

# Factsheet: Life, Antibodies

A technology field created by ip-search

## 1 Definition

Antibodies are widely used molecules in life sciences, and the present technology field definition aims to include all aspects. For the present technology field, antibodies defined as immunoglobulins, in the form of both polyclonal and monoclonal preparations. In addition, antibody fragments as well as complex molecules comprising elements of antibodies, for example immune-conjugates, chimeric antigen receptors, or Fc fusion proteins are included.

A number of CPC/IPC classifications directly linked to antibodies by their definition retrieve most but not all antibody-related patents.

Additional patent classifications not exclusively defined for antibodies were included in combination with a keyword filter in order to expand the present technology field.

## 2 CPC / IPC

### Specific antibody classifications

A61K39/395, A61K47/68, A61K51/10, C07K16, C12N15/13, G01N33/563, G01N33/577, A61K2039/505, C07K2316; C07K2317, C07K2318, C07K2319/30, C12N9/0002, G01N33/6854

### Classification used in combination with keyword concept antibodies

A61K35/17, G01N33/53, G16B, C40B, A61K40

### 2.1.1 Cooperative Patent Classification (CPC), International Patent Classification (IPC), and Japanese File Index (FI)

CPC/IPC/FI Symbols	Description
A	HUMAN NECESSITIES
A61	MEDICAL OR VETERINARY SCIENCE; HYGIENE
A61K	PREPARATIONS FOR MEDICAL, DENTAL OR TOILETRY PURPOSES (devices or methods specially adapted for bringing pharmaceutical products into particular physical or administering forms A61J3/00; chemical aspects of, or use of materials for deodorisation of air, for disinfection or sterilisation, or for bandages, dressings, absorbent pads or surgical articles A61L; soap compositions C11D)
A61K35/00	Medicinal preparations containing materials or reaction products thereof with undetermined constitution
A61K35/12	. Materials from mammals; Compositions comprising non-specified tissues or cells; Compositions comprising non-embryonic stem cells; Genetically modified cells (vaccines or medicinal preparations containing antigens or antibodies A61K39/00)
A61K35/14	.. Blood; Artificial blood (perfluorocarbons A61K31/02; umbilical cord blood A61K35/51; haemoglobin A61K38/42)
<b><u>A61K35/17</u></b>	... Lymphocytes; B-cells; T-cells; Natural killer cells; Interferon-activated or cytokine-activated lymphocytes (when activated by a specific antigen A61K39/00)
A61K39/00	Medicinal preparations containing antigens or antibodies (materials for immunoassay G01N33/53)
<b><u>A61K39/395</u></b>	. Antibodies (agglutinins A61K38/36 {; as drug carriers A61K47/50}); Immunoglobulins; Immune serum, e.g. antilymphocytic serum
<b><u>A61K2039/505</u></b>	. {comprising antibodies}
<b><u>A61K40</u></b>	Cellular immunotherapy (medicinal preparations containing antigens or antibodies A61K39/00)
A61K47/00	Medicinal preparations characterised by the non-active ingredients used, e.g. carriers or inert additives; Targeting or modifying agents chemically bound to the active ingredient

CPC/IPC/FI Symbols	Description
A61K47/50	. the non-active ingredient being chemically bound to the active ingredient, e.g. polymer-drug conjugates
A61K47/51	.. the non-active ingredient being a modifying agent
<b><u>A61K47/68</u></b>	... the modifying agent being an antibody, an immunoglobulin or a fragment thereof, e.g. an Fc-fragment
A61K51/00	Preparations containing radioactive substances for use in therapy or testing in vivo
A61K51/02	. characterised by the carrier {, i.e. characterised by the agent or material covalently linked or complexing the radioactive nucleus}
A61K51/04	.. Organic compounds
A61K51/08	... Peptides, e.g. proteins {, carriers being peptides, polyamino acids, proteins}
<b><u>A61K51/10</u></b>	.... Antibodies or immunoglobulins; Fragments thereof {, the carrier being an antibody, an immunoglobulin or a fragment thereof, e.g. a camelised human single domain antibody or the Fc fragment of an antibody}
C	CHEMISTRY; METALLURGY
C07	ORGANIC CHEMISTRY
C07K	PEPTIDES (peptides in foodstuffs A23; obtaining protein compositions for foodstuffs, working-up proteins for foodstuffs A23J; preparations for medicinal purposes A61K; peptides containing beta-lactam rings C07D; cyclic dipeptides not having in their molecule any other peptide link than those which form their ring, e.g. piperazine-2,5-diones, C07D; ergot alkaloids of the cyclic peptide type C07D519/02; macromolecular compounds having statistically distributed amino acid units in their molecules, i.e. when the preparation does not provide for a specific; but for a random sequence of the amino acid units, homopolyamides and block copolyamides derived from amino acids C08G69/00; macromolecular products derived from proteins C08H1/00; preparation of glue or gelatine C09H; single cell proteins, enzymes C12N; genetic engineering processes for obtaining peptides C12N15/00; compositions for measuring or testing processes involving enzymes C12Q; investigation or analysis of biological material G01N33/00)
<b><u>C07K16/00</u></b>	Immunoglobulins [IGs], e.g. monoclonal or polyclonal antibodies {(antibodies with enzymatic activity, e.g. abzymes C12N9/0002)}
<b><u>C07K2317/00</u></b>	Immunoglobulins specific features
<b><u>C07K2318/00</u></b>	Antibody mimetics or scaffolds
C07K2319/00	Fusion polypeptide
<b><u>C07K2319/30</u></b>	. Non-immunoglobulin-derived peptide or protein having an immunoglobulin constant or Fc region, or a fragment thereof, attached thereto
C12	BIOCHEMISTRY; BEER; SPIRITS; WINE; VINEGAR; MICROBIOLOGY; ENZYMOLOGY; MUTATION OR GENETIC ENGINEERING
C12N	MICROORGANISMS OR ENZYMES; COMPOSITIONS THEREOF; PROPAGATING, PRESERVING, OR MAINTAINING MICROORGANISMS; MUTATION OR GENETIC ENGINEERING; CULTURE MEDIA (microbiological testing media C12Q1/00)
C12N9/00	Enzymes; Proenzymes; Compositions thereof (preparations containing enzymes for cleaning teeth A61K8/66, A61Q11/00; medicinal preparations containing enzymes or proenzymes A61K38/43; enzyme containing detergent compositions C11D; {enzymes with nucleic acid structure, e.g. ribozymes, C12N15/113}); Processes for preparing, activating, inhibiting, separating or purifying enzymes (preparation of malt C12C1/00)
<b><u>C12N9/0002</u></b>	. {Antibodies with enzymatic activity, e.g. abzymes}
G	PHYSICS
G01	MEASURING; TESTING
G01N	INVESTIGATING OR ANALYSING MATERIALS BY DETERMINING THEIR CHEMICAL OR PHYSICAL PROPERTIES (measuring or testing processes other than immunoassay, involving enzymes or microorganisms C12M, C12Q)
G01N33/00	Investigating or analysing materials by specific methods not covered by groups G01N1/00 - G01N31/00
G01N33/48	. Biological material, e.g. blood, urine (G01N33/02, G01N33/26, G01N33/44, G01N33/46 take precedence); Haemocytometers (counting blood corpuscles distributed over a surface by scanning the surface G06M11/02)
G01N33/50	.. Chemical analysis of biological material, e.g. blood, urine; Testing involving biospecific ligand binding methods; Immunological testing (measuring or testing processes involving enzymes or microorganisms, compositions or test papers therefor; processes for forming such compositions, condition responsive control in microbiological or enzymological processes C12Q)
<b><u>G01N33/53</u></b>	... Immunoassay; Biospecific binding assay; Materials therefor
<b><u>G01N33/563</u></b>	.... involving antibody fragments

CPC/IPC/FI Symbols	Description
<b><u>G01N33/577</u></b>	.... involving monoclonal antibodies {binding reaction mechanisms characterised by the use of monoclonal antibodies; monoclonal antibodies per se are classified with their corresponding antigens; (G01N33/53 - G01N33/576 take precedence)}
G01N33/68	... involving proteins, peptides or amino acids {(involving lipoproteins G01N33/92)}
<b><u>G01N33/6854</u></b>	.... {Immunoglobulins}
<b><u>C40B</u></b>	COMBINATORIAL CHEMISTRY; LIBRARIES, e.g. CHEMICAL LIBRARIES (in silico combinatorial libraries of nucleic acids, proteins or peptides G16B35/00; in silico combinatorial chemistry G16C20/60)
<b><u>G16B</u></b>	BIOINFORMATICS, i.e. INFORMATION AND COMMUNICATION TECHNOLOGY [ICT] SPECIALLY ADAPTED FOR GENETIC OR PROTEIN-RELATED DATA PROCESSING IN COMPUTATIONAL MOLECULAR BIOLOGY

The complete description of the CPC classes with IPC- and FI-concordances can be found in the Internet at <https://www.wipo.int/classifications/ipc/ipcpub/?notion=scheme&fipcpc=yes>.

## 2.1.2 International Patent Classification (IPC)

IPC Symbols	Description
C	CHEMISTRY; METALLURGY
C12	BIOCHEMISTRY; BEER; SPIRITS; WINE; VINEGAR; MICROBIOLOGY; ENZYMOLOGY; MUTATION OR GENETIC ENGINEERING
C12N	MICROORGANISMS OR ENZYMES; COMPOSITIONS THEREOF; PROPAGATING, PRESERVING, OR MAINTAINING MICROORGANISMS; MUTATION OR GENETIC ENGINEERING; CULTURE MEDIA (microbiological testing media C12Q1/00) [3]
C12N15/00	Mutation or genetic engineering; DNA or RNA concerning genetic engineering, vectors, e.g. plasmids, or their isolation, preparation or purification; Use of hosts therefor (mutants or genetically engineered microorganisms C12N1/00, C12N5/00, C12N7/00; new plants A01H; plant reproduction by tissue culture techniques A01H4/00; new animals A01K67/00; use of medicinal preparations containing genetic material which is inserted into cells of the living body to treat genetic diseases, gene therapy A61K48/00; peptides in general C07K) [3,5,6,2006.01]
C12N15/09	.Recombinant DNA-technology [5,2006.01]
C12N15/11	..DNA or RNA fragments; Modified forms thereof (DNA or RNA not used in recombinant technology C07H21/00) [5,2006.01]
C12N15/12	...Genes encoding animal proteins [5,2006.01]
<b><u>C12N15/13</u></b>	....Immunoglobulins [5,2006.01]
<b><u>C40B</u></b>	COMBINATORIAL CHEMISTRY; LIBRARIES, e.g. CHEMICAL LIBRARIES (in silico combinatorial libraries of nucleic acids, proteins or peptides G16B35/00; in silico combinatorial chemistry G16C20/60) [2006.01]
G	PHYSICS
<b><u>G16B</u></b>	BIOINFORMATICS, i.e. INFORMATION AND COMMUNICATION TECHNOLOGY [ICT] SPECIALLY ADAPTED FOR GENETIC OR PROTEIN-RELATED DATA PROCESSING IN COMPUTATIONAL MOLECULAR BIOLOGY [2019.01]

The complete description of the IPC classes can be found in the Internet at <https://www.wipo.int/classifications/ipc/ipcpub>.

## 2.1.3

# 3 Keywords

### Keyword concept for antibody:

Antibody, immunoglobulin, immune globulin, immunoglobulin, monoclonal, antibody fragments (antibod\* OR immunoglobulin\* OR (immun\* W globulin\*) OR immunoglobulin\* OR monoclonal\* OR darpin? OR nanobod\* OR diabod\* OR scfv OR immune\*adhes\* OR (immun\* W adhes\*) OR (complement\* W determin\* W region\*) OR (constant W (domain? OR region?)) OR (variab\* W (domain? OR region?)) OR Fc?fragment? OR FC OR CDR OR CDRs OR (heavy W chain?) OR (light W chain?)) OR mab OR mabs OR moab OR moabs OR IgG

Used in combination with IPC/CPC classifications A61K35/17, G01N33/53, G16B, or C40B

## 4 Confidence Interval for Precision

Precision is expressed in percent of relevant counts. The 95 % confidence interval for the precision of a technology field is assessed on a set of 99 randomly selected patent families based on a binomial distribution. In the sighting 94 of 100 randomly selected documents of the tag Life\_Antibodies\_03\_25 appeared relevant:

Precision Confidence Interval: 89-98 %

## 5 History

Version	latest update	No. of patent families (incl. inactives)	remarks
12_19	28.11.2019	147'518 68'025 active	New technology field
03_20	09.03.2020	150'021 69'427 active	Update, no change in query
09_20	17.08.2020	149'959 65'036 active	Review and update
03_21	09.03.2021	157'951 69'270 active	Update, no change in query
09_21	17.08.2021	166'399 71'494 active	Update, no change in query
03_22	03.03.2022	169'019 74'650 active	Review and update
09_22	13.09.2022	176'280 79'758 active	Review and update
03_23	28.03.2023	182'565 81'901	Review and update, determine precision
09_23	22.09.2023	189'208 85'835 active	Update, no change in query
03_24	28.03.2024	199'441 91'392 active	Classifications added: C40B, G16B for combination with keyword concept antibody
09_24	16.09.2024	210'094 96'165	Refresh without changes of query
03_25	25.03.2025	218463 100422 active	Classification A61K40 added for combination with keyword concept antibody

Table 1: History

## 6 Contact

For specific information regarding the technology field please contact [info@ip-search.swiss](mailto:info@ip-search.swiss)

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