

# CPC COOPERATIVE PATENT CLASSIFICATION

## C CHEMISTRY; METALLURGY

(NOTES omitted)

### CHEMISTRY

#### C07 ORGANIC CHEMISTRY

(NOTES omitted)

**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 [C07D 519/02](#); 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 [C08G 69/00](#); macromolecular products derived from proteins [C08H 1/00](#); preparation of glue or gelatine [C09H](#); single cell proteins, enzymes [C12N](#); genetic engineering processes for obtaining peptides [C12N 15/00](#); compositions for measuring or testing processes involving enzymes [C12Q](#); investigation or analysis of biological material [G01N 33/00](#))

#### NOTES

- In this subclass, the following terms or expressions are used with the meanings indicated:
  - "amino acids" are compounds in which at least one amino group and at least one carboxyl group are bound to the same carbon skeleton and the nitrogen atom of the amino group may form part of a ring;
  - "normal peptide link" is one between an alpha-amino group of an amino acid and the carboxyl group - in position 1 - of another alpha-amino acid;
  - "abnormal peptide link" is a link where at least one of the linked amino acids is not an alpha-amino acid or a link formed by at least one carboxyl or amino group being part of the side chain of a alpha-amino acid;
  - "peptides" are compounds containing at least two amino acid units, which are bound through at least one normal peptide link, including oligopeptides, polypeptides and proteins, where:
    - "linear peptides" may comprise rings formed through S-S bridges, or through a hydroxy or a mercapto group of an hydroxy- or mercapto-amino acid and the carboxyl group of another amino acid, (e.g. peptide lactones) but do not comprise rings which are formed only through peptide links;
    - "cyclic peptides" are peptides comprising at least one ring formed only through peptide links; the cyclisation may occur only through normal peptide links or through abnormal peptide links, e.g. through the 4-amino group of 2,4-diaminobutanoic acid. Thus, cyclic compounds in which at least one link in the ring is a non-peptide link are considered as "linear peptides";
    - "depsipeptides" are compounds containing a sequence of at least two alpha-amino acids and at least one alpha-hydroxy carboxylic acid, which are bound through at least one normal peptide link and ester links, derived from the hydroxy carboxylic acids, where:
      - "linear depsipeptides" may comprise rings formed through S-S bridges, or through an hydroxy or a mercapto group of an hydroxy- or mercapto-amino acid and the carboxyl group of another amino- of hydroxy-acid but do not comprise rings formed only through peptide or ester links derived from hydroxy carboxylic acids, e.g. Gly-Ala-Gly-OCH<sub>2</sub>CO<sub>2</sub>H and Gly-OCH<sub>2</sub>CO-Ala-Gly are considered as "linear depsipeptides", but HOCH<sub>2</sub>CO-Gly-Ala-Gly does not contain an ester link, and is thus a derivative of Gly-Ala-Gly which is covered by [C07K 5/08](#);
      - "cyclic depsipeptides" are peptides containing at least one ring formed only through peptide or ester links - derived from hydroxy carboxylic acids -, e.g. Gly-Ala-Gly-OCH<sub>2</sub>CO.
- Fragments of peptides or peptides modified by removal or addition of amino acids, by substitution of amino acids by others, or by combination of these modifications, are classified as the parent peptides. However, fragments of peptides having only four or less amino acids are also classified in group [C07K 5/00](#).
- Peptides prepared by chemical processes and having an amino acid sequence derived from naturally occurring peptides are classified with the natural one.
- Peptides prepared by recombinant DNA technology are not classified according to the host, but according to the original peptide expressed, e.g. HIV peptide expressed in E. coli is classified with HIV peptides.
- When classifying in this subclass, classification is also made in group [B01D 15/08](#) insofar as subject matter of general interest relating to chromatography is concerned.

**WARNINGS**

- The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:
 

C07K 5/023	covered by	<a href="#">C07K 5/0202</a>
C07K 5/027	covered by	<a href="#">C07K 5/0205</a>
C07K 5/03	covered by	<a href="#">C07K 5/0207</a>
C07K 5/033	covered by	<a href="#">C07K 5/021</a>
C07K 5/037	covered by	<a href="#">C07K 5/0215</a>
C07K 5/062	covered by	<a href="#">C07K 5/06017</a>
C07K 5/065	covered by	<a href="#">C07K 5/06078</a>
C07K 5/068	covered by	<a href="#">C07K 5/06086</a>
C07K 5/072	covered by	<a href="#">C07K 5/06104</a>
C07K 5/075	covered by	<a href="#">C07K 5/0613</a>
C07K 5/078	covered by	<a href="#">C07K 5/06139</a>
C07K 5/083	covered by	<a href="#">C07K 5/0804</a>
C07K 5/087	covered by	<a href="#">C07K 5/0812</a>
C07K 5/09	covered by	<a href="#">C07K 5/0815</a>
C07K 5/093	covered by	<a href="#">C07K 5/0819</a>
C07K 5/097	covered by	<a href="#">C07K 5/0821</a>
C07K 5/103	covered by	<a href="#">C07K 5/1005</a>
C07K 5/107	covered by	<a href="#">C07K 5/1016</a>
C07K 5/11	covered by	<a href="#">C07K 5/1019</a>
C07K 5/113	covered by	<a href="#">C07K 5/1021</a>
C07K 5/117	covered by	<a href="#">C07K 5/1024</a>
C07K 14/185	covered by	<a href="#">C07K 14/1816</a>
C07K 14/725	covered by	<a href="#">C07K 14/705</a>
C07K 14/73	covered by	<a href="#">C07K 14/70514</a>
C07K 14/735	covered by	<a href="#">C07K 14/70535</a>
C07K 14/74	covered by	<a href="#">C07K 14/70539</a>
- In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

<b>1/00</b>	<b>General methods for the preparation of peptides {, i.e. processes for the organic chemical preparation of peptides or proteins of any length}</b>	1/082	. . . {containing phosphorus}
		1/084	. . . {containing nitrogen}
1/003	. {by transforming the C-terminal amino acid to amides}	1/086	. . . {containing sulfur}
1/006	. {of peptides containing derivatised side chain amino acids}	1/088	. . . {containing other elements, e.g. B, Si, As}
1/02	. in solution {( <a href="#">C07K 1/003</a> , <a href="#">C07K 1/006</a> take precedence)}	1/10	. using coupling agents {( <a href="#">C07K 1/006</a> takes precedence)}
1/023	. . {using racemisation inhibiting agents}	1/107	. by chemical modification of precursor peptides
1/026	. . {by fragment condensation in solution}	1/1072	. . {by covalent attachment of residues or functional groups}
1/04	. on carriers {( <a href="#">C07K 1/003</a> , <a href="#">C07K 1/006</a> take precedence)}	1/1075	. . . {by covalent attachment of amino acids or peptide residues}
1/042	. . {characterised by the nature of the carrier}	1/1077	. . . {by covalent attachment of residues other than amino acids or peptide residues, e.g. sugars, polyols, fatty acids}
1/045	. . {using devices to improve synthesis, e.g. reactors, special vessels}	1/113	. . without change of the primary structure
1/047	. . {Simultaneous synthesis of different peptide species; Peptide libraries}	1/1133	. . . {by redox-reactions involving cystein/cystin side chains}
1/06	. using protecting groups or activating agents {( <a href="#">C07K 1/003</a> , <a href="#">C07K 1/006</a> take precedence)}	1/1136	. . . {by reversible modification of the secondary, tertiary or quarternary structure, e.g. using denaturing or stabilising agents}
1/061	. . {using protecting groups}	1/12	. by hydrolysis {, i.e. solvolysis in general}
1/062	. . . {for alpha- or omega-carboxy functions}	1/122	. . {Hydrolysis with acids different from HF}
1/063	. . . {for alpha-amino functions}	1/124	. . {Hydrazinolysis}
1/064	. . . {for omega-amino or -guanidino functions}	1/126	. . {Aminolysis}
1/065	. . . {for hydroxy functions, not being part of carboxy functions}	1/128	. . {sequencing}
1/066	. . . {for omega-amido functions}	1/13	. Labelling of peptides
1/067	. . . {for sulfur-containing functions}	1/14	. Extraction; Separation; Purification
1/068	. . . {for heterocyclic side chains}	1/145	. . {by extraction or solubilisation}
1/08	. . using activating agents {( <a href="#">C07K 1/003</a> , <a href="#">C07K 1/006</a> take precedence)}	1/16	. . by chromatography
		1/165	. . . {mixed-mode chromatography}
		1/18	. . . Ion-exchange chromatography

- 1/20 . . . Partition-, reverse-phase or hydrophobic interaction chromatography
- 1/22 . . . Affinity chromatography or related techniques based upon selective absorption processes
- 1/24 . . by electrochemical means
- 1/26 . . . Electrophoresis
- 1/28 . . . . Isoelectric focusing
- 1/285 . . . . . {multi dimensional electrophoresis}
- 1/30 . . by precipitation
- 1/303 . . . {by salting out}
- 1/306 . . . {by crystallization}

**NOTE**

Large single crystals of proteins from solutions are classified in [C30B 7/00](#) for the method and in [C30B 29/58](#) for the crystal

- 1/32 . . . as complexes
- 1/34 . . by filtration, ultrafiltration or reverse osmosis
- 1/36 . . by a combination of two or more processes of different types

**2/00 Peptides of undefined number of amino acids; Derivatives thereof**

**4/00 Peptides having up to 20 amino acids in an undefined or only partially defined sequence; Derivatives thereof**

- 4/02 . from viruses
- 4/04 . from bacteria
- 4/06 . from fungi
- 4/08 . from algae; from lichens
- 4/10 . from plants
- 4/12 . from animals; from humans

**NOTE**

If no indication to the contrary is given, all amino acids are considered to be in the natural L-form

**5/00 Peptides containing up to four amino acids in a fully defined sequence; Derivatives thereof**

- 5/02 . containing at least one abnormal peptide link
- 5/0202 . . {containing the structure -NH-X-X-C(=O)-, X being an optionally substituted carbon atom or a heteroatom, e.g. beta-amino acids}
- 5/0205 . . {containing the structure -NH-(X)3-C(=O)-, e.g. statine or derivatives thereof}
- 5/0207 . . {containing the structure -NH-(X)4-C(=O)-, e.g. 'isosters', replacing two amino acids}
- 5/021 . . {containing the structure -NH-(X)n-C(=O)-, n being 5 or 6; for n > 6, classification in [C07K 5/06](#) - [C07K 5/10](#), according to the moiety having normal peptide bonds}
- 5/0212 . . {containing the structure -N-C-N-C(=O)-, e.g. retro-inverso peptides}
- 5/0215 . . {containing natural amino acids, forming a peptide bond via their side chain functional group, e.g. epsilon-Lys, gamma-Glu}
- 5/0217 . . {containing the structure -C(=O)-C-N-C(=O)-N-C-C(=O)-}
- 5/022 . . {containing the structure -X-C(=O)-(C)n-N-C-C(=O)-Y-; X and Y being heteroatoms; n being 1 or 2}
- 5/0222 . . . {with the first amino acid being heterocyclic, e.g. Pro, Trp}

- 5/0225 . . {containing the structure -N-C-C(=O)-N-C(=O)-C-N-}
- 5/0227 . . {containing the (partial) peptide sequence -Phe-His-NH-(X)2-C(=O)-, e.g. Renin-inhibitors with n = 2 - 6; for n > 6 see [C07K 5/06](#) - [C07K 5/10](#)}
- 5/04 . containing only normal peptide links

**NOTE**

In groups [C07K 5/06](#) - [C07K 5/10](#) the following terms or expressions are used with the meaning indicated:

neutral: amino acids having in the sidechain the same number of amino groups and carboxylic acid groups or derivatives thereof, e.g. Gly;  
 basic: amino acids having in the sidechain more amino groups than carboxylic acid groups or derivatives thereof, e.g. Arg;  
 acidic: amino acids having in the sidechain more carboxylic acid groups or derivatives thereof than amino groups, e.g. Asp;  
 aliphatic: amino acids having only acyclic carbon atoms in the sidechain, e.g. Ala  
 aromatic;  
 cycloaliphatic: amino acids having a carbocyclic ring in the sidechain, e.g. Phe  
 heterocyclic: amino acids wherein the sidechain contains or is part of a heteroring, e.g. Pro;  
 side chain: the R radical in the optionally functionalised amino acid R-CH(NH<sub>2</sub>)CO<sub>2</sub>H)

- 5/06 . . Dipeptides
- 5/06008 . . . {with the first amino acid being neutral}
- 5/06017 . . . . {and aliphatic}
- 5/06026 . . . . . {the side chain containing 0 or 1 carbon atom, i.e. Gly or Ala}
- 5/06034 . . . . . {the side chain containing 2 to 4 carbon atoms}
- 5/06043 . . . . . {Leu-amino acid}
- 5/06052 . . . . . {Val-amino acid}
- 5/0606 . . . . . {the side chain containing heteroatoms not provided for by [C07K 5/06086](#) - [C07K 5/06139](#), e.g. Ser, Met, Cys, Thr}
- 5/06069 . . . . . {Ser-amino acid}
- 5/06078 . . . . . {and aromatic or cycloaliphatic}
- 5/06086 . . . {with the first amino acid being basic}
- 5/06095 . . . . {Arg-amino acid}
- 5/06104 . . . {with the first amino acid being acidic}
- 5/06113 . . . . {Asp- or Asn-amino acid}
- 5/06121 . . . . . {the second amino acid being aromatic or cycloaliphatic}
- 5/0613 . . . . . {Aspartame}
- 5/06139 . . . {with the first amino acid being heterocyclic}

- 5/06147 . . . . {and His-amino acid; Derivatives thereof}
- 5/06156 . . . . {and Trp-amino acid; Derivatives thereof}
- 5/06165 . . . . {and Pro-amino acid; Derivatives thereof}
- 5/06173 . . . . {and Glp-amino acid; Derivatives thereof}
- 5/06182 . . . . {and Pristinamycin II; Derivatives thereof}
- 5/06191 . . . {containing heteroatoms different from O, S, or N}
- 5/08 . . Tripeptides
- 5/0802 . . . {with the first amino acid being neutral}
- 5/0804 . . . . {and aliphatic}
- 5/0806 . . . . . {the side chain containing 0 or 1 carbon atoms, i.e. Gly, Ala}
- 5/0808 . . . . . {the side chain containing 2 to 4 carbon atoms, e.g. Val, Ile, Leu}
- 5/081 . . . . . {the side chain containing O or S as heteroatoms, e.g. Cys, Ser}
- 5/0812 . . . . {and aromatic or cycloaliphatic}
- 5/0815 . . . {with the first amino acid being basic}
- 5/0817 . . . . {the first amino acid being Arg}
- 5/0819 . . . {with the first amino acid being acidic}
- 5/0821 . . . {with the first amino acid being heterocyclic, e.g. His, Pro, Trp}
- 5/0823 . . . . {and Pro-amino acid; Derivatives thereof}
- 5/0825 . . . . {and Glp-amino acid; Derivatives thereof}
- 5/0827 . . . {containing heteroatoms different from O, S, or N}
- 5/10 . . Tetrapeptides
- 5/1002 . . . {with the first amino acid being neutral}
- 5/1005 . . . . {and aliphatic}
- 5/1008 . . . . . {the side chain containing 0 or 1 carbon atoms, i.e. Gly, Ala}
- 5/101 . . . . . {the side chain containing 2 to 4 carbon atoms, e.g. Val, Ile, Leu}
- 5/1013 . . . . . {the side chain containing O or S as heteroatoms, e.g. Cys, Ser}
- 5/1016 . . . . {and aromatic or cycloaliphatic}
- 5/1019 . . . {with the first amino acid being basic}
- 5/1021 . . . {with the first amino acid being acidic}
- 5/1024 . . . {with the first amino acid being heterocyclic}
- 5/1027 . . . {containing heteroatoms different from O, S, or N}
- 5/12 . . Cyclic peptides {with only normal peptide bonds in the ring}

**NOTE**

Cyclic peptides containing at least one abnormal peptide link are classified as linear peptides

- 5/123 . . . {Tripeptides}
- 5/126 . . . {Tetrapeptides}

**7/00 Peptides having 5 to 20 amino acids in a fully defined sequence; Derivatives thereof**

**NOTE**

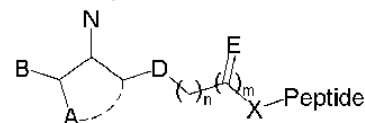
In this subgroup cyclic compounds related to specific compounds which are classified in a specific group, e.g. [C07K 7/062](#), are classified in this specific group only

- 7/02 . Linear peptides containing at least one abnormal peptide link
- 7/04 . Linear peptides containing only normal peptide links

- 7/06 . . having 5 to 11 amino acids
- 7/062 . . . {Serum thymic factor}
- 7/065 . . . {Thymic humoral factor}
- 7/067 . . . {Hemoregulatory peptides based on sequence Glp-Glu-Asp-Cys-Lys}
- 7/08 . . having 12 to 20 amino acids ([gastrins C07K 14/595](#); [somatostatins C07K 14/655](#); [melanotropins C07K 14/68](#))
- 7/083 . . . {Neurotensin}
- 7/086 . . . {Bombesin; Related peptides (having more than 20 amino acids [C07K 14/57572](#))}
- 7/14 . . Angiotensins; Related peptides
- 7/16 . . Oxytocins; Vasopressins; Related peptides
- 7/18 . . Kallidins; Bradykinins; Related peptides
- 7/22 . . {Tachykinins, e.g.} Eledoisins {, Substance P}; Related peptides
- 7/23 . . Luteinising hormone-releasing hormone [LHRH]; Related peptides
- 7/28 . . Gramicidins A, B, D; Related peptides
- 7/50 . Cyclic peptides containing at least one abnormal peptide link
- 7/52 . . with only normal peptide links in the ring
- 7/54 . . with at least one abnormal peptide link in the ring
- 7/56 . . . the cyclisation not occurring through 2,4-diamino-butanoic acid
- 7/58 . . . . Bacitracins; Related peptides
- 7/60 . . . the cyclisation occurring through the 4-amino group of 2,4-diamino-butanoic acid
- 7/62 . . . . Polymyxins; Related peptides
- 7/64 . Cyclic peptides containing only normal peptide links
- 7/645 . . {Cyclosporins; Related peptides}
- 7/66 . . Gramicidins S, C; Tyrocidins A, B, C; Related peptides

**9/00 Peptides having up to 20 amino acids, containing saccharide radicals and having a fully defined sequence; Derivatives thereof**

- 9/001 . {the peptide sequence having less than 12 amino acids and not being part of a ring structure}
- 9/003 . . {Peptides being substituted by heterocyclic radicals, e.g. bleomycin, phleomycin}
- 9/005 . . {containing within the molecule the substructure with m, n >



0 and m+n > 0, A, B, D, E being heteroatoms; X being a bond or a chain, e.g. muramylpeptides}

- 9/006 . {the peptide sequence being part of a ring structure}
- 9/008 . . {directly attached to a hetero atom of the saccharide radical, e.g. actaplanin, avoparcin, ristomycin, vancomycin}

**11/00 Depsipeptides having up to 20 amino acids in a fully defined sequence; Derivatives thereof**

- 11/02 . cyclic, e.g. valinomycins {; Derivatives thereof}

**14/00 Peptides having more than 20 amino acids; Gastrins; Somatostatins; Melanotropins; Derivatives thereof**

- 14/001 . {by chemical synthesis}
- 14/003 . . {Peptide-nucleic acids (PNAs)}

14/005 . from viruses

#### **NOTE**

When classifying in this group, subject-matter related to viral proteins shall be classified by the symbol [C07K 14/005](#) together with (a number of) appropriate indexing codes out of [C12N 2710/00-C12N 2795/00](#)

#### **WARNING**

1. From March 15, 2012 groups [C07K 14/01](#) - [C07K 14/19](#) and subgroups thereof are no longer used for the classification of new documents. 2. Reclassification of the back-file follows the principle outlined in the Note here above

14/01 . . DNA viruses  
 14/015 . . . Parvoviridae, e.g. feline panleukopenia virus, human parvovirus  
 14/02 . . . Hepadnaviridae, e.g. hepatitis B virus  
 14/025 . . . Papovaviridae, e.g. papillomavirus, polyomavirus, SV40, BK virus, JC virus  
 14/03 . . . Herpetoviridae, e.g. pseudorabies virus  
 14/032 . . . . {Pseudorabies virus, i.e. Anjertzky virus}  
 14/035 . . . . Herpes simplex virus I or II  
 14/04 . . . . Varicella-zoster virus  
 14/045 . . . . Cytomegalovirus  
 14/05 . . . . Epstein-Barr virus  
 14/055 . . . . Marek's disease virus  
 14/06 . . . . Infectious bovine rhinotracheitis virus  
 14/065 . . . . Poxviridae, e.g. avipoxvirus  
 14/07 . . . . Vaccinia virus; Variola virus  
 14/075 . . . Adenoviridae  
 14/08 . . RNA viruses  
 14/082 . . . {Arteriviridae, e.g. EAV, PRRSV}  
 14/085 . . . Picornaviridae, e.g. coxsackie virus, echovirus, enterovirus  
 14/09 . . . . Foot-and-mouth disease virus  
 14/095 . . . . Rhinovirus  
 14/10 . . . . Hepatitis A virus  
 14/105 . . . . Poliovirus  
 14/11 . . . Orthomyxoviridae, e.g. influenza virus  
 14/115 . . . Paramyxoviridae, e.g. parainfluenza virus  
 14/12 . . . . Mumps virus; Measles virus  
 14/125 . . . . Newcastle disease virus  
 14/13 . . . . Canine distemper virus  
 14/135 . . . . Respiratory syncytial virus  
 14/14 . . . Reoviridae, e.g. rotavirus, bluetongue virus, Colorado tick fever virus  
 14/145 . . . Rhabdoviridae, e.g. rabies virus, Duvenhage virus, Mokola virus or vesicular stomatitis virus  
 14/15 . . . Retroviridae, e.g. bovine leukaemia virus, feline leukaemia virus human T-cell leukaemia-lymphoma virus  
 14/155 . . . . Lentiviridae, e.g. human immunodeficiency virus [HIV], visna-maedi virus or equine infectious anaemia virus  
 14/16 . . . . . HIV-1 {; HIV-2}  
 14/161 . . . . . {gag-pol, e.g. p55, p24/25, p17/18, p7, p6, p66/68, p51/52, p31/34, p32, p40}  
 14/162 . . . . . {env, e.g. gp160, gp110/120, gp41, V3, peptid T, CD4-Binding site}

14/163 . . . . . {Regulatory proteins, e.g. tat, nef, rev, vif, vpu, vpr, vpt, vpx}  
 14/165 . . . Coronaviridae, e.g. avian infectious bronchitis virus  
 14/17 . . . . Porcine transmissible gastroenteritis virus  
 14/175 . . . Bunyaviridae, e.g. California encephalitis virus, Rift valley fever virus, Hantaan virus  
 14/18 . . . Togaviridae; {Flaviviridae}  
 14/1808 . . . . {Alphaviruses or Group A arboviruses, e.g. sindbis, VEE, EEE, WEE, semliki forest virus (rubella virus [C07K 14/19](#))}  
 14/1816 . . . . {Flaviviridae, e.g. pestivirus, mucosal disease virus, bovine viral diarrhoea virus, classical swine fever virus (hog cholera virus), border disease virus}  
 14/1825 . . . . . {Flaviviruses or Group B arboviruses, e.g. yellow fever virus, japanese encephalitis, tick-borne encephalitis, dengue}  
 14/1833 . . . . . {Hepatitis C; Hepatitis NANB}  
 14/1841 . . . . . {Hepatitis G; Hepatitis NANBNCNDNE}  
 14/19 . . . . Rubella virus  
 14/195 . from bacteria

#### **NOTE**

In groups [C07K 14/20](#) - [C07K 14/365](#), where appropriate, after the bacteria terminology, the indication of the order (O), family (F) or genus (G) of the bacteria is given in brackets.

14/20 . . from Spirochaetales (O), e.g. Treponema, Leptospira  
 14/205 . . from Campylobacter (G)  
 14/21 . . from Pseudomonadaceae (F)  
 14/212 . . . {Moraxellaceae, e.g. Acinetobacter, Moraxella, Oligella, Psychrobacter}  
 14/215 . . from Halobacteriaceae (F)  
 14/22 . . from Neisseriaceae (F)  
 14/225 . . from Alcaligenes (G)  
 14/23 . . from Brucella (G)  
 14/235 . . from Bordetella (G)  
 14/24 . . from Enterobacteriaceae (F), e.g. Citrobacter, Serratia, Proteus, Providencia, Morganella, Yersinia  
 14/245 . . . Escherichia (G)  
 14/25 . . . Shigella (G)  
 14/255 . . . Salmonella (G)  
 14/26 . . . Klebsiella (G)  
 14/265 . . . Enterobacter (G)  
 14/27 . . . Erwinia (G)  
 14/275 . . . Hafnia (G)  
 14/28 . . from Vibrionaceae (F)  
 14/285 . . from Pasteurellaceae (F), e.g. Haemophilus influenza  
 14/29 . . from Richettsiales (O)  
 14/295 . . from Chlamydiales (O)  
 14/30 . . from Mycoplasmatales, e.g. Pleuropneumonia-like organisms [PPLO]  
 14/305 . . from Micrococcaceae (F)  
 14/31 . . . from Staphylococcus (G)  
 14/315 . . from Streptococcus (G), e.g. Enterococci  
 14/3153 . . . {Streptokinase}  
 14/3156 . . . {from Streptococcus pneumoniae (Pneumococcus) (Streptokinase [C07K 14/3153](#))}



14/32	. . from Bacillus (G)	14/4706	. . . . . {Guanosine triphosphatase activating protein, GAP}
14/325	. . . Bacillus thuringiensis crystal peptides, i.e. delta-endotoxins	14/4707	. . . . . {Muscular dystrophy}
14/33	. . from Clostridium (G)	14/4708	. . . . . {Duchenne dystrophy}
14/335	. . from Lactobacillus (G)	14/471	. . . . . {Myotonic dystrophy}
14/34	. . from Corynebacterium (G)	14/4711	. . . . . {Alzheimer's disease; Amyloid plaque core protein}
14/345	. . from Brevibacterium (G)	14/4712	. . . . . {Cystic fibrosis}
14/35	. . from Mycobacteriaceae (F)	14/4713	. . . . . {Autoimmune diseases, e.g. Insulin-dependent diabetes mellitus, multiple sclerosis, rheumatoid arthritis, systemic lupus erythematosus; Autoantigens}
14/355	. . from Nocardia (G)	14/4715	. . . . . {Pregnancy proteins, e.g. placenta proteins, alpha-feto-protein, pregnancy specific beta glycoprotein}
14/36	. . from Actinomyces; from Streptomyces (G)	14/4716	. . . . . {Muscle proteins, e.g. myosin, actin}
14/365	. . from Actinoplanes (G)	14/4717	. . . . . {Plasma globulins, lactoglobulin}
14/37	. from fungi	14/4718	. . . . . {Cytokine-induced proteins}
14/375	. . from Basidiomycetes	14/472	. . . . . {Complement proteins, e.g. anaphylatoxin, C3a, C5a}
14/38	. . from Aspergillus	14/4721	. . . . . {Lipocortins}
14/385	. . from Penicillium	14/4722	. . . . . {G-proteins}
14/39	. . from yeasts	14/4723	. . . . . {Cationic antimicrobial peptides, e.g. defensins}
14/395	. . . from Saccharomyces	14/4725	. . . . . {Proteoglycans, e.g. aggrecan}
14/40	. . . from Candida	14/4726	. . . . . {Lectins}
14/405	. from algae	14/4727	. . . . . {Mucins, e.g. human intestinal mucin}
14/41	. from lichens	14/4728	. . . . . {Calcium binding proteins, e.g. calmodulin}
14/415	. from plants	14/473	. . . . . {alpha-Glycoproteins}
14/42	. . Lectins, e.g. concanavalin, phytohaemagglutinin	14/4731	. . . . . {Recognins, e.g. malignin}
14/425	. . Zeins	14/4732	. . . . . {Casein ( <a href="#">in foodstuffs A23J</a> )}
14/43	. . {Sweetening agents, e.g.} thaumatin, {monellin}	14/4733	. . . . . {Acute pancreatitis-associated protein}
14/435	. from animals; from humans	14/4735	. . . . . {Villin}
14/43504	. . {from invertebrates}	14/4736	. . . . . {Retinoblastoma protein}
14/43509	. . . {from crustaceans}	14/4737	. . . . . {C-reactive protein}
14/43513	. . . {from arachnidae}	14/4738	. . . . . {Cell cycle regulated proteins, e.g. cyclin, CDC, INK-CCR ( <a href="#">cell cycle dependent kinases C12N 9/12</a> )}
14/43518	. . . . {from spiders}	14/474	. . . . . {Pancreatic thread protein; Reg protein}
14/43522	. . . . {from scorpions}	14/4741	. . . . . {Keratin; Cytokeratin}
14/43527	. . . . {from ticks}	14/4742	. . . . . {Bactericidal/Permeability-increasing protein [BPI]}
14/43531	. . . . {from mites}	14/4743	. . . . . {Insulin-like growth factor binding protein}
14/43536	. . . {from worms}	14/4745	. . . . . {Cancer-associated SCM-recognition factor, CRISPP}
14/4354	. . . . {from nematodes}	14/4746	. . . . . {p53}
14/43545	. . . . . {from Caenorhabditis}	14/4747	. . . . . {Apoptosis related proteins}
14/4355	. . . . {from cestodes}	14/4748	. . . . . {Tumour specific antigens; Tumour rejection antigen precursors [TRAP], e.g. MAGE}
14/43554	. . . . . {from Taenia}	14/475	. . Growth factors; Growth regulators
14/43559	. . . . {from trematodes}	14/4753	. . . {Hepatocyte growth factor; Scatter factor; Tumor cytotoxic factor II}
14/43563	. . . {from insects}	14/4756	. . . {Neuregulins, i.e. p185erbB2 ligands, glial growth factor, heregulin, ARIA, neu differentiation factor}
14/43568	. . . . {from wasps}	14/48	. . . Nerve growth factor [NGF]
14/43572	. . . . {from bees}	14/485	. . . Epidermal growth factor [EGF], i.e. urogastrone
14/43577	. . . . {from flies}	14/49	. . . Platelet-derived growth factor [PDGF]
14/43581	. . . . . {from Drosophila}	14/495	. . . Transforming growth factor [TGF]
14/43586	. . . . {from silkworms}		
14/4359	. . . . {from fleas}		
14/43595	. . . {from coelenteratae, e.g. medusae}		
14/44	. . from protozoa		
14/445	. . . Plasmodium		
14/45	. . . Toxoplasma		
14/455	. . . Eimeria		
14/46	. . from vertebrates		
14/461	. . . {from fish}		
14/463	. . . {from amphibians}		
14/465	. . . from birds		
14/47	. . . from mammals		
14/4701	. . . . {not used}		
14/4702	. . . . . {Regulators; Modulating activity}		
14/4703	. . . . . {Inhibitors; Suppressors}		
14/4705	. . . . . {stimulating, promoting or activating activity}		

14/50	. . . Fibroblast growth factor [FGF]	14/5759	. . . {Products of obesity genes, e.g. leptin, obese (OB), tub, fat}
14/501	. . . . {acidic FGF [aFGF]}	14/58	. . . Atrial natriuretic factor complex; Atriopeptin; Atrial natriuretic peptide [ANP]; Cardionatin; Cardiodilatin
14/503	. . . . {basic FGF [bFGF]}	14/582	. . . . {at least 1 amino acid in D-form}
14/505	. . . Erythropoietin [EPO]	14/585	. . . Calcitonins
14/51	. . . Bone morphogenetic factor; Osteogenins; Osteogenic factor; Bone-inducing factor	14/5855	. . . . {at least 1 amino acid in D-form}
14/515	. . . Angiogenesis factors; Angiogenin	14/59	. . . Follicle-stimulating hormone [FSH]; Chorionic gonadotropins, e.g.hCG [human chorionic gonadotropin]; Luteinising hormone [LH]; Thyroid-stimulating hormone [TSH]
14/52	. . Cytokines; Lymphokines; Interferons	14/592	. . . . {at least 1 amino acid in D-form}
14/521	. . . {Chemokines}	14/595	. . . Gastrins; Cholecystokinins [CCK]
14/522	. . . . {Alpha-chemokines, e.g. NAP-2, ENA-78, GRO-alpha/MGSA/NAP-3, GRO-beta/MIP-2alpha, GRO-gamma/MIP-2beta, IP-10, GCP-2, MIG, PBSF, PF-4, KC}	14/5955	. . . . {at least 1 amino acid in D-form}
14/523	. . . . {Beta-chemokines, e.g. RANTES, I-309/TCA-3, MIP-1alpha, MIP-1beta/ACT-2/LD78/SCIF, MCP-1/MCAF, MCP-2, MCP-3, LDCF-1, LDCF-2}	14/60	. . . Growth hormone-releasing factor [GH-RF], i.e. somatoliberin
14/524	. . . {Thrombopoietin, i.e. C-MPL ligand}	14/605	. . . Glucagons
14/525	. . . Tumour necrosis factor [TNF]	14/61	. . . Growth hormone [GH], i.e. somatotropin
14/5255	. . . . {Lymphotoxin [LT]}	14/615	. . . . Extraction from natural sources
14/53	. . . Colony-stimulating factor [CSF]	14/62	. . . Insulins
14/535	. . . . Granulocyte CSF; Granulocyte-macrophage CSF	14/622	. . . . {at least 1 amino acid in D-form}
14/54	. . . Interleukins [IL]	14/625	. . . . Extraction from natural sources
14/5403	. . . . {IL-3}	14/63	. . . Motilins
14/5406	. . . . {IL-4}	14/635	. . . Parathyroid hormone, i.e. parathormone; Parathyroid hormone-related peptides
14/5409	. . . . {IL-5}	14/64	. . . Relaxins
14/5412	. . . . {IL-6}	14/645	. . . Secretins
14/5415	. . . . {Leukaemia inhibitory factor [LIF]}	14/65	. . . Insulin-like growth factors, i.e. somatomedins, e.g. IGF-1, IGF-2
14/5418	. . . . {IL-7}	14/655	. . . Somatostatins
14/5421	. . . . {IL-8}	14/6555	. . . . {at least 1 amino acid in D-form}
14/5425	. . . . {IL-9}	14/66	. . . Thymopoietins
14/5428	. . . . {IL-10}	14/662	. . . . {at least 1 amino acid in D-form}
14/5431	. . . . {IL-11}	14/665	. . derived from pro-opiomelanocortin, pro-enkephalin or pro-dynorphin
14/5434	. . . . {IL-12}	14/67	. . . Lipotropins, e.g. beta, gamma lipotropin
14/5437	. . . . {IL-13}	14/672	. . . . {with at least 1 amino acid in D-form}
14/544	. . . . {IL-14}	14/675	. . . Beta-endorphins
14/5443	. . . . {IL-15}	14/6755	. . . . {with at least 1 amino acid in D-form}
14/5446	. . . . {IL-16}	14/68	. . . Melanocyte-stimulating hormone [MSH]
14/545	. . . . IL-1	14/685	. . . . Alpha-melanotropin
14/55	. . . . IL-2	14/69	. . . . Beta-melanotropin
14/555	. . . Interferons [IFN]	14/695	. . . Corticotropin [ACTH]
14/56	. . . . IFN-alpha	14/6955	. . . . {with at least 1 amino acid in D-form}
14/565	. . . . IFN-beta	14/70	. . . Enkephalins
14/57	. . . . IFN-gamma	14/702	. . . . {with at least 1 amino acid in D-form}
14/575	. . Hormones (derived from pro-opiomelanocortin, pro-enkephalin or pro-dynorphin <a href="#">C07K 14/665</a> , e.g. corticotropin <a href="#">C07K 14/695</a> )	14/705	. . Receptors; Cell surface antigens; Cell surface determinants {(tumour specific antigens <a href="#">C07K 14/4748</a> )}
14/57509	. . . {Corticotropin releasing factor [CRF] (Urotensin)}	14/70503	. . . {Immunoglobulin superfamily}
14/57518	. . . {Placental lactogen; Chorionic somatomammotropin}	14/70507	. . . . {CD2}
14/57527	. . . {Calcitonin gene related peptide}	14/7051	. . . . {T-cell receptor (TcR)-CD3 complex}
14/57536	. . . {Endothelin, vasoactive intestinal contractor [VIC]}	14/70514	. . . . {CD4}
14/57545	. . . {Neuropeptide Y}	14/70517	. . . . {CD8}
14/57554	. . . {Prolactin}	14/70521	. . . . {CD28, CD152}
14/57563	. . . {Vasoactive intestinal peptide [VIP]; Related peptides}	14/70525	. . . . {ICAM molecules, e.g. CD50, CD54, CD102}
14/57572	. . . {Gastrin releasing peptide (bombesin <a href="#">C07K 7/086</a> )}	14/70528	. . . . {CD58}
14/57581	. . . {Thymosin; Related peptides}	14/70532	. . . . {B7 molecules, e.g. CD80, CD86}
		14/70535	. . . . {Fc-receptors, e.g. CD16, CD32, CD64 (CD2314/705F)}

- 14/70539 . . . . {MHC-molecules, e.g. HLA-molecules}  
 14/70542 . . . . {CD106}  
 14/70546 . . . {Integrin superfamily}  
 14/7055 . . . . {Integrin beta1-subunit-containing molecules, e.g. CD29, CD49}  
 14/70553 . . . . {Integrin beta2-subunit-containing molecules, e.g. CD11, CD18}  
 14/70557 . . . . {Integrin beta3-subunit-containing molecules, e.g. CD41, CD51, CD61}  
 14/7056 . . . {Lectin superfamily, e.g. CD23, CD72}  
 14/70564 . . . . {Selectins, e.g. CD62}  
 14/70567 . . . {Nuclear receptors, e.g. retinoic acid receptor [RAR], RXR, nuclear orphan receptors}  
 14/70571 . . . {for neuromediators, e.g. serotonin receptor, dopamine receptor}  
 14/70575 . . . {NGF/TNF-superfamily, e.g. CD70, CD95L, CD153, CD154 (NGF [C07K 14/48](#), TNF [C07K 14/525](#))}  
 14/70578 . . . {NGF-receptor/TNF-receptor superfamily, e.g. CD27, CD30, CD40, CD95 (NGF-receptor [C07K 14/71](#), TNF-receptor [C07K 14/7151](#))}  
 14/70582 . . . {CD71}  
 14/70585 . . . {CD44}  
 14/70589 . . . {CD45}  
 14/70592 . . . {CD52}  
 14/70596 . . . {Molecules with a "CD"-designation not provided for elsewhere}  
 14/71 . . . for growth factors; for growth regulators  
 14/715 . . . for cytokines; for lymphokines; for interferons  
 14/7151 . . . . {for tumor necrosis factor [TNF], for lymphotoxin [LT]}  
 14/7153 . . . . {for colony-stimulating factors [CSF]}  
 14/7155 . . . . {for interleukins [IL]}  
 14/7156 . . . . {for interferons [IFN]}  
 14/7158 . . . . {for chemokines}  
 14/72 . . . for hormones {(for neuromediators [C07K 14/70571](#))}  
 14/721 . . . . {Steroid/thyroid hormone superfamily, e.g. GR, EcR, androgen receptor, oestrogen receptor}  
 14/723 . . . . {G protein coupled receptor, e.g. TSHR-thyrotropin-receptor, LH/hCG receptor, FSH receptor}  
 14/745 . . Blood coagulation or fibrinolysis factors  
 14/7455 . . . {Thrombomodulin}  
 14/75 . . . Fibrinogen  
 14/755 . . . Factors VIII {, e.g. factor VIII C (AHF), factor VIII Ag (VWF)}  
 14/76 . . Albumins  
 14/765 . . . Serum albumin, e.g. HSA  
 14/77 . . . Ovalbumin  
 14/775 . . Apolipoproteins  
 14/78 . . Connective tissue peptides, e.g. collagen, elastin, laminin, fibronectin, vitronectin or cold insoluble globulin [CIG]  
 14/785 . . Alveolar surfactant peptides; Pulmonary surfactant peptides  
 14/79 . . Transferrins, e.g. lactoferrins, ovotransferrins  
 14/795 . . Porphyrin- or corrin-ring-containing peptides  
 14/80 . . Cytochromes  
 14/805 . . Haemoglobins; Myoglobins  
 14/81 . . Protease inhibitors  
 14/8103 . . {Exopeptidase (E.C. 3.4.11-19) inhibitors}  
 14/8107 . . {Endopeptidase (E.C. 3.4.21-99) inhibitors}  
 14/811 . . . {Serine protease (E.C. 3.4.21) inhibitors}  
 14/8114 . . . . {Kunitz type inhibitors}  
 14/8117 . . . . {Bovine/basic pancreatic trypsin inhibitor (BPTI, aprotinin)}  
 14/8121 . . . . {Serpins}  
 14/8125 . . . . {Alpha-1-antitrypsin}  
 14/8128 . . . . {Antithrombin III}  
 14/8132 . . . . {Plasminogen activator inhibitors}  
 14/8135 . . . . {Kazal type inhibitors, e.g. pancreatic secretory inhibitor, ovomucoid}  
 14/8139 . . . {Cysteine protease (E.C. 3.4.22) inhibitors, e.g. cystatin}  
 14/8142 . . . {Aspartate protease (E.C. 3.4.23) inhibitors, e.g. HIV protease inhibitors}  
 14/8146 . . . {Metalloprotease (E.C. 3.4.24) inhibitors, e.g. tissue inhibitor of metallo proteinase, TIMP}  
 14/815 . . from leeches, e.g. hirudin, eglin  
 14/82 . Translation products from oncogenes  
 14/825 . Metallothioneins
- 16/00 Immunoglobulins [IGs], e.g. monoclonal or polyclonal antibodies** {antibodies with enzymatic activity, e.g. abzymes [C12N 9/0002](#)}
- NOTES**
1. Documents characterised by the technical aspects of the construction of an antibody or fragment thereof, should be classified in [C07K 16/00](#) - [C07K 16/065](#) or [C07K 16/46](#) - [C07K 16/468](#)
  2. Documents not characterised by the technical aspects of the construction of an antibody or fragment thereof, should be classified only according to their specificity, where necessary accompanied by one or more appropriate indexing codes
- 16/005 . {constructed by phage libraries}  
 16/02 . from eggs  
 16/04 . from milk  
 16/06 . from serum  
 16/065 . . {Purification, fragmentation}  
 16/08 . against material from viruses  
 16/081 . . {from DNA viruses}  
 16/082 . . . {Hepadnaviridae, e.g. hepatitis B virus}  
 16/084 . . . {Papovaviridae, e.g. papillomavirus, polyomavirus, SV40, BK virus, JC virus}  
 16/085 . . . {Herpetoviridae, e.g. pseudorabies virus, Epstein-Barr virus}  
 16/087 . . . . {Herpes simplex virus}  
 16/088 . . . . {Varicella-zoster virus}
- WARNING**
- Group [C07K 16/088](#) is impacted by reclassification into group [C07K 16/089](#). Groups [C07K 16/088](#) and [C07K 16/089](#) should be considered in order to perform a complete search.



16/089 . . . . {Cytomegalovirus}

**WARNING**

Group [C07K 16/089](#) is incomplete pending reclassification of documents from group [C07K 16/088](#).

Groups [C07K 16/088](#) and [C07K 16/089](#) should be considered in order to perform a complete search.

16/10 . . from RNA viruses

**WARNING**

Group [C07K 16/10](#) is impacted by reclassification into groups [C07K 16/1002](#) and [C07K 16/1003](#).

Groups [C07K 16/10](#), [C07K 16/1002](#) and [C07K 16/1003](#) should be considered in order to perform a complete search.

16/1002 . . . {Coronaviridae}

**WARNING**

Groups [C07K 16/1002](#) and [C07K 16/1003](#) are incomplete pending reclassification of documents from group [C07K 16/10](#).

Groups [C07K 16/10](#), [C07K 16/1002](#) and [C07K 16/1003](#) should be considered in order to perform a complete search.

16/1003 . . . . {Severe acute respiratory syndrome coronavirus 2 [SARS-CoV-2 or Covid-19]}

16/1009 . . . {Picornaviridae, e.g. hepatitis A virus}

16/1018 . . . {Orthomyxoviridae, e.g. influenza virus}

16/1027 . . . {Paramyxoviridae, e.g. respiratory syncytial virus}

16/1036 . . . {Retroviridae, e.g. leukemia viruses}

16/1045 . . . . {Lentiviridae, e.g. HIV, FIV, SIV}

16/1054 . . . . {gag-pol, e.g. p17, p24}

16/1063 . . . . {env, e.g. gp41, gp110/120, gp160, V3, PND, CD4 binding site}

16/1072 . . . . {Regulatory proteins, e.g. tat, rev, vpt}

16/1081 . . . {Togaviridae, e.g. flavivirus, rubella virus, hog cholera virus}

16/109 . . . . {Hepatitis C virus; Hepatitis G virus}

16/12 . against material from bacteria

16/1203 . . {from Gram-negative bacteria}

16/1207 . . . {from Spirochaetales (O), e.g. Treponema, Leptospira}

16/121 . . . {from Helicobacter (Campylobacter) (G)}

16/1214 . . . {from Pseudomonadaceae (F)}

16/1217 . . . {from Neisseriaceae (F)}

**WARNING**

Group [C07K 16/1217](#) is impacted by reclassification into group [C07K 16/1218](#).

Groups [C07K 16/1217](#) and [C07K 16/1218](#) should be considered in order to perform a complete search.

16/1218 . . . {from Acinetobacter}

**WARNING**

Group [C07K 16/1218](#) is incomplete pending reclassification of documents from group [C07K 16/1217](#).

Groups [C07K 16/1217](#) and [C07K 16/1218](#) should be considered in order to perform a complete search.

16/1221 . . . {from Brucella (G)}

16/1225 . . . {from Bordetella (G)}

16/1228 . . . {from Enterobacteriaceae (F), e.g. Citrobacter, Serratia, Proteus, Providencia, Morganella, Yersinia}

16/1232 . . . . {from Escherichia (G)}

16/1235 . . . . {from Salmonella (G)}

16/1239 . . . {from Vibrionaceae (G)}

16/1242 . . . {from Pasteurellaceae (F), e.g. Haemophilus influenza}

16/1246 . . . {from Rickettsiales (O)}

16/125 . . . {from Chlamydiales (O)}

16/1253 . . . {from Mycoplasmatales, e.g. Pleuropneumonia-like organisms [PPLO]}

16/1257 . . . {from Bacteridaceae (F)}

16/126 . . . {from Legionella (G)}

16/1264 . . . {from Rhizobiaceae (F)}

16/1267 . . {from Gram-positive bacteria}

16/1271 . . . {from Micrococcaceae (F), e.g. Staphylococcus}

16/1275 . . . {from Streptococcus (G)}

16/1278 . . . {from Bacillus (G)}

16/1282 . . . {from Clostridium (G)}

16/1285 . . . {from Corynebacterium (G)}

16/1289 . . . {from Mycobacteriaceae (F)}

16/1292 . . . {from Actinomyces; from Streptomyces (G)}

16/1296 . . . {from Listeria}

16/14 . against material from fungi, algae or lichens

16/16 . against material from plants

16/18 . against material from animals or humans

16/20 . from protozoa

16/205 . . . {Plasmodium}

16/22 . against growth factors {; against growth regulators}

16/24 . against cytokines, lymphokines or interferons

16/241 . . . {Tumor Necrosis Factors}

16/242 . . . . {Lymphotoxin [LT]}

16/243 . . . {Colony Stimulating Factors}

16/244 . . . {Interleukins [IL]}

16/245 . . . . {IL-1}

16/246 . . . . {IL-2}

16/247 . . . . {IL-4}

16/248 . . . . {IL-6}

16/249 . . . {Interferons}

16/26 . against hormones {; against hormone releasing or inhibiting factors}

16/28 . against receptors, cell surface antigens or cell surface determinants

16/2803 . . . {against the immunoglobulin superfamily}

16/2806 . . . . {against CD2}

16/2809 . . . . {against the T-cell receptor (TcR)-CD3 complex}

16/2812 . . . . {against CD4}

- 16/2815 . . . . {against CD8}
- 16/2818 . . . . {against CD28 or CD152}
- 16/2821 . . . . {against ICAM molecules, e.g. CD50, CD54, CD102}
- 16/2824 . . . . {against CD58}
- 16/2827 . . . . {against B7 molecules, e.g. CD80, CD86}
- 16/283 . . . . {against Fc-receptors, e.g. CD16, CD32, CD64 ([C07K 16/2851](#))}
- 16/2833 . . . . {against MHC-molecules, e.g. HLA-molecules}
- 16/2836 . . . . {against CD106}
- 16/2839 . . . {against the integrin superfamily}
- 16/2842 . . . . {against integrin beta1-subunit-containing molecules, e.g. CD29, CD49}
- 16/2845 . . . . {against integrin beta2-subunit-containing molecules, e.g. CD11, CD18}
- 16/2848 . . . . {against integrin beta3-subunit-containing molecules, e.g. CD41, CD51, CD61}
- 16/2851 . . . {against the lectin superfamily, e.g. CD23, CD72}
- 16/2854 . . . . {against selectins, e.g. CD62}
- 16/2857 . . . {against nuclear receptors, e.g. retinoic acid receptor [RAR], RXR, orphan receptor}
- 16/286 . . . {against neuromediator receptors, e.g. serotonin receptor, dopamine receptor}
- 16/2863 . . . {against receptors for growth factors, growth regulators}
- 16/2866 . . . {against receptors for cytokines, lymphokines, interferons}
- 16/2869 . . . {against hormone receptors ([for antibodies against neuromediator receptors C07K 16/286](#))}
- 16/2872 . . . {against prion molecules, e.g. CD230}
- 16/2875 . . . {against the NGF/TNF superfamily, e.g. CD70, CD95L, CD153, CD154 ([against NGF C07K 16/22](#), [against TNF C07K 16/241](#))}
- 16/2878 . . . {against the NGF-receptor/TNF-receptor superfamily, e.g. CD27, CD30, CD40, CD95}
- 16/2881 . . . {against CD71}
- 16/2884 . . . {against CD44}
- 16/2887 . . . {against CD20}
- 16/289 . . . {against CD45}
- 16/2893 . . . {against CD52}
- 16/2896 . . . {against molecules with a "CD"-designation, not provided for elsewhere}
- 16/30 . . . from tumour cells
- 16/3007 . . . . {Carcino-embryonic Antigens}
- 16/3015 . . . . {Breast}
- 16/3023 . . . . {Lung}
- 16/303 . . . . {Liver or Pancreas}
- 16/3038 . . . . {Kidney, bladder}
- 16/3046 . . . . {Stomach, Intestines}
- 16/3053 . . . . {Skin, nerves, brain}
- 16/3061 . . . . {Blood cells}
- 16/3069 . . . . {Reproductive system, e.g. ovaria, uterus, testes, prostate}
- 16/3076 . . . . {against structure-related tumour-associated moieties}
- 16/3084 . . . . . {against tumour-associated gangliosides}
- 16/3092 . . . . . {against tumour-associated mucins}
- 16/32 . . . against translation products of oncogenes
- 16/34 . . . against blood group antigens
- 16/36 . . . against blood coagulation factors
- 16/38 . . . against protease inhibitors of peptide structure
- 16/40 . . . against enzymes
- 16/42 . . . against immunoglobulins
- 16/4208 . . . {against an idiotypic determinant on Ig}
- 16/4216 . . . {against anti-viral Ig}
- 16/4225 . . . . {against anti-HIV Ig}
- 16/4233 . . . {against anti-bacterial Ig}
- 16/4241 . . . {against anti-human or anti-animal Ig}
- 16/425 . . . . {against anti-protozoal Ig}
- 16/4258 . . . . {against anti-receptor Ig}
- 16/4266 . . . . . {against anti-tumor receptor Ig}
- 16/4275 . . . . . {against anti-CD4 Ig}
- 16/4283 . . . {against an allotypic or isotypic determinant on Ig}
- 16/4291 . . . {against IgE}
- 16/44 . . . against material not provided for elsewhere {, e.g. haptens, metals, DNA, RNA, amino acids}
- 16/46 . . . Hybrid immunoglobulins ([hybrids of an immunoglobulin with a peptide not being an immunoglobulin C07K 19/00](#))
- 16/461 . . . {Igs containing Ig-regions, -domains or -residues form different species}
- 16/462 . . . {Igs containing a variable region (Fv) from one specie and a constant region (Fc) from another}
- 16/464 . . . {Igs containing CDR-residues from one specie grafted between FR-residues from another}
- 16/465 . . . . {with additional modified FR-residues}
- 16/467 . . . {Igs with modifications in the FR-residues only}
- 16/468 . . . {Immunoglobulins having two or more different antigen binding sites, e.g. multifunctional antibodies}
- 17/00** **Carrier-bound or immobilised peptides ([carrier-bound or immobilised enzymes C12N 11/00](#)); Preparation thereof**
- 17/02 . . . Peptides being immobilised on, or in, an organic carrier
- 17/04 . . . entrapped within the carrier, e.g. gel, hollow fibre
- 17/06 . . . attached to the carrier via a bridging agent
- 17/08 . . . the carrier being a synthetic polymer
- 17/10 . . . the carrier being a carbohydrate
- 17/12 . . . Cellulose or derivatives thereof
- 17/14 . . . Peptides being immobilised on, or in, an inorganic carrier
- 19/00** **Hybrid peptides {, i.e. peptides covalently bound to nucleic acids, or non-covalently bound protein-protein complexes}**
- 2299/00** **Coordinates from 3D structures of peptides, e.g. proteins or enzymes**
- 2317/00** **Immunoglobulins specific features**
- 2317/10 . . . characterized by their source of isolation or production
- 2317/11 . . . isolated from eggs
- 2317/12 . . . isolated from milk
- 2317/13 . . . isolated from plants
- 2317/14 . . . Specific host cells or culture conditions, e.g. components, pH or temperature
- 2317/20 . . . characterized by taxonomic origin
- 2317/21 . . . from primates, e.g. man
- 2317/22 . . . from camelids, e.g. camel, llama or dromedary
- 2317/23 . . . from birds

- 2317/24 . . containing regions, domains or residues from different species, e.g. chimeric, humanized or veneered
- 2317/30 . characterized by aspects of specificity or valency
- 2317/31 . . multispecific
- 2317/32 . . specific for a neo-epitope on a complex, e.g. antibody-antigen or ligand-receptor
- 2317/33 . . Crossreactivity, e.g. for species or epitope, or lack of said crossreactivity
- 2317/34 . . Identification of a linear epitope shorter than 20 amino acid residues or of a conformational epitope defined by amino acid residues
- 2317/35 . . Valency
- 2317/40 . characterized by post-translational modification
- 2317/41 . . Glycosylation, sialylation, or fucosylation
- 2317/50 . characterized by immunoglobulin fragments
- 2317/51 . . Complete heavy chain or Fd fragment, i.e. VH + CH1
- 2317/515 . . Complete light chain, i.e. VL + CL
- 2317/52 . . Constant or Fc region; Isotype
- 2317/522 . . . CH1 domain
- 2317/524 . . . CH2 domain
- 2317/526 . . . CH3 domain
- 2317/528 . . . CH4 domain
- 2317/53 . . . Hinge
- 2317/54 . . F(ab')<sub>2</sub>
- 2317/55 . . Fab or Fab'
- 2317/56 . . variable (Fv) region, i.e. VH and/or VL
- 2317/565 . . . Complementarity determining region [CDR]
- 2317/567 . . . Framework region [FR]
- 2317/569 . . . Single domain, e.g. dAb, sdAb, VHH, VNAR or nanobody®
- 2317/60 . characterized by non-natural combinations of immunoglobulin fragments
- 2317/62 . . comprising only variable region components
- 2317/622 . . . Single chain antibody (scFv)
- 2317/624 . . . Disulfide-stabilized antibody (dsFv)
- 2317/626 . . . Diabody or triabody
- 2317/64 . . comprising a combination of variable region and constant region components
- 2317/66 . . comprising a swap of domains, e.g. CH3-CH2, VH-CL or VL-CH1
- 2317/70 . characterized by effect upon binding to a cell or to an antigen
- 2317/71 . . Decreased effector function due to an Fc-modification
- 2317/72 . . Increased effector function due to an Fc-modification
- 2317/73 . . Inducing cell death, e.g. apoptosis, necrosis or inhibition of cell proliferation
- 2317/732 . . . Antibody-dependent cellular cytotoxicity [ADCC]
- 2317/734 . . . Complement-dependent cytotoxicity [CDC]
- 2317/74 . . Inducing cell proliferation
- 2317/75 . . Agonist effect on antigen
- 2317/76 . . Antagonist effect on antigen, e.g. neutralization or inhibition of binding
- 2317/77 . . Internalization into the cell
- 2317/80 . remaining in the (producing) cell, i.e. intracellular antibodies or intrabodies
- 2317/81 . . functional in the endoplasmic reticulum [ER] or the Golgi apparatus
- 2317/82 . . functional in the cytoplasm, the inner aspect of the cell membrane, the nucleus or the mitochondria
- 2317/90 . characterized by (pharmaco)kinetic aspects or by stability of the immunoglobulin
- 2317/92 . . Affinity (KD), association rate (Ka), dissociation rate (Kd) or EC50 value
- 2317/94 . . Stability, e.g. half-life, pH, temperature or enzyme-resistance
- 2318/00 Antibody mimetics or scaffolds**
- 2318/10 . Immunoglobulin or domain(s) thereof as scaffolds for inserted non-Ig peptide sequences, e.g. for vaccination purposes
- 2318/20 . Antigen-binding scaffold molecules wherein the scaffold is not an immunoglobulin variable region or antibody mimetics
- 2319/00 Fusion polypeptide**
- 2319/01 . containing a localisation/targetting motif
- 2319/02 . . containing a signal sequence
- 2319/03 . . containing a transmembrane segment
- 2319/033 . . containing a motif for targeting to the internal surface of the plasma membrane, e.g. containing a myristoylation motif
- 2319/034 . . containing a motif for targeting to the periplasmic space of Gram negative bacteria as a soluble protein, i.e. signal sequence should be cleaved
- 2319/035 . . containing a signal for targeting to the external surface of a cell, e.g. to the outer membrane of Gram negative bacteria, GPI- anchored eukaryote proteins
- 2319/036 . . targeting to the medium outside of the cell, e.g. type III secretion
- 2319/04 . . containing an ER retention signal such as a C-terminal HDEL motif
- 2319/05 . . containing a GOLGI retention signal
- 2319/055 . . containing a signal for localisation to secretory granules (for exocytosis)
- 2319/06 . . containing a lysosomal/endosomal localisation signal
- 2319/07 . . containing a mitochondrial localisation signal
- 2319/08 . . containing a chloroplast localisation signal
- 2319/09 . . containing a nuclear localisation signal
- 2319/095 . . containing a nuclear export signal
- 2319/10 . . containing a tag for extracellular membrane crossing, e.g. TAT or VP22
- 2319/20 . containing a tag with affinity for a non-protein ligand
- 2319/21 . . containing a His-tag
- 2319/22 . . containing a Strep-tag
- 2319/23 . . containing a GST-tag
- 2319/24 . . containing a MBP (maltose binding protein)-tag
- 2319/30 . Non-immunoglobulin-derived peptide or protein having an immunoglobulin constant or Fc region, or a fragment thereof, attached thereto
- 2319/31 . fusions, other than Fc, for prolonged plasma life, e.g. albumin
- 2319/32 . fusions with soluble part of a cell surface receptor, "decoy receptors"
- 2319/33 . fusions for targeting to specific cell types, e.g. tissue specific targeting, targeting of a bacterial subspecies
- 2319/35 . containing a fusion for enhanced stability/folding during expression, e.g. fusions with chaperones or thioredoxin

- 2319/40 . containing a tag for immunodetection, or an epitope for immunisation
- 2319/41 . . containing a Myc-tag
- 2319/42 . . containing a HA(hemagglutinin)-tag
- 2319/43 . . containing a FLAG-tag
- 2319/50 . containing protease site
- 2319/55 . containing a fusion with a toxin, e.g. diptheria toxin
- 2319/60 . containing spectroscopic/fluorescent detection, e.g. green fluorescent protein [GFP]
- 2319/61 . containing an enzyme fusion for detection (lacZ, luciferase)
- 2319/70 . containing domain for protein-protein interaction
- 2319/705 . . containing a protein-A fusion
- 2319/71 . . containing domain for transcriptional activaation, e.g. VP16
- 2319/715 . . . containing a domain for ligand dependent transcriptional activation, e.g. containing a steroid receptor domain
- 2319/72 . . containing SH2 domain
- 2319/73 . . containing coiled-coiled motif (leucine zippers)
- 2319/735 . . containing a domain for self-assembly, e.g. a viral coat protein (includes phage display)
- 2319/74 . . containing a fusion for binding to a cell surface receptor
- 2319/75 . . . containing a fusion for activation of a cell surface receptor, e.g. thrombopoeitin, NPY and other peptide hormones
- 2319/80 . containing a DNA binding domain, e.g. LacI or Tet-repressor
- 2319/81 . . containing a Zn-finger domain for DNA binding
- 2319/85 . containing an RNA binding domain
- 2319/90 . containing a motif for post-translational modification
- 2319/91 . . containing a motif for glycosylation
- 2319/912 . . . containing a GPI (phosphatidyl-inositol glycane) anchor
- 2319/915 . . containing a motif for acylation
- 2319/92 . . containing an intein ("protein splicing")domain
- 2319/95 . containing a motif/fusion for degradation (ubiquitin fusions, PEST sequence)