

# Biotech patents—business as usual?

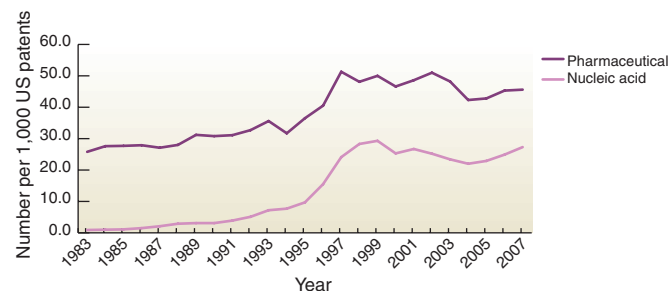
Stacy Lawrence

Patenting of biotech inventions in 2007 remained steady, but below the highs of 2002. Last year, Genentech (So. San Francisco, CA, USA) was issued the highest number of new patents, overtaking the University of California system. The University of Michigan (Ann Arbor, MI, USA),

Immunex (Seattle), Roche Diagnostics (Basel), Schering (Kenilworth, NJ, USA) and Syngenta (Basel) all entered the top 20. Patents in cardiovascular disease and oncology continued to dominate. Obtaining a patent in Europe remains more costly than elsewhere.

## Patent share for biotech and pharmaceutical terms

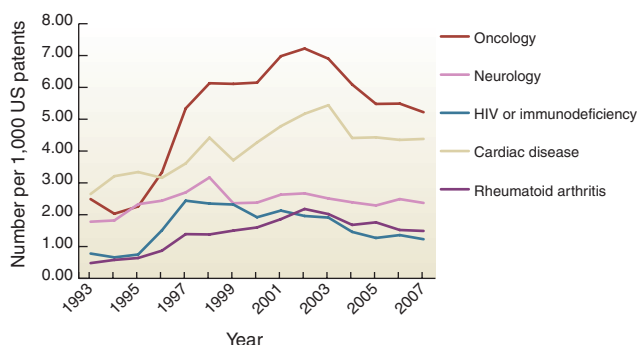
Biotech and pharma patenting in the United States continues to climb as a share of total patents from a low in 2004.



Based on the appearance of the words “pharmaceutical” or “nucleic acid” in the specification of approved US Patent and Trademark Office patents. Source: Finnegan, Henderson, Farabow, Garrett & Dunner

## US patent share by therapeutic area

Patents related to specific disease areas declined slightly, but cardiac disease or oncology continue to figure prominently.



2007 US Patent and Trademark Office data. Oncology, cardiac disease and neurology include related terms. Based on a search of terms in the specification section of patent or application. Source: Finnegan, Henderson, Farabow, Garrett & Dunner

## Patent cost comparison at the major patent offices

	File and research costs (€)	Examination cost (€)	Delivery cost (€)	Fees (€)	Translation (€)	Wage (€)	Total (€)
European Union	810 + 510	1431	715	16,790	12,600	1,700	49,900
US	690	0	1,210	2,730	NA	5,700	10,330
Japan	210	1,100	850	5,840	NA	8,450	16,450

Source: OECD

## Selected US institutions with biotech IP

Institution	2006 total R&D revenue (\$ millions)	Biotech intellectual property (primary licensee)
University of California system	193.4	Hepatitis B surface antigen vaccine (Chiron), detachable coils for treating intracranial aneurysms (Boston Scientific) and bovine growth hormone (Monsanto)
New York University	157.0	Remicade/infliximab in autoimmune disease (Centocor and Johnson & Johnson)
Stanford University	61.3	Cohen-Boyer patents
University of Minnesota	56.0	Ziagen/abacavir for HIV (GlaxoSmithKline)
University of Florida	49.0	Trusopt/dorzolamide for glaucoma (Merck)
University of Rochester	38.0	HibTITER/conjugate <i>Haemophilus influenzae</i> type b meningitis vaccine and Prevnar/7-valent vaccine comprising saccharides of <i>Streptococcus pneumoniae</i> capsular antigens for meningitis (Wyeth)
Northwestern University	29.9	Lyrica/pregabalin for nerve pain and fibromyalgia (Pfizer)
University of Massachusetts	27.2	RNAi technology (Alnylam)
Mount Sinai School of Medicine	20.1	CP-400 small molecule for oncology (Clavis Pharma), plasmid rescue technology (MedImmune/GlaxoSmithKline)
University of Utah	16.3	Actiq drug-delivery technology (Cephalon), <i>BRCA1/BRCA2</i> genetic tests for breast cancer (Myriad)

Source: Forbes

## Top 20 organizations with the most US biotech patents issued

2007		2006	
Institution	Number of new patents	Institution	Number of new patents
Genentech	264	University of California	134
University of California	129	Genentech	124
US government	113	US government	84
E.I. du Pont de Nemours	72	Pioneer Hi-Bred	81
Applera	53	E.I. du Pont de Nemours	80
Monsanto	50	Applera	62
Agilent Technologies	46	Human Genome Sciences	59
Merck	39	Agilent Technologies	55
Bayer	38	Millennium	54
Human Genome Sciences	37	University of Texas	49
Millennium	33	Amgen	41
University of Texas	33	Affymetrix	37
Amgen	33	Merck	34
Immunex	33	Stanford	34
Roche Diagnostics	33	MIT	34
ISIS	30	Monsanto	33
Schering	30	Cornell	33
University of Michigan	25	Wisconsin Alumni Research Foundation	31
Cornell	25	Sanofi or Aventis	30
Syngenta	24	Chiron	29

US Patent and Trademark Office patents featuring the term ‘nucleic acid’ in the specification section of the patent. Source: Finnegan, Henderson, Farabow, Garrett & Dunner University/research institution, Government, Business

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