

# Biotech patenting upturn

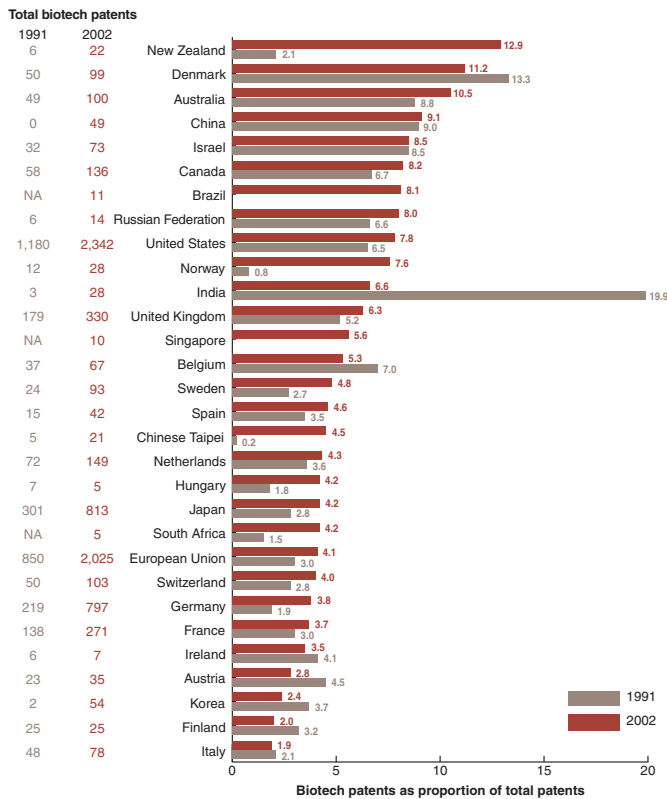
Stacy Lawrence

For the first time in ~5 years, biotech and pharmaceutical patenting picked up slightly as a share of total patents. In 2005, 23 out every 1,000 US patent specifications refer to 'nucleic acid,' and 43 out of 1,000 reference 'pharmaceutical.' Almost 6,000 biotech patents were awarded

by the European Patent Office in 2002; relative share of biotech intellectual property (IP) has grown strongly in New Zealand, Norway and Chinese Taipei, but has diminished in Austria, Italy, Finland, Belgium and Ireland.

## Biotech patents as a portion of national total

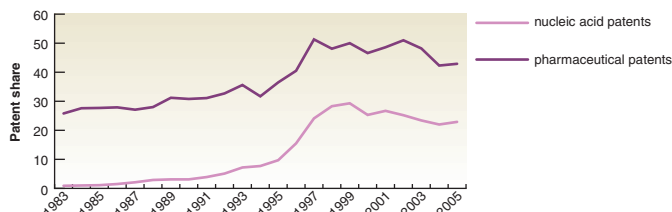
As a proportion of all patents at European Patent Office, biotech IP grew rapidly in New Zealand, Norway and Chinese Taipei, but shrank in Italy, Finland, Belgium, Ireland, Korea and India.



Based on portion of biotech patents out of the total patents filed with European Patent Office. Numbers next to bar indicate total number of biotech patents in year. Source: Organization for Economic Cooperation and Development

## Patent share for biotech and pharmaceutical terms

For the first year since 1999, both pharmaceutical and biotech-related patents increased slightly.



Based on terms in specification of USPTO patents by approval year. Patent share is the number per 1,000 patents. Source: Finnegan, Henderson, Farabow, Garrett & Dunner

## Top 20 organizations with most US biotech patents approved

2005		2004	
Institution	Number of new patents	Institution	Number of new patents
University of California	99	University of California	118
US government	84	US government	87
Applera	63	Human Genome Sciences	82
Human Genome Sciences	58	ISIS Pharmaceuticals	65
Genentech	54	Applera	54
ISIS Pharmaceuticals	42	Genentech	54
Pioneer Hi-Bred	42	Millennium Pharmaceuticals	48
Agilent Technologies	39	E.I. duPont	48
Millennium Pharmaceuticals	36	Affymetrix	45
University of Texas	36	Corixa	42
E. I. du Pont de Nemours	33	Pioneer Hi-Bred	41
Affymetrix	32	University of Texas	41
Amgen	28	Caliper Technologies	35
University of Michigan	27	Immunex	35
MIT	26	SmithKline Beecham	33
Columbia University	25	Monsanto	31
Lexicon Genetics	23	Columbia University	28
Bayer	22	Cornell University	27
Chiron	21	Genencor International	25
Merck	19	California Institute of Technology	23

US Patent and Trademark Office (USPTO) patents featuring the term 'nucleic acid' in the specifications of the patent. Source: Finnegan, Henderson, Farabow, Garrett & Dunner. University, Government, Business.

## Research terms in approved US patents and patent applications

Issued patents			Published applications				
Term	Number	Number per one thousand patents	Percent change from 2004	Term	Number	Number per one thousand patents	Percent change from 2004
RNA interference or RNAi	67	0.4	63%	RNA interference or RNAi	1,438	5.0	36%
HIV or immunodeficiency	1,943	12.3	28%	HIV or immunodeficiency	6,449	22.3	6%
Stem cell	562	3.6	21%	Stem cell	2,512	8.7	5%
Reverse transcriptase	1,177	7.5	14%	Drug delivery	5,934	20.5	4%
Polymerase chain reaction	2,193	13.9	13%	Catheter or stent	7,431	25.7	2%
Drug delivery	1,505	9.5	11%	Brain	8,412	29.0	0%
Arthritis	1,978	12.5	10%	Growth factor	6,840	23.6	-1%
Protease	2,451	15.5	9%	Kinase	8,450	29.2	-3%
Brain	2,585	16.4	7%	Antibody	14,593	50.4	-4%
Kinase	2,488	15.8	7%	Nucleic acid	12,075	41.7	-4%
Heart disease	4,226	26.8	6%	Heart disease	13,046	45.0	-4%
Gene therapy	1,305	8.3	6%	Cancer	17,961	62.0	-4%
Amino acid	5,250	33.3	6%	Protease	7,348	25.4	-5%
Peptide	4,906	31.1	5%	Protein	25,564	88.3	-5%
Nucleic acid	3,610	22.9	4%	Monoclonal	9,934	34.3	-5%
Transgenic	1,775	11.3	4%	Nucleotide	11,341	39.2	-5%
Antibody	4,370	27.7	4%	Peptide	15,471	53.4	-6%
Nucleotide	3,581	22.7	3%	Amino acid	16,042	55.4	-6%
Growth factor	1,726	10.9	3%	Pharmaceutical	21,718	75.0	-6%
Cancer	5,336	33.8	2%	Gene therapy	4,608	15.9	-7%
Pharmaceutical	6,759	42.8	1%	Hybridoma	3,569	12.3	-7%
Monoclonal	2,906	18.4	1%	Genomic	8,381	28.9	-7%
Hybridoma	1,030	6.5	1%	Transgenic	5,972	20.6	-8%
Protein	8,061	51.1	1%	Arthritis	6,558	22.6	-8%
Genomic	2,525	16.0	-1%	Polymerase chain reaction	6,804	23.5	-8%
Catheter or stent	2,359	15.0	-4%	Reverse transcriptase	4,142	14.3	-9%

2005 USPTO data. Cancer, arthritis, heart disease and brain include related terms. Search term in specifications of patent or application. Source: Finnegan, Henderson, Farabow, Garrett & Dunner

© 2006 Nature Publishing Group http://www.nature.com/naturebiotechnology