COOPERATIVE PATENT CLASSIFICATION

CHEMISTRY; METALLURGY

CHEMISTRY

ORGANIC CHEMISTRY

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

1. 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:
     i. "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;
     ii. "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-diamino-butanolic acid. Thus, cyclic compounds in which at least one link in the ring is a non-peptide link are considered as "linear peptides";
     iii. "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:
       a. "linear depsipeptides" 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- 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-OCH₂CO₂H and Gly-OCH₂CO-Ala-Gly are considered as "linear depsipeptides", but HOCH₂CO-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;
       b. "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-OCH₂CO.

2. 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.

3. Peptides prepared by chemical processes and having an amino acid sequence derived from naturally occurring peptides are classified with the natural one.

4. 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.

5. 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.
1. 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 C07K 5/0202
- C07K 5/027 covered by C07K 5/0205
- C07K 5/03 covered by C07K 5/0207
- C07K 5/033 covered by C07K 5/021
- C07K 5/037 covered by C07K 5/0215
- C07K 5/062 covered by C07K 5/06017
- C07K 5/065 covered by C07K 5/06078
- C07K 5/068 covered by C07K 5/06086
- C07K 5/072 covered by C07K 5/06104
- C07K 5/075 covered by C07K 5/0613
- C07K 5/078 covered by C07K 5/06139
- C07K 5/083 covered by C07K 5/0804
- C07K 5/087 covered by C07K 5/0812
- C07K 5/09 covered by C07K 5/0815
- C07K 5/093 covered by C07K 5/0819
- C07K 5/097 covered by C07K 5/0821
- C07K 5/103 covered by C07K 5/1005
- C07K 5/107 covered by C07K 5/1016
- C07K 5/11 covered by C07K 5/1019
- C07K 5/113 covered by C07K 5/1021
- C07K 5/117 covered by C07K 5/1024
- C07K 14/185 covered by C07K 14/1816
- C07K 14/725 covered by C07K 14/705
- C07K 14/73 covered by C07K 14/70514
- C07K 14/735 covered by C07K 14/70535
- C07K 14/74 covered by C07K 14/70539

2. 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.
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. 'sosters', 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-inverse 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(=O)-}
5/022 . . . {containing the structure -X-C(=O)-(C)n-N-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-(X2-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(NH2)C02H)

5/06 . . . Dipeptides
5/0608 . . . {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}
7/00  Peptides having 5 to 20 amino acids in a fully defined sequence; Derivatives thereof

NOTE
Cyclic peptides containing at least one abnormal peptide bond in the ring.

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

7/00  Peptides having 5 to 11 amino acids

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 bond
7/52  with only normal peptide link in the ring
7/54  with at least one abnormal peptide bond 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
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 >

B  0 and m+n > 0, A, B, D, E being heteroatoms; X
C  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)
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) 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.

NOTE
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.

FROM VIRUSES

DNA viruses
Parvoviridae, e.g. feline panleukopenia virus, human parvovirus
Hepadnaviridae, e.g. hepatitis B virus
Papovaviridae, e.g. papillomavirus, polyomavirus, SV40, BK virus, JC virus
Herpetoviridae, e.g. pseudorabies virus
Herpesviridae, i.e. Anjetzky virus
Herpes simplex virus I or II
Varicella-zoster virus
Cytomegalovirus
Epstein-Barr virus
Marek's disease virus
Infectious bovine rhinotracheitis virus
Avipoxviridae, e.g. avipoxvirus
Vaccinia virus; Variola virus
Adenoviridae
RNA viruses
Arteriviridae, e.g. EAV, PRRSV
Picornaviridae, e.g. coxsackie virus, echovirus, enterovirus
Foot-and-mouth disease virus
Rhinovirus
Hepatitis A virus
Poliomyelitis
Orthomyxoviridae, e.g. influenza virus
Paramyxoviridae, e.g. parainfluenza virus
Mumps virus; Measles virus
Newcastle disease virus
Canine distemper virus
Respiratory syncytial virus
Reoviridae, e.g. rotavirus, bluetongue virus, Colorado tick fever virus
Rhabdoviridae, e.g. rabies virus, Duvenhage virus, Mokola virus, vesicular stomatitis virus
Retroviridae, e.g. bovine leukemia virus, feline leukemia virus human T-cell leukemia-lymphoma virus
Lentiviridae, e.g. visna-maedi virus, equine infectious virus, FIV, SIV
HIV-1; HIV-2
[gag-pol, e.g. p55, p24/25, p17/18, p7, p6, p66/68, p51/52, p31/34, p32, p40]
[env, e.g. gp160, gp110/120, gp41, V3, peptid T, CD4-Binding site]
[Regulatory proteins, e.g. tat, nef, rev, vif, vpu, vpr, vpt, vpx]
Coronaviridae, e.g. avian infectious bronchitis virus
Porcine transmissible gastroenteritis virus
Bunyaviridae, e.g. California encephalitis virus, Rift valley fever virus, Hantaan virus
Togaviridae; [Flaviviridae]
[Alphaviruses or Group A arboviruses, e.g. sindbis, VEE, EEE, WEE, semliki forest virus (rubella virus C07K 14/19)]
[Flaviviridae, e.g. pestivirus, mucosal disease virus, bovine viral diarrhoea virus, classical swine fever virus (hog cholera virus), border disease virus]
[Flaviviruses or Group B arboviruses, e.g. yellow fever virus, japanes encephalitis, tick-borne encephalitis, dengue]
[Hepatitis C; Hepatitis NANB]
[Hepatitis G; Hepatitis NANBNCNDNE]
Rubella virus
from bacteria
from Spirochaetes (O), e.g. Treponema, Leptospira
from Campylobacter (G)
from Pseudomonadaceae (F)
[Moraxellaceae, e.g. Acinetobacter, Moraxella, Oligella, Psychrobacter]
from Halobacteriaceae (F)
from Neisseriaceae (F)
from Alcaligenes (G)
from Brucella (G)
from Bordetella (G)
from Enterobacteriaceae (F), e.g. Citrobacter, Serratia, Proteus, Providencia, Morganella, Yersinia
from Escherichia (G)
from Shigella (G)
from Salmonella (G)
from Klebsiella (G)
from Enterobacter (G)
from Erwinia (G)
from Hafnia (G)
from Vibrionaceae (F)
from Pasteurellaceae (F), e.g. Haemophilus influenza
from Richettsiales (O)
from Chlamydiaceae (F)
from Mycoplasmatales, e.g. Pneumococcus or Group A streptococcus, e.g. Streptococcus, e.g. Streptococcus pneumoniae
from Micrococaceae (F)
from Staphylococcaceae (F)
from Streptococcus (G), e.g. Enterococci
from Streptococcus pneumoniae
from Bacillus (G)
14/325 . . . Bacillus thuringiensis crystal protein (delta-endotoxin)
14/33 . . . from Clostridium (G)
14/335 . . . from Lactobacillus (G)
14/34 . . . from Corynebacterium (G)
14/345 . . . from Brevibacterium (G)
14/35 . . . from Mycobacteriaceae (F)
14/355 . . . from Nocardia (G)
14/36 . . . from Actinomycyes; from Streptomyces (G)
14/365 . . . from Actinoplanes (G)
14/37 . . . from fungi
14/375 . . . from Basidiomycetes
14/38 . . . from Aspergillus
14/385 . . . from Penicillium
14/39 . . . from yeasts
14/395 . . . from Saccharomyces
14/40 . . . from Candida
14/405 . . . from algae
14/41 . . . from lichens
14/415 . . . from plants
14/42 . . . Lectins, e.g. concanavalin, phytohaemagglutinin
14/425 . . . Zeins
14/43 . . . {Sweetening agents, e.g.} thaumatin, {monellin}
14/435 . . . from animals; from humans
14/43504 . . . {from invertebrates}
14/43509 . . . {from crustaceans}
14/43513 . . . {from arachnidae}
14/43518 . . . {from spiders}
14/43522 . . . {from scorpions}
14/43527 . . . {from ticks}
14/43531 . . . {from mites}
14/43536 . . . {from worms}
14/4354 . . . {from nematodes}
14/43545 . . . {from Caenorhabditis}
14/4355 . . . {from cestodes}
14/43555 . . . {from Taenia}
14/43559 . . . {from trematodes}
14/43563 . . . {from insects}
14/43568 . . . {from wasps}
14/43572 . . . {from bees}
14/43577 . . . {from flies}
14/43581 . . . {from Drosophila}
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}
14/4706 . . . {Guanosine triphosphatase activating protein, GAP}
14/4707 . . . {Muscular dystrophy}
14/4708 . . . {Duchenne dystrophy}
14/471 . . . {Myotonic dystrophy}
14/4711 . . . {Alzheimer's disease; Amyloid plaque core protein}
14/4712 . . . {Cystic fibrosis}
14/4713 . . . {Autoimmune diseases, e.g. Insulin-dependent diabetes mellitus, multiple sclerosis, rheumatoid arthritis, systemic lupus erythematosus; Autoantigens}
14/4715 . . . {Pregnancy proteins, e.g. placenta proteins, alpha-feto-protein, pregnancy specific beta glycoprotein}
14/4716 . . . {Muscle proteins, e.g. myosin, actin}
14/4717 . . . {Plasma globulins, lactoglobulin}
14/4718 . . . {Cytokine-induced proteins}
14/472 . . . {Complement proteins, e.g. anaphylatoxin, C3a, C5a}
14/4721 . . . {Lipocortins}
14/4722 . . . {G-proteins}
14/4723 . . . {Cationic antimicrobial peptides, e.g. defensins}
14/4725 . . . {Proteoglycans, e.g. aggrecan}
14/4726 . . . {Lectins}
14/4727 . . . {Mucins, e.g. human intestinal mucin}
14/4728 . . . {Calcium binding proteins, e.g. calmodulin}
14/473 . . . {alpha-Glycoproteins}
14/4731 . . . {Recognins, e.g. malignin}
14/4732 . . . {Casein (in foodstuffs A23J}
14/4733 . . . {Acute pancreatitis-associated protein}
14/4735 . . . {Villin}
14/4736 . . . {Retinoblastoma protein}
14/4737 . . . {C-reactive protein}
14/4738 . . . {Cell cycle regulated proteins, e.g. cyclin, CDC, INK-CCR (cell cycle dependent kinases C12N 9/12)}
14/474 . . . {Pancreatic thread protein; Reg protein}
14/4741 . . . {Keratin; Cytokeratin}
14/4742 . . . {Bactericidal/Permeability-increasing protein [BPI]}
14/4743 . . . {Insulin-like growth factor binding protein}
14/4745 . . . {Cancer-associated SCM-recognition factor, CRISPP}
14/4746 . . . {p53}
14/4747 . . . {Apoptosis related proteins}
14/4748 . . . {Tumour specific antigens; Tumour rejection antigen precursors [TRAP], e.g. MAGE}
14/475 . . . Growth factors; Growth regulators
14/4753 . . . {Hepatocyte growth factor; Scatter factor; Tumor cytotoxic factor II}
14/4756 . . . {Neuregulins, i.e. p185erbB2 ligands, glial growth factor, heregulin, ARIA, neu differentiation factor}
14/48 . . . Nerve growth factor [NGF]
14/485 . . . Epidermal growth factor [EGF] (urogastrone)
14/49 . . . Platelet-derived growth factor [PDGF]
14/495 . . . Transforming growth factor [TGF]
14/50 . . . Fibroblast growth factors [FGF]
14/501 . . . {acidic FGF [aFGF]}
14/503 . . . {basic FGF [bFGF]}

C07K
C07K

14/505 . . . Erythropoietin [EPO]
14/51 . . . Bone morphogenetic factor; Osteogenins; Osteogenic factor; Bone-inducing factor
14/515 . . . Angiogenic factors; Angiogenin
14/52 . . . Cytokines; Lymphokines; Interferons
14/521 . . . [Chemokines]
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, PBF, PF-4, KC]
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]
14/524 . . . [Thrombopoietin, i.e. C-MPL ligand]
14/525 . . . Tumour necrosis factor [TNF]
14/5255 . . . [Lymphtoxin [LT]]
14/53 . . . Colony-stimulating factor [CSF]
14/535 . . . Granulocyte CSF; Granulocyte-macrophage CSF
14/54 . . . Interleukins [IL]
14/5403 . . . [IL-3]
14/5406 . . . [IL-4]
14/5409 . . . [IL-5]
14/5412 . . . [IL-6]
14/5415 . . . [Leukaemia inhibitory factor [LIF]]
14/5418 . . . [IL-7]
14/5421 . . . [IL-8]
14/5425 . . . [IL-9]
14/5428 . . . [IL-10]
14/5431 . . . [IL-11]
14/5434 . . . [IL-12]
14/5437 . . . [IL-13]
14/544 . . . . [IL-14]
14/5443 . . . [IL-15]
14/5446 . . . [IL-16]
14/545 . . . [IL-1]
14/55 . . . [IL-2]
14/555 . . . Interferons [IFN]
14/56 . . . IFN-alpha
14/565 . . . IFN-beta
14/57 . . . IFN-gamma
14/575 . . . Hormones (derived from pro-opiomelanocortin, pro-enkephalin or pro-dynorphin C07K 14/665, e.g. corticotropin C07K 14/695)
14/57509 . . . [Corticotropin releasing factor [CRF] (Urotensin)]
14/57518 . . . [Placental lactogen; Chorionic somatomammotropin]
14/57527 . . . [Calcitonin gene related peptide]
14/57536 . . . [Endothelin, vasoactive intestinal contractor [VIC]]
14/57545 . . . [Neuropeptide Y]
14/57554 . . . [Prolactin]
14/5756 . . . [Vasoactive intestinal peptide [VIP]; Related peptides]
14/57572 . . . [Gastrin releasing peptide (bombesin C07K 7086)]
14/57581 . . . [Thymosin; Related peptides]
14/5759 . . . [Products of obesity genes, e.g. leptin, obese (OB), tub, fat]

14/58 . . . Atrial natriuretic factor complex; Atriopeptin; Atrial natriuretic peptide [ANP]; Cardionatin; Cardiodilatin
14/582 . . . [at least 1 amino acid in D-form]
14/585 . . . Calcitonins
14/5855 . . . [at least 1 amino acid in D-form]
14/59 . . . Follicle-stimulating hormone [FSH]; Chorionic gonadotropins, e.g. HCG; Luteinising hormone [LH]; Thyroid-stimulating hormone [TSH]
14/592 . . . [at least 1 amino acid in D-form]
14/595 . . . Gastrins; Cholecystokinins [CCK]
14/5955 . . . [at least 1 amino acid in D-form]
14/60 . . . Growth-hormone releasing factors (GH-RF) (Somatolithin)
14/605 . . . Glucagon
14/61 . . . Growth hormones [GH] (Somatotropin)
14/615 . . . Extraction from natural sources
14/62 . . . Insulins
14/622 . . . [at least 1 amino acid in D-form]
14/625 . . . Extraction from natural sources
14/63 . . . Motilins
14/635 . . . Parathyroid hormone (parathormone); Parathyroid hormone-related peptides
14/64 . . . Relaxins
14/645 . . . Secretins
14/65 . . . Insulin-like growth factors (Somatomedin), e.g. IGF-1, IGF-2
14/655 . . . Somatostatins
14/6555 . . . [at least 1 amino acid in D-form]
14/66 . . . Thymopoietins
14/662 . . . [at least 1 amino acid in D-form]
14/665 . . . derived from pro-opiomelanocortin, pro-enkephalin or pro-dynorphin
14/67 . . . Lipotropins, e.g. beta, gamma lipotropin
14/672 . . . [with at least 1 amino acid in D-form]
14/675 . . . Beta-endorphins
14/6755 . . . [with at least 1 amino acid in D-form]
14/68 . . . Melanocyte-stimulating hormone [MSH]
14/685 . . . Alpha-melanotropin
14/69 . . . Beta-melanotropin
14/695 . . . Corticotropin [ACTH]
14/6955 . . . [with at least 1 amino acid in D-form]
14/70 . . . Enkephalins
14/702 . . . [with at least 1 amino acid in D-form]
14/705 . . . Receptors; Cell surface antigens; Cell surface determinants (tumour specific antigens C07K 14/47481)
14/70503 . . . [Immunoglobulin superfamily]
14/70507 . . . [CD2]
14/7051 . . . [T-cell receptor (TcR)-CD3 complex]
14/70514 . . . [CD4]
14/70517 . . . [CD8]
14/70521 . . . [CD28, CD152]
14/70525 . . . [ICAM molecules, e.g. CD50, CD54, CD102]
14/70528 . . . [CD58]
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]
{ Porphyrin- or corrin-ring-containing peptides }
{ Endopeptidase (E.C. 3.4.21-99) inhibitors }
{ Exopeptidase (E.C. 3.4.11-19) inhibitors }
Haemoglobins; Myoglobins
Cytochromes
Transferrins, e.g. lactoferrins, ovotransferrins
Alveolar surfactant peptides; Pulmonary globulin [CIG]
Connective tissue peptides, e.g. collagen, elastin, apolipoproteins
Albumins
Blood coagulation or fibrinolysis factors
{ Serine protease (E.C. 3.4.21) inhibitors }
Factors VIII { , e.g. factor VIII C (AHF), factor VIII Ag (VWF) }
{ Thrombomodulin }
{ Integrin beta1-subunit-containing molecules, e.g. CD29, CD49 }
{ Integrin beta2-subunit-containing molecules, e.g. CD11, CD18 }
{ Integrin beta3-subunit-containing molecules, e.g. CD41, CD51, CD61 }
{ Lectin superfamily, e.g. CD23, CD72 }
{ Selectins, e.g. CD62 }
{ Nuclear receptors, e.g. retinoic acid receptor [RAR], RXR, nuclear orphan receptors }
{ NGF/TNF-superfamily, e.g. CD70, CD95L, CD153, CD154 (NGF-C07K 14/48, TNF C07K 14/525) }
{ NGF-receptor/TNF-receptor superfamily, e.g. CD27, CD30, CD40, CD95 (NGF-receptor C07K 14/71, TNF-receptor C07K 14/7151) }
{ Growth factors; growth regulators }
{ Colony-stimulating factors [CSF] }
{ Interleukins [IL] }
{ Interferons [IFN] }
{ Chemokines }
{ Hormones }([for neuromediators C07K 16/468]
{ Steroid/thyroid hormone superfamily, e.g. GR, EcR, androgen receptor, oestrogen receptor }
{ G protein coupled receptor, e.g. TSHR-thyrotropin-receptor, LH/hCG receptor, FSH receptor }
{ Blood coagulation or fibrinolysis factors }
{ Thrombomodulin }
Fibrinogen
Factors VIII { , e.g. factor VIII C (AHF), factor VIII Ag (VWF) }
{ Albumins }
{ Serum albumin, e.g. HSA }
{ Ovalbumin }
{ Apolipoproteins }
Connective tissue peptides, e.g. collagen, elastin, laminin, fibronecin, vitronectin, cold insoluble globulin [CIG]
{ Alveolar surfactant peptides; Pulmonary surfactant peptides }
{ Transferrins, e.g. lactoferrins, ovotransferrins }
{ Porphyrin- or corrin-ring-containing peptides }
{ Cytochromes }
{ Haemoglobins; Myoglobins }
{ Protease inhibitors }
{ [Exopeptidase (E.C. 3.4.11-19) inhibitors ] }
{ Endopeptidase (E.C. 3.4.21-99) inhibitors }
{ Serine protease (E.C. 3.4.21) inhibitors }
{ Kunitz type inhibitors }
{ Bovine/basic pancreatic trypsin inhibitor (BPTI, aprotinin) }
{ Serpins }
{ Alpha-1-antitrypsin }
{ Antithrombin III }
{ Plasminogen activator inhibitors }
{ Kazal type inhibitors, e.g. pancreatic secretory inhibitor, ovomucoid }
{ Cysteine protease (E.C. 3.4.22) inhibitors, e.g. cystatin }
{ Aspartate protease (E.C. 3.4.23) inhibitors, e.g. HIV protease inhibitors }
{ Metalloprotease (E.C. 3.4.24) inhibitors, e.g. tissue inhibitor of metallo proteinase, TIMP }
{ from leeches, e.g. hirudin, eglin }
{ Translation products from oncogenes }
{ 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, e.g. cytomegalovirus]
16/10 . from RNA viruses [ , e.g. hepatitis E virus ]
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. gp17, 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]
against material from animals or humans
against receptors, cell surface antigens or cell surface determinants
against the immunoglobulin superfamily
against the T-cell receptor (TcR)-CD3 complex
against translation products of oncogenes
against blood group antigens
against blood coagulation factors
against protease inhibitors of peptide structure
against enzymes
against hormones (for antibodies against hormone receptors (for antibodies against neuromediator receptors
against muscle and connective tissue, e.g. myofibers, collagen, elastin
against blood coagulation factors
against blood group antigens
against translation products of oncogenes
against growth factors and their receptors
against neuromediator receptors, e.g. serotonin receptor, dopamine receptor
against neuromediators, e.g. acetylcholine, norepinephrine
against selectins, e.g. CD62
against ICAM molecules, e.g. CD50, CD54, CD102
against CD58
against B7 molecules, e.g. CD80, CD86
against Fe-receptors, e.g. CD16, CD32, CD64 (CD23 C07K 16/2851)
against MHC-molecules, e.g. HLA-molecules
against CD106
against the integrin superfamily
against integrin beta1-subunit-containing molecules, e.g. CD29, CD49
against integrin beta2-subunit-containing molecules, e.g. CD11, CD18
against integrin beta3-subunit-containing molecules, e.g. CD41, CD51, CD61
against the lectin superfamily, e.g. CD23, CD72
against selectins, e.g. CD62
against nuclear receptors, e.g. retinoic acid receptor [RAR], RXR, orphan receptor
against neurone mediators, e.g. serotonin receptor, dopamine receptor
against receptors for growth factors, growth regulators
against receptors for cytokines, lymphokines, interferons
against hormone receptors (for antibodies against neuromediator receptors
against hormone releasing or inhibiting factors
against tumour-associated molecules
against CD71
against CD44
against CD20
against CD45
against CD52
against molecules with a "CD"-designation, not provided for elsewhere
from tumour cells
from reproductive system, e.g. ovary, uterus, testes, prostate
from structure-related tumour-associated moieties
from tumour-associated gangliosides
from tumour-associated mucins
against translation products of oncogenes
against blood group antigens
against blood coagulation factors
against protease inhibitors of peptide structure
against enzymes
against CD28 or CD152
from Gram-negative bacteria
from Spirochaetales (O), e.g. Treponema, Leptospira
from Helicobacter (Campylobacter) (G)
from Pseudomonadaceae (F)
from Neisseriaceae (F), e.g. Acinetobacter
from Brucella (G)
from Bordetella (G)
from Enterobacteriaceae (F), e.g. Citrobacter, Serratia, Proteus, Providencia, Morganella, Yersinia
from Escherichia (G)
from Salmonella (G)
from Vibrio (G)
from Pasteurellaceae (F), e.g. Haemophilus influenza
from Rickettsiales (O)
from Chlamydiales (O)
from Mycoplasmatales, e.g. Pleuropneumonia-like organisms [PPLO]
from Bacteriidae (F)
from Legionella (G)
from Rhizobiaceae (F)
from Gram-positive bacteria
from Micrococcae (F), e.g. Staphylococcus
from Streptococcus (G)
from Bacillus (G)
from Clostridium (G)
from Corynebacterium (G)
from Mycobacteriaceae (F)
from Actinomyces; from Streptomyces (G)
from Listeria
against material from fungi, algae or lichens
against material from plants
against material from animals or humans
from protozoa
[Plasmodium]
against growth factors (for antibodies against growth regulators)
against cytokines, lymphokines or interferons
{Tumor Necrosis Factors
[Lymphotoxin [LT]]
[Colony Stimulating Factors]
[Interleukins [IL]]
(IL-1)
(IL-2)
(IL-4)
(IL-6)
[Interferons]
against hormones (for antibodies against hormone releasing or inhibiting factors)
against receptors, cell surface antigens or cell surface determinants
against the immunoglobulin superfamily
against CD2
against the T-cell receptor (TcR)-CD3 complex
against CD4
against CD8
against CD28 or CD152
C07K

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 elsewhere { e.g. haptns, 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

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 camelds, 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
2317/36 . 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)'2
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 . Agonisot 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 endoplasmatic reticulum [ER] or the Golgi apparatus
2317/82 . functional in the cytoplasm, the inner aspect of the cell membrane, the nucleus or the mitochondrion
2317/90 . characterized by (pharmacokinetic) aspects or by stability of the immunoglobulin
cpc - 2019.08
Antibody mimetics or scaffolds

- Immunoglobulin or domain(s) thereof as scaffolds for inserted non-Ig peptide sequences, e.g. for vaccination purposes
- Antigen-binding scaffold molecules wherein the scaffold is not an immunoglobulin variable region or antibody mimetics

Fusion polypeptide

- containing a localisation/targetting motif
- containing a signal sequence
- containing a transmembrane segment
- containing a motif for targeting to the internal surface of the plasma membrane, e.g. containing a myristoylation motif
- containing a motif for targeting to the periplasmic space of Gram negative bacteria as a soluble protein, i.e. signal sequence should be cleaved
- 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
- targeting to the medium outside of the cell, e.g. type III secretion
- containing an ER retention signal such as a C-terminal HDEL motif
- containing a GOLGI retention signal
- containing a signal for localisation to secretory granules (for exocytosis)
- containing a lysosomal/endosomal localisation signal
- containing a mitochondrial localisation signal
- containing a chloroplasts localisation signal
- containing a nuclear localisation signal
- containing a nuclear export signal
- containing a tag for extracellular membrane crossing, e.g. TAT or VP22
- containing a tag with affinity for a non-protein ligand
- containing a His-tag
- containing a Strep-tag
- containing a GST-tag
- containing a MBP (maltose binding protein)-tag
- Non-immunoglobulin-derived peptide or protein having an immunoglobulin constant or Fc region, or a fragment thereof, attached thereto
- fusions, other than Fc, for prolonged plasma life, e.g. albumin
- fusions with soluble part of a cell surface receptor, “decoy receptors”
- fusions for targeting to specific cell types, e.g. tissue specific targeting, targeting of a bacterial subspecies
- containing a fusion for enhanced stability/folding during expression, e.g. fusions with chaperones or thioredoxin
- containing a tag for immunodetection, or an epitope for immunisation
- containing a Myc-tag
- containing a HA(hemagglutinin)-tag
- containing a FLAG-tag