

Table SINV-18

## International patent families granted in medical technology, by region, country, or economy: 1998–2020

(Number)

Region, country, or economy	Economy by income status	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
World	na	11,510	11,275	11,026	10,022	10,872	13,433	13,777	11,501	12,456	12,663	13,443	15,021	17,717	19,131	22,209	23,908	24,927	24,970	27,453	29,868	29,530	31,207	34,851
North America	na	4,247	3,973	3,904	3,634	3,459	4,197	3,384	2,528	2,811	2,671	2,624	3,038	4,399	4,626	5,414	5,902	5,944	5,739	5,630	5,869	5,524	6,647	6,669
Canada	High	114	96	101	133	129	153	101	79	90	86	89	83	127	120	139	174	169	187	172	215	212	258	239
Mexico	Upper middle	6	2	4	2	3	6	7	19	2	7	5	4	3	6	6	9	11	6	36	35	35	29	9
United States	High	4,128	3,876	3,798	3,500	3,327	4,039	3,277	2,430	2,719	2,578	2,530	2,951	4,268	4,499	5,269	5,719	5,764	5,546	5,422	5,619	5,278	6,360	6,421
Central America and Caribbean	na	6	8	5	1	3	3	3	2	2	3	5	5	3	6	3	9	7	4	1	1	4	3	8
Puerto Rico	High	2	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
South America	na	24	25	25	25	38	33	30	28	23	15	22	35	31	33	36	36	41	43	38	54	68	72	145
Argentina	Upper middle	14	13	11	9	11	10	7	5	4	3	6	7	4	3	5	5	7	5	4	7	7	8	8
Brazil	Upper middle	7	9	10	13	20	18	18	19	18	9	12	23	21	23	18	21	26	28	27	30	52	57	122
Europe	na	4,183	4,225	4,132	3,361	4,027	5,146	5,919	4,489	4,448	4,274	4,566	5,016	4,706	4,424	5,213	5,013	4,851	5,275	4,965	5,921	5,654	6,060	5,713
EU-27 + UK <sup>a</sup>	na	2,386	2,455	2,343	2,142	2,168	2,342	2,674	2,430	2,180	2,131	2,240	2,330	2,604	2,648	3,091	3,189	3,132	3,132	3,366	3,721	3,499	3,689	3,369
United Kingdom	High	238	196	202	200	217	284	310	273	247	186	223	209	206	231	233	261	256	281	287	264	238	320	312
EU-27 <sup>b</sup>	na	2,148	2,258	2,142	1,942	1,951	2,058	2,364	2,157	1,932	1,945	2,017	2,122	2,398	2,416	2,858	2,928	2,877	2,851	3,079	3,457	3,261	3,369	3,057
Austria	High	32	50	48	48	40	59	40	48	68	30	69	69	70	67	79	88	78	70	80	85	82	74	65
Belgium	High	26	16	23	19	18	25	27	22	27	23	32	32	30	28	29	48	43	69	95	77	73	69	73
Denmark	High	21	32	28	23	36	41	40	29	29	36	41	45	57	73	80	76	80	93	89	86	84	112	81
Finland	High	37	35	39	40	43	45	44	41	34	28	48	44	48	50	44	53	61	58	50	50	64	82	71
France	High	526	502	429	402	354	349	467	420	462	393	441	403	417	422	609	512	484	458	425	397	380	438	534
Germany	High	675	717	675	708	766	836	822	856	832	871	850	863	992	933	1,141	1,253	1,272	1,246	1,349	1,266	1,247	1,375	1,137
Hungary	High	8	4	13	20	9	14	13	14	8	12	7	6	15	11	12	13	11	18	11	13	11	25	14
Ireland	High	19	8	13	11	6	18	13	18	16	16	22	18	29	32	37	48	57	54	71	60	66	85	88
Italy	High	258	371	401	187	198	180	364	194	36	46	48	67	136	188	156	72	70	78	98	547	439	336	209
Netherlands	High	175	144	125	118	124	127	108	108	111	124	126	139	153	151	162	200	210	191	266	302	269	291	341
Spain	High	69	74	88	76	54	65	79	100	80	105	73	113	117	121	119	179	149	153	138	162	142	116	62
Sweden	High	193	181	165	191	215	184	231	185	132	122	140	174	189	182	203	195	182	150	146	178	152	139	173
Other Europe	na	1,798	1,771	1,789	1,220	1,859	2,804	3,246	2,059	2,269	2,143	2,326	2,686	2,102	1,777	2,123	1,824	1,719	2,143	1,599	2,200	2,155	2,370	2,344
Other Europe-2020 <sup>b</sup>	na	2,036	1,967	1,991	1,420	2,076	3,088	3,555	2,332	2,516	2,329	2,550	2,895	2,307	2,008	2,355	2,085	1,975	2,425	1,886	2,464	2,393	2,690	2,656

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Belarus	Upper middle	4	7	3	5	5	4	7	7	9	4	7	6	5	6	8	7	10	11	7	15	13	10	12
Moldova	Lower middle	28	47	36	27	39	30	28	41	55	41	40	95	36	15	17	23	30	29	27	19	12	26	17
Norway	High	16	17	20	22	35	20	31	25	27	14	11	19	29	17	15	21	19	23	17	20	14	23	19
Russia	Upper middle	1,591	1,574	1,580	1,024	1,593	2,272	1,846	1,709	1,950	1,799	1,964	2,263	1,698	1,435	1,748	1,406	1,320	1,583	1,152	1,782	1,761	1,965	2,003
Switzerland	High	99	90	109	99	106	130	139	129	152	156	178	185	199	177	209	228	213	283	225	224	216	259	227
Ukraine	Lower middle	52	30	34	36	71	342	1,187	145	67	114	104	108	116	115	114	117	117	184	134	99	105	41	14
Asia	na	2,683	2,686	2,558	2,487	2,737	3,243	3,614	4,003	4,743	5,311	5,830	6,561	8,204	9,682	11,133	12,476	13,607	13,477	16,386	17,540	17,811	17,783	21,656
China	Upper middle	99	78	192	198	153	313	460	413	537	607	929	1,425	1,645	2,119	3,030	3,445	3,989	5,696	6,696	7,628	8,349	8,127	11,212
India	Lower middle	3	3	4	5	1	5	12	6	10	9	12	13	16	17	29	33	42	40	47	66	64	81	154
Japan	High	2,377	2,275	2,128	1,973	1,996	2,282	2,452	2,586	2,660	3,059	3,533	3,930	5,020	5,310	5,352	5,990	6,246	4,580	5,674	5,640	5,378	5,237	5,285
Malaysia	Upper middle	0	0	2	1	5	7	7	2	2	5	3	5	7	19	26	20	28	30	17	17	29	6	7
Singapore	High	3	2	1	3	5	11	6	3	5	4	8	11	12	12	21	19	23	28	20	28	24	32	28
South Korea	High	113	221	127	197	419	463	489	758	1,240	1,336	1,189	999	1,302	1,983	2,344	2,520	2,800	2,609	3,201	3,301	3,341	3,651	4,368
Taiwan	High	80	102	99	100	145	149	181	226	281	275	148	166	195	214	317	438	459	477	710	834	603	621	585
Middle East	na	88	71	104	117	119	165	123	86	94	80	91	118	140	153	198	241	246	228	275	299	284	380	383
Israel	High	82	64	72	99	105	145	113	69	78	74	75	112	132	138	181	208	214	198	237	254	234	301	318
Africa	na	47	57	41	47	58	80	71	40	41	77	88	61	41	24	49	29	30	18	16	17	15	33	21
South Africa	Upper middle	39	49	21	30	36	53	51	34	35	58	73	53	34	13	38	11	18	12	9	12	8	18	7
Australia and Oceania	na	160	196	237	347	421	563	630	301	282	226	214	178	194	179	159	200	198	182	138	165	167	226	254
Australia	High	149	181	224	336	405	545	612	283	262	205	187	154	166	154	128	172	166	149	111	122	121	175	208
New Zealand	High	12	11	13	11	16	18	19	18	20	20	26	24	28	25	31	28	32	33	27	43	46	51	46
Unclassified	na	70	34	20	2	10	2	4	25	11	6	2	8	1	3	2	2	3	4	4	2	2	4	2

na = not applicable, metric not calculated at this level.

EU = European Union; UK = United Kingdom.

<sup>a</sup> The United Kingdom was a part of the EU for data purposes from 1973 to 2019.

<sup>b</sup> Beginning in 2020, the United Kingdom was no longer a member of the EU.

**Note(s):**

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. (2013) is used to fill missing information on priority patents using information in successive filings within the families. Priority patents not indexed in PATSTAT are replaced by the next utility patent(s) in the families according to filing dates. Patent families 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. China includes Hong Kong. Data were extracted in June 2021. 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 year for which its output is accounted. As patent authorities become more involved with the European Patent Organisation, these gaps should disappear in the future, strengthening the robustness of statistics for these countries.

**Source(s):**

National Center for Science and Engineering Statistics; Science-Metrix; PATSTAT, accessed October 2021.

*Science and Engineering Indicators*