (Country; Symbol)	Company* (Country; Symbol)	Type/Product Area	Terms/Details (Date)
Peregrine Pharmaceuticals Inc. (PPHM)	Affitech AS (Denmark; CSE:AFFI)	Amended worldwide license agreement for Brazil, Russia and other countries of the Commonwealth of Independent States (CIS) to develop a fully human antibody called AT001/r84	Peregrine and Affitech will reinvest their portions of any future milestone payments toward the further advancement of the product; if Affitech enters into a licensing deal for AT001/r84 in a major pharmaceutical market, it will reimburse Peregrine for its milestone payments applied to the program, and Affitech would be eligible for reimbursement for up to 50% of its development costs (10/1)

I. TERMINATED AGREEMENTS

Cerus Corp. (CERS)	BioOne Corp.* (Japan)	Ended their commercial rights agreement for the Intercept Blood System for inactivating bloodborne pathogens in blood transfusions	Cerus previously licensed the rights to BioOne for certain Asian markets; Cerus will transfer 1.17M shares of Cerus common stock, plus its equity interest in BioOne in order to regain those rights (8/30)
Numerate Inc.*	Intellikine Inc.*	Completed their research collaboration to discover small-molecule compounds targeting the PI3K/mTOR signaling pathway	The collaboration combined Intellikine's capabilities in X-ray crystal structure-guided medicinal chemistry and drug discovery with Numerate's computational drug design platform to identify inhibitors of PI3 kinase alpha (8/12)

Notes:

* Private companies are indicated with an asterisk.

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

Unless otherwise noted, stock symbols listed are on the Nasdaq market.

BR = Brussels Stock Exchange; CSE = Copenhagen Stock Exchange; NYSE = New York Stock Exchange; TSX = Toronto Stock Exchange.

'All My Clones': BioWorld's Biotech-Themed Soap Opera

Prada-wearing investment banker Odessa shook things up at a luncheon for the New York Biotechnology Association. She devised the Rational Research Bundle, a new way for big biopharma to invest – even when the numbers don't add up. But will the new M&A idea get her a big enough bonus to buy that marine blue Bottega Veneta coat?

Meanwhile, in California, Cappuccino Pharmaceuticals' Rupert Madasheck meets the mysterious Vivian. Will her VarpaWare technology still be able to help his fledgling firm after he learns she's his long-lost daughter?

To make sure you get "All My Clones" every month, **opt-in for free** to our weekly e-zine, *BioWorld Perspectives*. Just go to BioWorld.com and click on "BioWorld Perspectives."

Don't miss out! Our newest publication is frequently funny, thoroughly thought-provoking, exceptionally entertaining and always FREE.

The Week's Biggest Gainers and Losers

10 BIGGEST U.S. WINNERS FOR THE WEEK

(By Percent)		(By Dollars)	
Molecular Insite	64.72	SIGA Technologies	4.74
Rosetta Genomics	60.16	OncoGenex Pharm	3.69
SIGA Technologies	55.83	Myriad Genetics	2.39
Neopharm	36.36	Cephalon	2.39
Panacos Pharma	33.33	AMAG Pharma	1.68
Nanogen Inc	27.27	Gilead Sciences	1.40
OncoGenex Pharma	25.54	Forest Labs	1.39
Alseres Pharma	25.00	3SBio	1.28
Anthera Pharma	23.82	Anthera Pharma	1.26
Titan Pharma	19.44	Qiagen NV	1.25

10 BIGGEST U.S. LOSERS FOR THE WEEK

(By Percent)		(By Dollars)	
Alexza Pharma	-56.44	Acorda Thera	-2.35
Urigen Pharma	-21.43	Human Genome	-1.79
Acusphere	-17.50	Alexza Pharma	-1.71
Harbor BioSciences	-17.49	Dendreon	-1.40
Oxis International	-16.67	Alkermes	-1.12
AVAX Technologies	-16.67	InterMune	-0.87
Bio-Path Holdings	-12.50	Pharmacyclics	-0.62
BELLUS Health	-12.00	Affymax	-0.59
Palatin Technologies	-11.95	MAP Pharma	-0.59
Genex Biotech	-11.63	Genzyme	-0.56

BioWorld Stock Report For Public Biotechnology Companies

Company	Symbol	Close 10/8	Close 10/15	%Change		Vol (000)
				WK	YTD	
3S Bio	SSRX	12.65	13.93	10.12	1.75	347
Aastrom Biosci	ASTM	1.6101	1.47	-8.70	378.05	2573
Acadia Pharma	ACAD	0.9	0.875	-2.78	-33.71	862
Accentia Biopharma	ABPIQ	0.925	0.93	0.54	210.00	123
Access Pharma	ACCP	2.63	2.8	6.46	-14.89	467
Achillion	ACHN	2.82	2.84	0.71	-8.68	800
Acorda Therap	ACOR	31.28	28.93	-7.51	14.80	7563
Acusphere	ACUS	0.08	0.066	-17.50	-12.00	171
Adamis	ADMP	0.25	0.25	0.00	-21.88	194
Adolor	ADLR	1.15	1.31	13.91	-10.27	667
Advanced Life Sci	ADLS	0.0421	0.0401	-4.75	-76.41	3541
AEterna Zentaris	AEZS	1.31	1.28	-2.29	58.63	7745
Affymax	AFFY	5.68	5.09	-10.39	-79.43	3349
Affymetrix	AFFX	4.42	4.58	3.62	-21.58	5001
Albany Molecular	AMRI	6.8	6.73	-1.03	-25.88	210
Alexion Pharma	ALXN	67.4	67.77	0.55	38.82	4745
Alexza Pharma	ALXA	3.03	1.32	-56.44	-45.00	26532
Alimera Sciences	ALIM	10.89	10.84	-0.46	-1.45	174
Alkermes	ALKS	15.92	14.8	-7.04	57.28	9003
Allos Therapeutics	ALTH	4.57	4.56	-0.22	-30.70	8607
Alnylam Pharma	ALNY	12.73	13.68	7.46	-22.36	1089
Alseres	ALSE	0.2	0.25	25.00	25.00	8
AMAG Pharma	AMAG	18.88	20.56	8.90	-45.94	2627
Amgen	AMGN	56.39	56.71	0.57	0.25	38734
Amicus	FOLD	3.84	4	4.17	0.76	49
Amylin Pharma	AMLN	21.35	21.04	-1.45	48.27	8951
Anthera Pharma	ANTH	5.29	6.55	23.82	-6.56	801
Antigenics	AGEN	1.06	1.05	-0.94	64.06	2375
Ardea Biosciences	RDEA	23.92	23.68	-1.00	69.14	258
Arena Pharma	ARNA	1.67	1.7	1.80	-52.11	30216
Ariad Pharma	ARIA	3.91	3.91	0.00	71.49	3699
ArQule	ARQL	5.04	5.45	8.13	47.70	1682
Array BioPharma	ARRY	3.29	3.46	5.17	23.13	1113
Aryx	ARYX	0.3951	0.3798	-3.87	-88.17	767
Auxilium Pharma	AUXL	26.57	26.69	0.45	-10.97	3038
Avanir	AVNR	3.45	3.23	-6.38	70.00	13723
Avax Tech	AVXT	0.06	0.05	-16.67	-70.59	416
AVEO Pharma	AVEO	15.82	15.35	-2.97	70.75	1011
AVI BioPharma	AVII	1.84	1.91	3.80	30.82	4597
Bellus Health	BLUS	0.075	0.066	-12.00	-58.75	280
BioCryst Pharma	BCRX	5.02	5.02	0.00	-22.29	1120
Biodel	BIOD	4.46	4.21	-5.61	-3.00	4468
Biodelivery Sci	BDSI	3.2	3.44	7.50	-12.47	806
Biogen Idec	BIIB	57.59	57.66	0.12	7.78	8193
BioMarin Pharma	BMRN	21.87	21.97	0.46	16.80	4770
Biomimetic Therap	BMTI	11.66	12.14	4.12	1.76	461
Bio-path Holdings	BPTH	0.4	0.35	-12.50	-18.60	53
BioSante Pharma	BPAX	1.7	1.65	-2.94	13.79	3503
Cadence Pharma	CADX	9.78	9.69	-0.92	0.21	1982
Cardiome	CRME	6.02	6.5	7.97	46.07	967
Cardiovascular Bio	CVBT	0.2598	0.26	0.08	30.00	1238
Catalyst Pharma	CPRX	1.18	1.1	-6.78	74.60	85
Celera Genomics	CRA	6.25	5.88	-5.92	-14.78	7802
Celgene	CELG	57.83	58.21	0.66	4.54	15354
Cell Therapeutics	CTIC	0.3883	0.4263	9.79	-62.61	21680
Celldex Therap	CLDX	4.41	4.63	4.99	-0.86	1885

Company	Symbol	Close 10/8	Close 10/15	%Change		Vol (000)
				WK	YTD	
CEL-SCI	CVM	0.678	0.7	3.24	-22.22	5526
Cephalon	CEPH	61.5	63.89	3.89	2.36	5531
Cerus	CERS	3.71	3.82	2.96	91.96	1071
Chelsea Therap	CHTP	5.5	5.27	-4.18	95.19	2495
Cleveland Biolabs	CBLI	6.05	6.29	3.97	90.03	2022
Columbia Labs	CBRX	1.3	1.4	7.69	29.63	1578
CombiMatrix	CBMX	2.2375	2.2799	1.89	-64.38	38
Compugen	CGEN	4.69	4.73	0.85	-2.47	239
Corcept	CORT	3.84	3.73	-2.86	34.17	323
CorMedix	CRMD	1.41	1.44	2.13	-52.00	49
Cornerstone Therap	CRTX	6.33	6.4	1.11	4.92	220
Cortex Pharma	CORX	0.165	0.1611	-2.36	61.10	169
Crucell	CRXL	34.23	34.22	-0.03	69.57	813
Cubist Pharma	CBST	24.19	25.23	4.30	33.00	5220
Curis	CRIS	1.4	1.42	1.43	-56.31	1971
Cypress Biosci	CYPB	3.95	4.07	3.04	-29.46	2353
Cytokinetics	CYTK	2.49	2.37	-4.82	-18.56	1092
CytRx	CYTR	0.7997	0.894	11.79	-20.18	3427
Dara Biosciences	DARA	2.66	2.6501	-0.37	-62.46	88
Dendreon	DNDN	39.23	37.83	-3.57	43.95	16101
DepoMed	DEPO	4.75	5.04	6.11	50.45	1724
Discovery Labs	DSCO	0.2066	0.2374	14.91	-62.23	12189
DURECT	DRRX	2.77	2.75	-0.72	11.34	2157
Dusa Pharma	DUSA	2.44	2.52	3.28	62.58	163
Dyax	DYAX	2.35	2.4	2.13	-29.20	3578
Dynavax	DVAX	1.9	1.96	3.16	38.03	1922
Emergent BioSol	EBS	18.06	18.32	1.44	34.81	468
Emisphere Tech	EMIS	1.05	1.07	1.90	0.94	752
Entremed	ENMD	3.28	3.81	16.16	-56.70	338
Enzo Biochem	ENZ	3.96	4.3	8.59	-20.07	582
Enzon Pharma	ENZN	11.42	11.49	0.61	9.12	1249
Epcept	EPCT	0.6436	0.61	-5.22	-64.94	172
Exelixis	EXEL	4.23	4.6	8.75	-37.58	6012
Flamel Tech	FLML	7.59	7.6	0.13	2.70	168
Forest Labs	FRX	31.92	33.31	4.35	3.74	15380
Genex Biotech	GNBT	0.43	0.38	-11.63	-28.30	32532
Genomic Health	GHDX	14.06	14.15	0.64	-27.66	1050
Genoptix	GDX	16.07	15.8	-1.68	-55.53	883
Gen-Probe	GPRO	47.93	47.94	0.02	11.70	1800
GenVec	GNVC	0.61	0.5695	-6.64	-52.54	2077
Genzyme	GENZ	72.75	72.19	-0.77	47.30	16970
Geron	GERN	5.33	5.95	11.63	7.21	22389
Gilead Sciences	GILD	36.33	37.73	3.85	-12.80	42157
GTC Biotherap	GTCB	0.3	0.34	13.33	-54.67	129
GTx	GTXI	3.74	3.82	2.14	-9.05	488
Harbor Biosci	HRBR	0.183	0.151	-17.49	-70.39	1434
Harvard Bio	HBIO	3.89	3.94	1.29	10.36	287
Human Genome	HGSI	29.15	27.36	-6.14	-10.53	13817
Icagen	ICGND	1.25	1.2	-4.00	165.49	55
Idenix Pharma	IDIX	3.93	4.42	12.47	105.58	953
Idera Pharma	IDRA	3.22	2.89	-10.25	-44.10	247
Immucor	BLUD	16.52	17.16	3.87	-15.22	4161
ImmunoGen	IMGN	7.1	7.86	10.70	0.00	11071
ImmunoMedics	IMMU	3.47	3.57	2.88	11.21	2064
Incyte	INCY	16.76	16.96	1.19	86.17	6905
Infinity Pharma	INFI	5.68	5.73	0.88	-7.28	123

Company	Symbol	Close 10/8	Close 10/15	%Change WK	%Change YTD	Vol (000)
Inhibitex	INH	1.94	2.01	3.61	118.48	1656
Insmid	INSM	0.699	0.6763	-3.25	-12.17	1377
Inspire Pharma	ISPH	6.37	6.7	5.18	21.38	3961
InterMune	ITMN	15.48	14.61	-5.62	12.04	5755
Ironwood Pharma	IRWD	11.29	11.14	-1.33	-4.38	533
ISIS Pharma	ISIS	8.63	9.12	5.68	-17.91	6391
ISTA Pharma	ISTA	4.18	4.48	7.18	-1.75	1666
Keryx Biopharma	KERX	4.98	5.45	9.44	118.00	10166
La Jolla Pharma	LJPC	0.035	0.031	-11.43	-81.44	469
Labopharm	DDSS	0.97	1.04	7.22	-50.00	3140
Lexicon	LXRX	1.61	1.72	6.83	1.18	3883
Ligand Pharma	LGND	1.59	1.65	3.77	-23.96	2085
MannKind	MNKD	6.76	6.7	-0.89	-23.52	6268
Map Pharma	MAPP	16.6	16.01	-3.55	68.00	490
MDRNA	MRNA	2.27	2.45	7.93	202.47	254
Maxygen	MAXY	6.11	6.43	5.24	5.58	725
Metabolix Inc.	MBLX	13.4	13.76	2.69	24.52	673
Micromet	MITI	7.15	7.4	3.50	11.11	1816
Molecular Insight	MIP	0.771	1.27	64.72	-43.56	4793
Momenta Pharma	MNTA	14.14	14.43	2.05	14.52	2783
Myrex	MYRX	3.93	3.86	-1.78	-23.26	457
Myriad Genetics	MYGN	16.95	19.34	14.10	-25.87	11921
Nabi Biopharma	NABI	4.93	4.92	-0.20	0.41	748
Nanogen	NGEN	0.011	0.014	27.27	-40.43	477
Nektar Therap	NKTR	15.67	15.53	-0.89	66.63	2153
NeoPharma	NEOL	0.22	0.3	36.36	3.45	234
Neurocrine Biosci	NBIX	7.34	8.04	9.54	195.59	2811
NeurogesX	NGSX	6.76	7.1	5.03	-7.91	94
Northwest Biothera	NWBO	0.79	0.78	-1.27	-1.27	610
NovaBay	NBY	1.86	1.94	4.30	-5.83	104
Novavax	NVAX	2.19	2.32	5.94	-12.78	3708
NPS Pharma	NPSP	6.9	6.88	-0.29	102.35	1618
Omeros	OMER	7.3	7.39	1.23	5.27	246
OncoGenex Pharma	OGXI	14.45	18.14	25.54	-18.58	1236
Oncothyreon	ONTY	3.55	3.38	-4.79	-37.29	1082
Onyx Pharma	ONXX	26.66	27.4	2.78	-6.61	3783
Opko Health	OPK	2.46	2.52	2.44	37.70	1573
Optimer Pharma	OPTR	9.87	9.85	-0.20	-12.60	939
OraSure Tech	OSUR	4.44	4.51	1.58	-11.22	920
Ore Pharma	ORXE	0.27	0.3	11.11	-25.00	125
Orexigen	OREX	6.33	6.19	-2.21	-16.80	3731
Osiris Thera	OSIR	7.67	8.16	6.39	14.29	468
Osteotech	OSTE	6.46	6.48	0.31	102.50	445
OxIGENE	OXGN	0.2799	0.2702	-3.47	-76.30	10635
Oxis International	OXIS	0.114	0.095	-16.67	-52.50	555
Pain Therapeutics	PTIE	6.35	7.28	14.65	35.82	2305
Palatin Tech	PTN	1.59	1.4	-11.95	278.89	311
Panacos Pharma	PANC	0.006	0.008	33.33	-60.00	486
Protein Design	PDLI	5.37	5.52	2.79	-19.53	6052
Peregrine Pharma	PPHM	1.64	1.64	0.00	-44.59	1919
Pharma Prdt Dev	PPDI	24.66	24.14	-2.11	2.99	3528
Pharmacyclics	PCYC	7.88	7.26	-7.87	131.21	1872
Pharmasset	VRUS	31.98	32.04	0.19	54.78	700
Pharmos	PARS	0.1	0.1	0.00	53.85	231
Poniard Pharma	PARD	0.567	0.53	-6.53	-71.04	629
Pozen	POZN	6.78	7.3	7.67	22.07	939
Progenics Pharma	PGNX	4.98	5.42	8.84	22.07	923
Qiagen	QGEN	17.13	18.38	7.30	-17.69	12051
QLT Inc.	QLTI	5.91	5.79	-2.03	16.73	588
Regeneron Pharma	REGN	28.18	28.04	-0.50	15.96	2046
Repligen	RGEN	3.36	3.4	1.19	-17.27	48
Repro Therap	RPRX	0.3877	1.49	284.32	87.04	1795
Response Genetics	RGDX	2.3616	2.25	-4.73	78.57	74
Rexahn Pharma	RNN	1.15	1.17	1.74	72.06	1587
Rigel Pharma	RIGL	8.4	8.54	1.67	-10.20	987
Rosetta Genomics	ROSG	0.999	1.6	60.16	-8.57	1115
Rxi Pharma	RXII	2.84	3.13	10.21	-31.66	1381
Sangamo Biosci	SGMO	3.62	3.92	8.29	-33.78	834
Santarus	SNTS	3	3.15	5.00	-31.82	1736
Savient Pharma	SVNT	22.93	22.45	-2.09	64.95	6410
SciClone Pharma	SCLN	2.87	3.15	9.76	35.19	1022
Seattle Genetics	SGEN	16.77	17.04	1.61	67.72	9621
Sequenom	SQNM	7.08	7.16	1.13	72.95	6220
SIGA Tech	SIGA	8.49	13.23	55.83	128.10	15266
Somaxon Pharma	SOMX	3.77	3.79	0.53	250.93	4495
Spectrum Pharma	SPPI	4.28	4.39	2.57	-1.13	1847
StemCells	STEM	0.8207	0.8802	7.25	-30.14	8834
Sucampo Pharma	SCMP	3.58	3.41	-4.75	-15.59	146
Sunesis Pharma	SNSS	0.291	0.3055	4.98	-71.45	11325
SuperGen	SUPG	2.22	2.34	5.41	-10.69	3274
Synta Pharma	SNTA	3.96	3.84	-3.03	-24.11	541
Targacept	TRGT	22.54	22.98	1.95	9.95	397
Targeted Genetics	TGEN	0.4	0.4	0.00	150.00	459

Company	Symbol	Close 10/8	Close 10/15	%Change WK	%Change YTD	Vol (000)
Telik	TELK	0.73	0.7299	-0.01	-6.94	256
Tengion	TNGN	2.97	2.99	0.67	-86.57	68
Theravance	THR	21.86	22.85	4.53	74.83	2583
Titan Pharma	TTNP	1.08	1.29	19.44	-44.16	888
Transcept Pharma	TSPT	6.87	6.47	-5.82	-4.85	182
Transgenomic	TBIO	0.33	0.35	6.06	-49.28	232
Trimeris	TRMS	2.5	2.59	3.60	-1.15	427
Trinity Biotech	TRIB	6.52	6.61	1.38	63.61	182
Trubion Pharma	TRBN	4.59	4.63	0.87	20.26	47
Unigene	UGNE	0.65	0.6	-7.69	-16.67	132
United Therap	UTHR	55.84	55.47	-0.66	5.36	2624
Urigen Pharma	URGP	0.07	0.055	-21.43	-45.00	70
Vanda Pharma	VNDA	7.46	8.13	8.98	-27.73	1208
VaxGen	VXGN	0.3	0.31	3.33	-36.73	25
Vermillion	VRML	5.195	5.12	-1.44	-53.33	329
Vertex Pharma	VRTX	35.31	36.03	2.04	-15.92	9687
Vical	VICL	2.26	2.23	-1.33	-32.22	3698
ViroPharma	VPHM	15.77	16.15	2.41	92.49	4397
Vivus	VVUS	6.86	6.53	-4.81	-29.02	6989
XenoPort	XNPT	7.76	8.55	10.18	-53.91	1566
Zaliscus Inc	ZLCS	1.25	1.24	-0.80	-7.46	1856
ZymoGenetics	ZGEN	9.73	9.76	0.31	52.74	1166

LONDON STOCK EXCHANGE

Company	Symbol	10/8	10/15	%WK	%YTD	Volume
Antisoma	ASM	6	6	0.00	-81.82	1773
Ark Therapeutics	AKT	4.58	5	9.17	-64.41	3014
Asterand	ATD	13.7	12.17	-11.17	-34.57	118
Oxford Biomedica	OXB	9.21	10	8.58	-11.11	2046
Phytopharm	PYM	7.93	7.52	-5.17	-30.63	1919
Puricore	PURI	64	64	0.00	377.61	8
Renovo Group	RNVO	30	30.06	0.20	4.01	2227
SkyePharma	SKP	37.66	36.62	-2.76	-57.40	60
Vernalis plc	VER	46.5	46.73	0.49	-46.29	99

Note: Prices are denoted in pence.

TORONTO STOCK EXCHANGE

Company	Symbol	10/8	10/15	%WK	%YTD	Volume
Adherex Technol	AHX	0.03	0.035	16.67	-22.22	163
Allon Therap	NPC	0.465	0.435	-6.45	35.94	297
BELLUS Health	BLU	0.085	0.075	-11.76	-58.33	649
Bioniche Life Sci	BNC	1.63	1.8	10.43	221.43	801
Cangene Corp	CNJ	3.77	3.79	0.53	-25.69	76
Isotechnika	ISA	0.35	0.315	-10.00	90.91	1055
Lorus Therap	LOR	1.1	1.04	-5.45	1500.00	29
Medicago	MDG	0.395	0.44	11.39	-34.33	1586
MethylGene	MYG	0.17	0.16	-5.88	-42.86	34
Oncolytics Bio	ONC	4.52	4.81	6.42	74.91	509
Protox Therap	PRX	0.37	0.365	-1.35	-57.06	900
Resverlogix Corp	RVX	4.44	4.53	2.03	87.19	568
SemBioSys Gene	SBS	0.035	0.035	0.00	-82.50	593
Tekmira Pharma	TKM	1.33	1.31	-1.50	40.86	241
Thallion Pharma	TLN	0.125	0.14	12.00	27.27	190
Theratechnologies	TH	4.44	4.66	4.95	5.19	1148
Wex Pharma	WXI	0.15	0.135	-10.00	-18.18	33
YM BioSciences	YM	1.89	2.02	6.88	39.31	514

Note: Prices are denoted in Canadian dollars.

NOTES:

Trading volumes for Nasdaq, Amex and NYSE are recorded as the total number of shares traded (in thousands) on a weekly basis (cumulative Monday through Friday); the weekly and YTD % changes are from IPO completion, where applicable.

Average Percent Change Week: +3.72%

Range: -56.44% to +64.72%; Number Of Companies: 217 (does not include LSE or TSX; not market weighted)

Average Percent Change YTD: +10.49%

Range: -88.17% to +378.05%; Number Of Companies: 217 (does not include LSE or TSX; not market weighted)