

Symbol	Typ	Titel
C	Sektion	SECTION C — CHEMISTRY; METALLURGY
C12	Klasse	BIOCHEMISTRY; BEER; SPIRITS; WINE; VINEGAR; MICROBIOLOGY; ENZYMOLOGY; MUTATION OR GENETIC ENGINEERING
C12N	Unterklasse	MICRO-ORGANISMS OR ENZYMES; COMPOSITIONS THEREOF (biocides, pest repellants or attractants, or plant growth regulators containing micro-organisms, viruses, microbial fungi, enzymes, fermentates, or substances produced by, or extracted from, micro-organisms or animal material A01N 63/00; food compositions A21, A23; medicinal preparations A61K; chemical aspects of, or use of materials for, bandages, dressings, absorbent pads or surgical articles A61L; fertilisers C05); PROPAGATING, PRESERVING, OR MAINTAINING MICRO-ORGANISMS (preservation of living parts of humans or animals A01N 1/02); MUTATION OR GENETIC ENGINEERING; CULTURE MEDIA (microbiological testing media C12Q) [3]
C12N 1/00	Hauptgruppe	Micro-organisms, e.g. protozoa; Compositions thereof (medicinal preparations containing material from protozoa, bacteria or viruses A61K 35/66, from algae A61K 36/02, from fungi A61K 36/06; preparing medicinal bacterial antigen or antibody compositions, e.g. bacterial vaccines, A61K 39/00); Processes of propagating, maintaining or preserving micro-organisms or compositions thereof; Processes of preparing or isolating a composition containing a micro-organism; Culture media therefor [3]
C12N 1/02	1-Punkt Untergruppe	. Separating micro-organisms from their culture media [3]
C12N 1/04	1-Punkt Untergruppe	. Preserving or maintaining viable micro-organisms (immobilised micro-organisms C12N 11/00) [3]
C12N 1/06	1-Punkt Untergruppe	. Lysis of micro-organisms [3]
C12N 1/08	1-Punkt Untergruppe	. Reducing the nucleic acid content [3]
C12N 1/10	1-Punkt Untergruppe	. Protozoa; Culture media therefor [3]
C12N 1/11	2-Punkt Untergruppe	. . modified by introduction of foreign genetic material [5]
C12N 1/12	1-Punkt Untergruppe	. Unicellular algae; Culture media therefor (culture of multi-cellular plants A01G; as new plants A01H 13/00) [3]
C12N 1/13	2-Punkt Untergruppe	. . modified by introduction of foreign genetic material [5]
C12N 1/14	1-Punkt Untergruppe	. Fungi (culture of mushrooms A01G 1/04; as new plants A01H 15/00); Culture media therefor [3]
C12N 1/15	2-Punkt Untergruppe	. . modified by introduction of foreign genetic material [5]
C12N 1/16	2-Punkt Untergruppe	. . Yeasts; Culture media therefor [3]
C12N 1/18	3-Punkt Untergruppe	. . . Baker's yeast; Brewer's yeast [3]
C12N 1/19	3-Punkt Untergruppe	. . . modified by introduction of foreign genetic material [5]
C12N 1/20	1-Punkt Untergruppe	. Bacteria; Culture media therefor [3]
C12N 1/21	2-Punkt Untergruppe	. . modified by introduction of foreign genetic material [5]
C12N 1/22	1-Punkt Untergruppe	. Processes using, or culture media containing, cellulose or hydrolysates thereof [3]
C12N 1/24	1-Punkt Untergruppe	. Processes using, or culture media containing, waste sulfite liquor [3]
C12N 1/26	1-Punkt Untergruppe	. Processes using, or culture media containing, hydrocarbons (refining of hydrocarbon oils by using micro-organisms C10G 32/00) [3]
C12N 1/28	2-Punkt Untergruppe	. . aliphatic [3]
C12N 1/30	3-Punkt Untergruppe	. . . having five or less carbon atoms [3]

Symbol	Typ	Titel
C12N 1/32	1-Punkt Untergruppe	. Processes using, or culture media containing, lower alkanols, i.e. C ₁ to C ₆ [3]
C12N 1/34	1-Punkt Untergruppe	. Processes using foam culture [3]
C12N 1/36	1-Punkt Untergruppe	. Adaptation or attenuation of cells [3]
C12N 1/38	1-Punkt Untergruppe	. Chemical stimulation of growth or activity by addition of chemical compounds which are not essential growth factors; Stimulation of growth by removal of a chemical compound (C12N 1/34 takes precedence) [3]
C12N 3/00	Hauptgruppe	Spore-forming or isolating processes [3]
C12N 5/00	Hauptgruppe	Undifferentiated human, animal or plant cells, e.g. cell lines; Tissues; Cultivation or maintenance thereof; Culture media therefor (plant reproduction by tissue culture techniques A01H 4/00) [3, 5]
C12N 5/02	1-Punkt Untergruppe	. Propagation of single cells or cells in suspension; Maintenance thereof; Culture media therefor [3]
C12N 5/04	1-Punkt Untergruppe	. Plant cells or tissues [5]
C12N 5/06	1-Punkt Untergruppe	. Animal cells or tissues [5]
C12N 5/08	1-Punkt Untergruppe	. Human cells or tissues [5]
C12N 5/10	1-Punkt Untergruppe	. Cells modified by introduction of foreign genetic material, e.g. virus-transformed cells [5]
C12N 5/12	2-Punkt Untergruppe	. . Fused cells, e.g. hybridomas [5]
C12N 5/14	3-Punkt Untergruppe	. . . Plant cells [5]
C12N 5/16	3-Punkt Untergruppe	. . . Animal cells [5]
C12N 5/18	4-Punkt Untergruppe	. . . . Murine cells, e.g. mouse cells [5]
C12N 5/20	5-Punkt Untergruppe	. . . . . one of the fusion partners being a B lymphocyte [5]
C12N 5/22	3-Punkt Untergruppe	. . . Human cells [5]
C12N 5/24	4-Punkt Untergruppe	. . . . one of the fusion partners being a B lymphocyte [5]
C12N 5/26	3-Punkt Untergruppe	. . . Cells resulting from interspecies fusion [5]
C12N 5/28	4-Punkt Untergruppe	. . . . one of the fusion partners being a human cell [5]
C12N 7/00	Hauptgruppe	Viruses, e.g. bacteriophages; Compositions thereof; Preparation or purification thereof (medicinal preparations containing viruses A61K 35/76; preparing medicinal viral antigen or antibody compositions, e.g. virus vaccines, A61K 39/00) [3]
C12N 7/01	1-Punkt Untergruppe	. Viruses, e.g. bacteriophages, modified by introduction of foreign genetic material (vectors C12N 15/00) [5]
C12N 7/02	1-Punkt Untergruppe	. Recovery or purification [3]
C12N 7/04	1-Punkt Untergruppe	. Inactivation or attenuation; Producing viral sub-units [3]
C12N 7/06	2-Punkt Untergruppe	. . by chemical treatment [3]
C12N 7/08	2-Punkt Untergruppe	. . by serial passage of virus [3]
C12N 9/00	Hauptgruppe	Enzymes, e.g. ligases (6.); Proenzymes; Compositions thereof (preparations containing enzymes for cleaning teeth A61K 8/66, A61Q 11/00; medicinal preparations containing enzymes or proenzymes A61K 38/43; enzyme containing detergent compositions C11D); Processes for preparing, activating, inhibiting, separating, or purifying enzymes (preparation of malt C12C 1/00) [3]
C12N 9/02	1-Punkt Untergruppe	. Oxidoreductases (1.), e.g. luciferase [3]
C12N 9/04	2-Punkt Untergruppe	. . acting on CHOH groups as donors, e.g. glucose oxidase, lactate dehydrogenase (1.1) [3]

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C12N 9/06	2-Punkt Untergruppe	. . acting on nitrogen containing compounds as donors (1.4, 1.5, 1.7) [3]
C12N 9/08	2-Punkt Untergruppe	. . acting on hydrogen peroxide as acceptor (1.11) [3]
C12N 9/10	1-Punkt Untergruppe	. Transferases (2.) (ribonucleases C12N 9/22) [3]
C12N 9/12	2-Punkt Untergruppe	. . transferring phosphorus containing groups, e.g. kinases (2.7) [3]
C12N 9/14	1-Punkt Untergruppe	. Hydrolases (3.) [3]
C12N 9/16	2-Punkt Untergruppe	. . acting on ester bonds (3.1) [3]
C12N 9/18	3-Punkt Untergruppe	. . . Carboxylic ester hydrolases [3]
C12N 9/20	4-Punkt Untergruppe	. . . . Triglyceride splitting, e.g. by means of lipase [3]
C12N 9/22	3-Punkt Untergruppe	. . . Ribonucleases [3]
C12N 9/24	2-Punkt Untergruppe	. . acting on glycosyl compounds (3.2) [3]
C12N 9/26	3-Punkt Untergruppe	. . . acting on alpha-1, 4-glycosidic bonds, e.g. hyaluronidase, invertase, amylase [3]
C12N 9/28	4-Punkt Untergruppe	. . . . Alpha-amylase from microbial source, e.g. bacterial amylase [3]
C12N 9/30	5-Punkt Untergruppe	. . . . . Fungal source [3]
C12N 9/32	4-Punkt Untergruppe	. . . . Alpha-amylase from plant source [3]
C12N 9/34	4-Punkt Untergruppe	. . . . Glucoamylase [3]
C12N 9/36	3-Punkt Untergruppe	. . . acting on beta-1, 4 bonds between N-acetylmuramic acid and 2-acetylamino 2-deoxy-D-glucose, e.g. lysozyme [3]
C12N 9/38	3-Punkt Untergruppe	. . . acting on beta-galactose-glycoside bonds, e.g. beta-galactosidase [3]
C12N 9/40	3-Punkt Untergruppe	. . . acting on alpha-galactose-glycoside bonds, e.g. alpha-galactosidase [3]
C12N 9/42	3-Punkt Untergruppe	. . . acting on beta-1, 4-glycosidic bonds, e.g. cellulase [3]
C12N 9/44	3-Punkt Untergruppe	. . . acting on alpha-1, 6-glycosidic bonds, e.g. isoamylase, pullulanase [3]
C12N 9/46	4-Punkt Untergruppe	. . . . Dextranase [3]
C12N 9/48	2-Punkt Untergruppe	. . acting on peptide bonds, e.g. thromboplastin, leucine aminopeptidase (3.4) [3]
C12N 9/50	3-Punkt Untergruppe	. . . Proteinases [3]
C12N 9/52	4-Punkt Untergruppe	. . . . derived from bacteria [3]
C12N 9/54	5-Punkt Untergruppe	. . . . . bacteria being Bacillus [3]
C12N 9/56	6-Punkt Untergruppe	. . . . . Bacillus subtilis or Bacillus licheniformis [3]
C12N 9/58	4-Punkt Untergruppe	. . . . derived from fungi [3]
C12N 9/60	5-Punkt Untergruppe	. . . . . from yeast [3]
C12N 9/62	5-Punkt Untergruppe	. . . . . from Aspergillus [3]
C12N 9/64	4-Punkt Untergruppe	. . . . derived from animal tissue, e.g. rennin [3]
C12N 9/66	3-Punkt Untergruppe	. . . Elastase [3]

Symbol	Typ	Titel
C12N 9/68	3-Punkt Untergruppe	. . . Plasmin, i.e. fibrinolysin [3]
C12N 9/70	3-Punkt Untergruppe	. . . Streptokinase [3]
C12N 9/72	3-Punkt Untergruppe	. . . Urokinase [3]
C12N 9/74	3-Punkt Untergruppe	. . . Thrombin [3]
C12N 9/76	3-Punkt Untergruppe	. . . Trypsin; Chymotrypsin [3]
C12N 9/78	2-Punkt Untergruppe	. . acting on carbon to nitrogen bonds other than peptide bonds (3.5) [3]
C12N 9/80	3-Punkt Untergruppe	. . . acting on amide bonds in linear amides [3]
C12N 9/82	4-Punkt Untergruppe	. . . . Asparaginase [3]
C12N 9/84	4-Punkt Untergruppe	. . . . Penicillin amidase [3]
C12N 9/86	3-Punkt Untergruppe	. . . acting on amide bonds in cyclic amides, e.g. penicillinase [3]
C12N 9/88	1-Punkt Untergruppe	. Lyases (4.) [3]
C12N 9/90	1-Punkt Untergruppe	. Isomerases (5.) [3]
C12N 9/92	2-Punkt Untergruppe	. . Glucose isomerase [3]
C12N 9/94	1-Punkt Untergruppe	. Pancreatin [3]
C12N 9/96	1-Punkt Untergruppe	. Stabilising an enzyme by forming an adduct or a composition; Forming enzyme conjugates [3]
C12N 9/98	1-Punkt Untergruppe	. Preparation of granular or free-flowing enzyme compositions (C12N 9/96 takes precedence) [3]
C12N 9/99	1-Punkt Untergruppe	. Enzyme inactivation by chemical treatment [3]
C12N 11/00	Hauptgruppe	Carrier-bound or immobilised enzymes; Carrier-bound or immobilised microbial cells; Preparation thereof [3]
C12N 11/02	1-Punkt Untergruppe	. Enzymes or microbial cells being immobilised on or in an organic carrier [3]
C12N 11/04	2-Punkt Untergruppe	. . entrapped within the carrier, e.g. gel, hollow fibre [3]
C12N 11/06	2-Punkt Untergruppe	. . attached to the carrier <u>via</u> a bridging agent [3]
C12N 11/08	2-Punkt Untergruppe	. . the carrier being a synthetic polymer [3]
C12N 11/10	2-Punkt Untergruppe	. . the carrier being a carbohydrate [3]
C12N 11/12	3-Punkt Untergruppe	. . . Cellulose or derivatives thereof [3]
C12N 11/14	1-Punkt Untergruppe	. Enzymes or microbial cells being immobilised on or in an inorganic carrier [3]
C12N 11/16	1-Punkt Untergruppe	. Enzymes or microbial cells being immobilised on or in a biological cell [3]
C12N 11/18	1-Punkt Untergruppe	. Multi-enzyme systems [3]
C12N 13/00	Hauptgruppe	Treatment of micro-organisms or enzymes with electrical or wave energy, e.g. magnetism, sonic waves [3]
C12N 15/00	Hauptgruppe	Mutation or genetic engineering; DNA or RNA concerning genetic engineering, vectors, e.g. plasmids, or their isolation, preparation or purification; Use of hosts therefor (mutants or genetically engineered micro-organisms C12N 1/00, C12N 5/00, C12N 7/00; new plants A01H; plant reproduction by tissue culture techniques A01H 4/00; new animals A01K 67/00; use of medicinal preparations containing genetic material which is inserted into cells of the living body to treat genetic diseases, gene therapy A61K 48/00; peptides in general C07K) [3, 5, 6]

Symbol	Typ	Titel
C12N 15/01	1-Punkt Untergruppe	. Preparation of mutants without inserting foreign genetic material therein; Screening processes therefor [5]
C12N 15/02	1-Punkt Untergruppe	. Preparation of hybrid cells by fusion of two or more cells, e.g. protoplast fusion [5]
C12N 15/03	2-Punkt Untergruppe	. . Bacteria [5]
C12N 15/04	2-Punkt Untergruppe	. . Fungi [5]
C12N 15/05	2-Punkt Untergruppe	. . Plant cells [5]
C12N 15/06	2-Punkt Untergruppe	. . Animal cells [5]
C12N 15/07	2-Punkt Untergruppe	. . Human cells [5]
C12N 15/08	2-Punkt Untergruppe	. . Cells resulting from interspecies fusion [5]
C12N 15/09	1-Punkt Untergruppe	. Recombinant DNA-technology [5]
C12N 15/10	2-Punkt Untergruppe	. . Processes for the isolation, preparation or purification of DNA or RNA (chemical preparation of DNA or RNA C07H 21/00; preparation of non-structural polynucleotides from micro-organisms or with enzymes C12P 19/34) [5]
C12N 15/11	2-Punkt Untergruppe	. . DNA or RNA fragments; Modified forms thereof (DNA or RNA not used in recombinant technology C07H 21/00) [5]
C12N 15/12	3-Punkt Untergruppe	. . . Genes encoding animal proteins [5]
C12N 15/13	4-Punkt Untergruppe	. . . . Immunoglobulins [5]
C12N 15/14	4-Punkt Untergruppe	. . . . Human serum albumins [5]
C12N 15/15	4-Punkt Untergruppe	. . . . Protease inhibitors, e.g. antithrombin, antitrypsin, hirudin [5]
C12N 15/16	4-Punkt Untergruppe	. . . . Hormones [5]
C12N 15/17	5-Punkt Untergruppe	. . . . . Insulins [5]
C12N 15/18	5-Punkt Untergruppe	. . . . . Growth hormones [5]
C12N 15/19	4-Punkt Untergruppe	. . . . Interferons; Lymphokines; Cytokines [5]
C12N 15/20	5-Punkt Untergruppe	. . . . . Interferons [5]
C12N 15/21	6-Punkt Untergruppe	. . . . . Alpha-interferons [5]
C12N 15/22	6-Punkt Untergruppe	. . . . . Beta-interferons [5]
C12N 15/23	6-Punkt Untergruppe	. . . . . Gamma-interferons [5]
C12N 15/24	5-Punkt Untergruppe	. . . . . Interleukins [5]
C12N 15/25	6-Punkt Untergruppe	. . . . . Interleukin-1 [5]
C12N 15/26	6-Punkt Untergruppe	. . . . . Interleukin-2 [5]
C12N 15/27	5-Punkt Untergruppe	. . . . . Colony stimulating factors [5]
C12N 15/28	5-Punkt Untergruppe	. . . . . Tumor necrosis factors [5]
C12N 15/29	3-Punkt Untergruppe	. . . Genes encoding plant proteins, e.g. thaumatin [5]
C12N 15/30	3-Punkt Untergruppe	. . . Genes encoding protozoal proteins, e.g. from Plasmodium, Trypanosoma, Eimeria [5]

Symbol	Typ	Titel
C12N 15/31	3-Punkt Untergruppe	. . . Genes encoding microbial proteins, e.g. enterotoxins [5]
C12N 15/32	4-Punkt Untergruppe	. . . . Bacillus crystal proteins [5]
C12N 15/33	4-Punkt Untergruppe	. . . . Genes encoding viral proteins [5]
C12N 15/34	5-Punkt Untergruppe	. . . . . Proteins from DNA viruses [5]
C12N 15/35	6-Punkt Untergruppe	. . . . . Parvoviridae, e.g. feline panleukopenia virus, human parvovirus [5]
C12N 15/36	6-Punkt Untergruppe	. . . . . Hepadnaviridae [5]
C12N 15/37	6-Punkt Untergruppe	. . . . . Papovaviridae, e.g. papillomaviruses, polyomavirus, SV40 [5]
C12N 15/38	6-Punkt Untergruppe	. . . . . Herpetoviridae, e.g. herpes simplex virus, varicella-zoster virus, Epstein-Barr virus, cytomegalovirus, pseudorabies virus [5]
C12N 15/39	6-Punkt Untergruppe	. . . . . Poxviridae, e.g. vaccinia virus, variola virus [5]
C12N 15/40	5-Punkt Untergruppe	. . . . . Proteins from RNA viruses, e.g. flaviviruses [5]
C12N 15/41	6-Punkt Untergruppe	. . . . . Picornaviridae, e.g. rhinovirus, coxsackie viruses, echoviruses, enteroviruses [5]
C12N 15/42	7-Punkt Untergruppe	. . . . . Foot-and-mouth disease virus [5]
C12N 15/43	7-Punkt Untergruppe	. . . . . Poliovirus [5]
C12N 15/44	6-Punkt Untergruppe	. . . . . Orthomyxoviridae, e.g. influenza virus [5]
C12N 15/45	6-Punkt Untergruppe	. . . . . Paramyxoviridae, e.g. measles virus, mumps virus, Newcastle disease virus, canine distemper virus, rinderpest virus, respiratory syncytial viruses [5]
C12N 15/46	6-Punkt Untergruppe	. . . . . Reoviridae, e.g. rotavirus, bluetongue virus, Colorado tick fever virus [5]
C12N 15/47	6-Punkt Untergruppe	. . . . . Rhabdoviridae, e.g. rabies viruses, vesicular stomatitis virus [5]
C12N 15/48	6-Punkt Untergruppe	. . . . . Retroviridae, e.g. bovine leukaemia virus, feline leukaemia virus [5]
C12N 15/49	7-Punkt Untergruppe	. . . . . Lentiviridae, e.g. immunodeficiency viruses such as HIV, visna-maedi virus, equine infectious anaemia virus [5]
C12N 15/50	6-Punkt Untergruppe	. . . . . Coronaviridae, e.g. infectious bronchitis virus, transmissible gastroenteritis virus [5]
C12N 15/51	5-Punkt Untergruppe	. . . . . Hepatitis viruses [5]
C12N 15/52	3-Punkt Untergruppe	. . . Genes encoding for enzymes or proenzymes [5]
C12N 15/53	4-Punkt Untergruppe	. . . . Oxidoreductases (1) [5]
C12N 15/54	4-Punkt Untergruppe	. . . . Transferases (2) [5]
C12N 15/55	4-Punkt Untergruppe	. . . . Hydrolases (3) [5]
C12N 15/56	5-Punkt Untergruppe	. . . . . acting on glycosyl compounds (3.2), e.g. amylase, galactosidase, lysozyme [5]
C12N 15/57	5-Punkt Untergruppe	. . . . . acting on peptide bonds (3.4) [5]
C12N 15/58	6-Punkt Untergruppe	. . . . . Plasminogen activators, e.g. urokinase, TPA [5]
C12N 15/59	6-Punkt Untergruppe	. . . . . Chymosin [5]
C12N 15/60	4-Punkt Untergruppe	. . . . Lyases (4) [5]

Symbol	Typ	Titel
C12N 15/61	4-Punkt Untergruppe	. . . . Isomerases (5) [5]
C12N 15/62	3-Punkt Untergruppe	. . . DNA sequences coding for fusion proteins [5]
C12N 15/63	2-Punkt Untergruppe	. . Introduction of foreign genetic material using vectors; Vectors; Use of hosts therefor; Regulation of expression [5]
C12N 15/64	3-Punkt Untergruppe	. . . General methods for preparing the vector, for introducing it into the cell or for selecting the vector-containing host [5]
C12N 15/65	3-Punkt Untergruppe	. . . using markers (enzymes used as markers C12N 15/52) [5]
C12N 15/66	3-Punkt Untergruppe	. . . General methods for inserting a gene into a vector to form a recombinant vector using cleavage and ligation; Use of non-functional linkers or adaptors, e.g. linkers containing the sequence for a restriction endonuclease [5]
C12N 15/67	3-Punkt Untergruppe	. . . General methods for enhancing the expression [5]
C12N 15/68	4-Punkt Untergruppe	. . . . Stabilisation of the vector [5]
C12N 15/69	4-Punkt Untergruppe	. . . . Increasing the copy number of the vector [5]
C12N 15/70	3-Punkt Untergruppe	. . . Vectors or expression systems specially adapted for E. coli [5]
C12N 15/71	4-Punkt Untergruppe	. . . . Expression systems using regulatory sequences derived from the trp-operon [5]
C12N 15/72	4-Punkt Untergruppe	. . . . Expression systems using regulatory sequences derived from the lac-operon [5]
C12N 15/73	4-Punkt Untergruppe	. . . . Expression systems using phage lambda regulatory sequences [5]
C12N 15/74	3-Punkt Untergruppe	. . . Vectors or expression systems specially adapted for prokaryotic hosts other than E. coli, e.g. Lactobacillus, Micromonospora [5]
C12N 15/75	4-Punkt Untergruppe	. . . . for Bacillus [5]
C12N 15/76	4-Punkt Untergruppe	. . . . for Actinomyces; for Streptomyces [5]
C12N 15/77	4-Punkt Untergruppe	. . . . for Corynebacterium; for Brevibacterium [5]
C12N 15/78	4-Punkt Untergruppe	. . . . for Pseudomonas [5]
C12N 15/79	3-Punkt Untergruppe	. . . Vectors or expression systems specially adapted for eukaryotic hosts [5]
C12N 15/80	4-Punkt Untergruppe	. . . . for fungi [5]
C12N 15/81	5-Punkt Untergruppe	. . . . . for yeasts [5]
C12N 15/82	4-Punkt Untergruppe	. . . . for plant cells [5]
C12N 15/83	5-Punkt Untergruppe	. . . . . Viral vectors, e.g. cauliflower mosaic virus [5]
C12N 15/84	5-Punkt Untergruppe	. . . . . Ti-plasmids [5]
C12N 15/85	4-Punkt Untergruppe	. . . . for animal cells [5]
C12N 15/86	5-Punkt Untergruppe	. . . . . Viral vectors [5]
C12N 15/861	6-Punkt Untergruppe	. . . . . Adenoviral vectors [7]
C12N 15/863	6-Punkt Untergruppe Poxviral vectors, e.g. vaccinia virus [7]
C12N 15/864	6-Punkt Untergruppe Parvoviral vectors [7]

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C12N 15/866	6-Punkt Untergruppe Baculoviral vectors [7]
C12N 15/867	6-Punkt Untergruppe Retroviral vectors [7]
C12N 15/869	6-Punkt Untergruppe	. . . . . Herpesviral vectors [7]
C12N 15/87	2-Punkt Untergruppe	. . Introduction of foreign genetic material using processes not otherwise provided for, e.g. co-transformation [5]
C12N 15/88	3-Punkt Untergruppe	. . . using micro-encapsulation, e.g. using liposome vesicle [5]
C12N 15/89	3-Punkt Untergruppe	. . . using micro-injection [5]
C12N 15/90	3-Punkt Untergruppe	. . . Stable introduction of foreign DNA into chromosome [5]