

TABLE S8-19

USPTO patents and patent families granted in biotechnology, by region, country, or economy: 1998–2018

(Number)

Region, country, or economy	1998		1999		2000		2001		2002		2003		2004		2005		2006		2007		2008		2009		2010		2011		2012		2013		2014		2015		2016		2017		2018	
	USPTO patents	Patent families	USPTO patents	Patent families	USPTO patents	Patent families	USPTO patents	Patent families	USPTO patents	Patent families	USPTO patents	Patent families	USPTO patents	Patent families	USPTO patents	Patent families	USPTO patents	Patent families	USPTO patents	Patent families	USPTO patents	Patent families	USPTO patents	Patent families	USPTO patents	Patent families	USPTO patents	Patent families	USPTO patents	Patent families	USPTO patents	Patent families	USPTO patents	Patent families	USPTO patents	Patent families	USPTO patents	Patent families	USPTO patents	Patent families		
China	7	33	3	32	6	121	8	148	13	79	12	275	13	549	17	603	26	881	37	945	28	1,001	27	1,108	46	1,773	45	2,728	59	4,489	81	5,582	99	5,144	98	4,784	131	3,994	174	5,271		
India	6	3	4	4	8	4	12	6	19	16	29	20	22	15	19	7	27	15	23	14	21	5	24	33	5	24	4	30	6	37	9	37	7	37	5	50	2	52	3			
Japan	440	678	367	657	308	741	341	450	283	248	271	351	275	423	261	408	368	506	347	528	361	610	308	709	425	791	511	836	433	754	457	784	488	710	472	715	450	641	391	501	376	539
Malaysia	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	3	9	2	1	2	5	12	4	12	4	8	7	8	4	7	3	15	3	18	2	23	4		
Singapore	4	3	3	0	3	0	3	1	1	0	4	0	4	3	4	0	9	1	7	1	7	1	8	3	8	2	19	1	20	1	28	4	28	1	35	1	32	0	43	2		
South Korea	18	250	33	405	24	255	43	129	34	179	36	324	27	632	35	822	74	957	61	1,068	47	857	62	411	102	579	104	795	110	1,093	132	1,269	160	1,458	156	1,133	176	1,176	229	1,445	228	1,326
Taiwan	16	14	14	18	11	16	29	29	25	25	16	27	18	40	17	47	40	53	30	69	35	53	42	61	60	79	51	78	75	115	69	180	80	150	70	138	65	162	74	69	91	
All others	0	1	2	1	2	2	1	1	1	1	0	1	1	2	1	0	3	2	1	3	2	1	1	1	4	3	3	2	6	3	6	1	9	3	7	4	4	10	5	11	6	
Middle East	35	11	43	10	30	8	35	14	34	11	39	9	26	5	16	3	38	3	37	6	32	4	46	4	53	3	66	8	72	5	86	5	89	6	96	4	96	6	111	7	103	6
Israel	35	9	42	10	30	6	34	12	34	10	39	9	26	4	16	38	2	36	1	6	32	3	46	3	53	2	65	3	68	1	83	2	81	2	90	3	89	2	102	2	89	2
All others	0	2	1	1	0	2	1	2	0	1	0	0	0	1	0	1	0	1	1	0	1	0	1	0	1	1	5	4	4	2	3	8	4	6	2	7	4	4	9	4	14	4
Africa	1	6	3	8	3	4	4	2	3	4	2	8	1	6	0	8	2	6	2	3	2	21	3	23	3	12	5	4	4	8	4	11	6	11	6	6	4	5	4	7	0	
South Africa	1	5	1	7	1	3	2	2	2	1	1	5	1	3	0	4	1	5	1	2	1	14	2	12	3	7	4	4	0	3	0	4	0	8	2	8	0	4	0	2	0	7
All others	0	1	1	2	1	1	2	0	1	3	1	3	0	3	0	4	1	1	1	0	1	7	1	10	1	4	1	4	1	4	2	5	1	7	2	4	1	6	1	4	3	7
Australia and Oceania	55	24	60	21	44	23	64	32	58	58	34	26	36	36	35	36	62	32	44	44	49	54	60	28	70	36	82	49	81	75	95	70	90	106	74	137	79	180	74	29	76	19
Australia	51	22	53	18	39	22	60	31	46	55	28	26	32	35	32	50	31	36	44	42	54	48	28	28	57	36	66	48	66	74	69	105	59	135	63	179	61	28	64	19		
New Zealand	3	1	7	2	6	1	4	1	11	3	5	0	8	0	3	1	12	1	7	0	7	0	11	0	13	0	16	1	14	1	16	0	21	1	15	2	16	1	13	0	12	0
All others	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Unclassified	1	7	2	21	0	26	0	1	1	0	0	1	0	2	0	0	0	0	0	0	0	2	0	1	0	0	0	0	0	0	0	0	2	1	2	2	0	1	0	2	0	

EU = European Union; USPTO = U.S. Patent and Trademark Office.

Note(s)

USPTO patents are allocated according to patent inventorship information. USPTO patents are fractionally allocated among regions, countries, or economies based on the proportion of residences of all named inventors. Patents are classified under the World Intellectual Property Organization (WIPO) classification of patents, which classifies International Patent Classification (IPC) codes under 35 technical fields. IPC reformed codes take into account changes that were made to the WIPO classification in 2006 under the eighth version of the classification and were used to prepare these data. However, because PatentsView only provides the original IPC codes as they appeared on patents and not the IPC reformed codes, current Cooperative Patent Classification codes on patents were converted back to the most recent IPC classification to prepare these statistics. Fractional counts of patents were assigned to each technological field on patents to assign the proper weight of a patent to the corresponding technological fields under the classification. International Patent Documentation (INPADOC) patent families across all patent offices covered in the Worldwide Patent Statistical Database (PATSTAT) are counted according to the year of the first granted patent in the patent family. Patent families are allocated according to patent inventorship information found on the priority patent of the INPADOC patent families. To account for missing ownership information in PATSTAT for some offices, a method designed by de Rassenfosse et al. (2012) is used to fill in missing information on priority patents using information in successive filings within the patent families (see technical documentation for details). Patent families are fractionally allocated among regions, countries, or economies based on the proportion of residences of all named inventors. Because of data coverage issues for some patent offices in PATSTAT, statistics for some countries may be underestimated partially for some years or across the whole trend. Countries with identified issues include India (missing data) and South Africa (no data for 2018). For Italy, because of data gaps regarding information on granted patents, patent applications are used instead, which slightly overestimates Italy's output and creates a small shift in the year for which its output is accounted. The EU includes 28 member countries. China includes Hong Kong.

Source(s)

Science-Matrix; PATSTAT, accessed April 2019; PatentsView, USPTO, accessed June 2019.