Biotech R&D still reeling

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As a percentage of gross domestic product, US R&D spending lies behind that of Japan, Korea, Finland and Iceland. Corporate R&D has been in a tailspin since 2001, but in the United States other sources have taken up the slack. On the whole, for biotech companies this has

meant fewer research deals from their pharma partners. Double-digit growth in R&D budgets (typically about one-quarter of revenue) is common at large biotechs; small firms are building smaller R&D budgets at an even brisker pace.

US R&D performance in public and private sectors

The cost of business R&D performed has fallen by \$12 billion in the past three years, but the total remains fairly stable owing to federal government and university R&D.

In constant 1996 dollars. 2003 data is preliminary. Source: National Science Foundation

Deals by biotech research field

Genomics/proteomics deals are increasingly passé, whereas large molecule and antibody deals are back in vogue.

Includes research deals, collaborations and product acquisitions. Source: Windhover, Burrill & Company

Research alliances among top 20 pharma firms

Last year, the value of deals made by the largest pharma companies fell by \$1 billion.

Top 20 pharmaceutical companies as determined by sales. Source: Windhover, Burrill & Company

Total national expenditure on R&D

Among these top R&D spending countries, only the United Kingdom has cut its R&D spending as a portion of gross domestic product in the past few decades.

Source: OECD

Deals by therapeutic research category

The past year witnessed a small rise only in research deals focusing on metabolic disorders and blood and coagulation disorders.

Includes research deals, collaborations and product acquisitions for pharmaceutical and biotechnology companies. Source: Windhover, Burrill & Company.

Companies ranked according to annual increase in R&D spending

	Company	Ticker	% change	R&D 03 [†]	R&D as % of revenue
Major biotechs*	Biogen Idec	BIIB	149%	233	34%
	Invitrogen	IVGN	62%	55	7%
	Amgen	AMGN	48%	1,655	20%
	Cephalon	CEPH	33%	170	24%
	Serono	SRA	31%	468	23%
	Chiron	CHIR	26%	410	23%
	Gilead Sciences	GILD	22%	165	19%
	Genentech	DNA	16%	722	22%
	Celltech	CCH.L	11%	193	30%
	Genzyme	GENZ	9%	335	20%
Smaller biotechs**	Albany Molecular Research	AMRI	340%	22.5	11%
	Dov Pharmaceutical	DOVP	120%	22.7	764%
	AtheroGenics	AGIX	100%	45.7	NA
	Aeterna Laboratories	AEL	83%	33.6	27%
	Indevus Pharmaceuticals	IDEV	83%	24.3	464%
	Flamel Technologies	FLML	65%	20.2	80%
	Pharmion	PHRM	64%	24.6	96%
	Neurocrine Biosciences	NBIX	63%	177.3	127%
	Vicuron Pharmaceuticals	MICU	62%	77.9	811%
	Amylin Pharmaceuticals	AMLN	58%	149.4	174%
	Actelion	SWX:ATLN	57%	60.7	26%

*Major biotechs are any company with revenues in excess of \$500 million. **Smaller biotechs include companies with less than \$200 million in revenue and at least \$20 million in R&D spending. [†]R&D in \$ millions. Source: Revere Research; Company Data