

Venture Capital Funding and M&A Quarterly

Biotechnology · Pharmaceuticals Medical Devices

1st Quarter, 2008 – United States

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Summary

The long boom in venture funding of life-science startups may have finally peaked. In the first quarter, biotechnology, pharmaceutical and medical-device startups raised a total of \$2.4 billion in venture-capital funding, a 9 percent decline compared to the previous quarter (see Table 1). The number of companies receiving funding fell by 10 percent to 197.

M&A activity looked even more dismal, falling by 73 percent in value terms since the fourth quarter (see Table 2).

Medical-device companies proved the most resilient during the quarter, with 82 companies drawing \$947 million in new funding – both figures up one percent compared to the previous quarter. New forms of glucose testing for diabetics, along with aneurysm-treatment devices and oxygenation therapies, drew substantial venture interest.

Biotechnology funding, by contrast, plunged to \$598 million, a 35 percent decline from the fourth quarter. Backers showed no clear preference for any particular technology or disease orientation as they pulled in their horns, instead backing an array of largely established drug modalities – particularly antibodies – and common disease targets such as cancer and inflammation. There were, of course, a few exceptions, including investments in RNA interference and neural stem cells.

In sharp contrast to both devices and biotech, pharmaceutical deals grew larger during the quarter as VCs steered their funding toward later-stage companies, although the number of companies funded didn't change appreciably compared to the fourth quarter. Startups focused on infectious disease and a few unique approaches such as drug-mediated neuro-regeneration were among the quarter's big winners.

Funding Activity

Biotechnology Notable biotechnology investments in the quarter included startups with new techniques for addressing inflammation, RNA interference and synthetic biology.

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[Taligen Therapeutics](#), for instance, is an Aurora, Colo., startup with a novel approach to tamping down runaway inflammatory reactions. The company, which raised \$65 million in a Series B round – one of the largest such fundings for a drug startup not specifically focused on in-licensing activity – is taking aim at the “complement system,” an arm of the innate immune system that amplifies inflammatory response. The company hopes that its drugs, which remain in preclinical development, will eventually succeed as both systemic and local anti-inflammatories.

A slightly unconventional drug-delivery play involved [PhaseRx](#), a Seattle biotech that raised \$19 million in a Series A round. (That funding will be tranching, so PhaseRx has so far received only \$4 million.) The company's work lies in the hot field of RNA interference, but unlike other startups such as [Alnylam](#) or [Sirna Therapeutics](#) (which was acquired by [Merck](#) in 2006 for more than \$1 billion), PhaseRx doesn't aim to develop its own drugs. Instead, the startup appears focused on synthetic polymers designed to help RNAi molecules cross into cells, which has been a stumbling block for the technology.

Two other biotech startups represented interesting departures from run-of-the-mill investments in oncology and autoimmune disease. [Q Therapeutics](#), a Salt Lake City biotech that raised \$15 million in a Series B round, is developing a neural stem-cell treatment for a form of multiple sclerosis. The company hopes that the specially derived cells can encourage the formation of new glial cells in damaged neural tissue, shielding nerve fibers that have lost a protective myelin coating to disease.

By contrast, [Codon Devices](#), a Cambridge, Mass., startup, isn't focused on treatments at all. Instead, the “synthetic biology” company, which raised an \$11 million extension to its Series B funding, aims to design artificial genes that can “program” cells in a variety of ways, including the production of drugs, chemicals and biofuels.

Overall, Taligen drew the largest biotechnology funding in the quarter. Close behind was [Alder Biopharmaceuticals](#), a Bothell, Wash., startup that raised \$40 million for the production of new antibodies in

yeast cells. Traditional antibody-based drugs are produced using an older process that can take a year or more. Alder, by contrast, claims to be able to make new antibodies in just a few months.

Pharmaceuticals

Pharmaceutical deals also covered the waterfront in the first quarter, although a few of the most intriguing fundings involved drug-mediated neuro-regeneration and drug-device combinations.

The sector's fifth largest funding in the quarter, for instance, went to [BrainCells](#), a San Diego company whose in-licensed drug, it believes, can help stimulate the re-growth of damaged neurons. BrainCells raised \$30 million in a Series B round, and plans to test its lead drug candidate – which its previous owner had earlier tried as a potential Alzheimer's disease therapy -- as a treatment for depression and anxiety in phase II trials.

Two other startups focused on implantable devices that elute drugs in order to reduce inflammation or other side effects. Such “drug-device combinations” are fairly popular these days, particularly as devices grow more sophisticated in their ability to release drugs in particular locations or under specific conditions.

The first of these, [Alimera Sciences](#), is an Alpharetta, Ga., startup that raised \$30 million in a Series C round. Although initially a reseller of over-the-counter eye drugs, the company has now partnered with the nanotechnology concern [pSivida](#) to produce its drug-device combo Medidur. The treatment consists of a tiny structure designed for implantation in the back of the eye, where it can emit small quantities of a corticosteroid in order to control a blinding condition called diabetic macular edema.

Next up is [TyRx Pharma](#), which is focused on implantable surgical pouches that are infused with antibiotics and other drugs intended to prevent infection. Its current products include meshes used for hernia repair or as pouches for implanted defibrillators.

The two largest pharmaceutical fundings both involved specialty-pharma companies focused almost entirely on selling in-licensed drugs – and occasionally acquiring the companies that make them. [EKR Therapeutics](#), of Cedar Knolls, N.J., raised \$145 million in equity and

debt, although much of that was devoted specifically to acquiring several heart drugs from the failing biotech [PDL Biopharma](#) (Nasdaq: PDLI).

Similarly, the transatlantic specialty pharma [EUSA Pharma](#) raised \$50 million in an undisclosed round. In a surprise twist, however, the company spent \$35 million of that sum to acquire the publicly traded biotech [Cytogen](#), which the specialty pharma went on to take private.

Medical Devices

Oddly enough, new approaches to measuring blood glucose – essential for diabetes control – garnered some of the most venture interest in the still-robust medical-devices field.

[Luminous Medical](#), for instance, raised \$23.5 million in a Series B round for a hospital-based glucose meter. The Carlsbad, Calif., startup's device aims to provide automatic and near-continuous glucose measurements for hospitalized patients in order to prevent sudden spikes or crashes that can produce serious complications, particularly in diabetic patients.

[IntelliDx](#), of Santa Clara, Calif., is producing a similar hospital-based glucose meter. The company raised \$21.5 million in a Series D round.

Another startup with intriguing device technology is [PolyRemedy](#), a Mountain View, Calif., startup with a robotic system for producing customized wound dressings. The PolyRemedy device is intended for hospitals and medical clinics, where it can be used to produce tailored bandages for diabetic ulcers, particularly on the feet and other extremities. The company raised \$25 million in a Series B round.

The largest device funding of the quarter was also one of the most interesting, as TriVascular raised \$65 million as part of its spinout from Boston Scientific. The twist here is that the Santa Rosa, Calif., startup was acquired by [Boston Scientific](#) (NYSE: BSX) in 2005, and has just been disgorged again to pursue its devices for repairing abdominal aneurysms. (Thirty million dollars of the proceeds went directly to Boston Scientific to pay for the spinout.)

Runner-up in the biggest-fundraising sweepstakes was [TherOx](#), an Irvine, Calif., startup that raised \$30 million in an undisclosed funding round (believed to be its tenth). TherOx makes a “hypersaturated” oxygen system intended for heart-attack patients – the idea is that loading up blood with oxygen and then infusing it near the heart will help prevent damage to the muscle there.

Table 1

Venture Funding Activity– 1st Quarter 2008

Industry	Total Amount Funded	% Change Vs. Prior Quarter	Number of Companies Funded	% Change vs. Prior Quarter
Biotechnology	\$598 Million	- 35 %	65	- 27 %
Pharmaceuticals	\$807 Million	+ 13 %	50	0 %
Medical Devices	\$947 Million	+ 1 %	82	+ 1 %
Total	\$2.35 Billion	- 9 %	197	- 10 %

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M&A Activity

Mergers and acquisition activity fell dramatically in the first quarter, with only \$569 million in transactions – a 73 percent drop compared to the previous quarter. Only seven deals took place, less than half of those previously reported for Q4, 2007.

By far the most significant deal in the quarter involved [Teva Pharmaceutical Industries'](#) (Nasdaq: TEVA) \$400 million acquisition of [CoGenesys](#), itself a spinout of [Human Genome Sciences](#) (Nasdaq: HGSI). The generic-drug maker's acquisition of a protein-drug developer probably had less to do with its interest in the CoGenesys pipeline than in its biologics manufacturing capacity, which could be turned to the manufacture of generic biologics – particularly if the U.S. joins Europe in creating a regulatory pathway for biogenerics.

About the only other deal of note was Invitrogen's \$57 million purchase of [CellzDirect](#), a Research Triangle Park, N.C., startup that produces liver-cell-based products for screening and testing drug candidates. [Wright Medical](#) (Nasdaq: WMGI) also shelled out \$27 million to acquire [InBone Technologies](#), a maker of spinal-fusion and ankle-replacement implants.

Table 2

Venture M&A Activity– 1st Quarter 2008

Industry	M&A Transaction Amounts	% Change Vs. Prior Quarter	M&A Number of Transactions	% Change vs. Prior Quarter
Biotechnology	\$466 Million	- 42 %	3	- 57 %
Pharmaceuticals	\$75 Million	N/A	2	0 %
Medical Devices	\$28 Million	N/A	2	- 75 %
Total	\$569 Million	- 73 %	7	- 59 %

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Notes

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The database obtains transaction and company information from a wide variety of reputable public and private sources. While this report is free of charge, users may view the individual transactions supporting the totals herein by subscribing to VentureDeal for \$25.

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