CLASS 800, MULTICELLULAR LIVING ORGANISMS AND UNMODIFIED PARTS THEREOF AND RELATED PROCESSES

SECTION I - CLASS DEFINITION

This is the class for living multicellular organisms (nonhuman animals and plants) and separated or severed parts thereof that have not undergone any modification or treatment subsequent to their separation. These organisms or parts thereof may be genetically modified. This class also includes processes of producing said multicellular organisms and of using said organisms (nonhuman animals) in testing and protein production processes.

This class provides for the following products:

1. Living multicellular organisms, i.e., plants and nonhuman animals. Plants include multicellular algae, multicellular fungi, and higher and lower multicellular plant life.

2. Living multicellular organisms and living products: (a) derived from traditional or conventional breeding techniques; (b) derived from grafting processes; (c) derived from tissue culture techniques; and/or (d) derived from techniques which change the genetic makeup or affect the progeny of multicellular organisms.

(1) Note. Examples of traditional or conventional breeding techniques used in plants are self-pollination, inbreeding, cross-pollination, hybridization, selection, emasculation, cytoplasmic male sterility, etc.

(2) Note. Techniques which change the genetic makeup or affect progeny of multicellular organisms include genetic manipulations such as mutagenesis, protoplast cell fusion, and recombinant or transgenic processes.

(3) Note. Examples of tissue culture techniques used in plants are embryogenesis, organogenesis, etc.

3. Separated or severed parts of multicellular plants and transgenic nonhuman animals which have not been modified or treated subsequent to their separation.

(1) Note. Embryos, plantlets, flowers, leaves, seeds, differentiated tissue (i.e., specific organs), buds, meristems, shoots, roots, tubers, fruits, stems, cuttings, bulbs, corms, rhizomes, pollen, mycelium, spores, ascocarps, and sclerotia are considered unmodified plant parts for purposes of this class.

(2) Note. This class includes products obtained by modifications of multicellular living organisms and separated or severed parts thereof wherein the organism or part thereof is permanently changed (i.e., by genetic manipulation, by mutation, by cell fusion, or by tissue culture) so that subsequent progeny or offspring are likewise affected. This class also includes products obtained by modifications of multicellular living organisms and separated or severed parts thereof wherein the organism is permanently changed (i.e., by grafting) so that unique features or properties are conferred to the organism but its offspring are not affected, i.e., genetic lineage is not altered.

(3) Note. This class does not include modifications of multicellular living organisms and separated or severed parts thereof wherein the organism or product or part thereof is temporarily changed or treated by processes such as coating, impregnating, dyeing, bleaching, preserving, adhesive bonding, coloring, pitting, adding artificial limbs or grafting arteries, etc., i.e., subsequent genetic makeup and/or progeny of the organism will not be affected or changed and the organism and parts thereof will still retain its general structure and appearance.

(4) Note. A genetic modification encompasses any process of modification or alteration of the genes of an organism which will subsequently be passed on to its progeny (e.g., spontaneous and induced mutagenesis; normal cross-breeding and hybridization; recombination; etc.).

This class provides for the following processes:

Methods of plant breeding; methods of mutating plants; methods of producing plants using somatic cell fusion; and methods of introducing nucleic acid into or rearrangement of genetic material within a plant. All of these methods result in a living plant or plant part.

SECTION II - REFERENCES TO OTHER CLASSES

SEE OR SEARCH CLASS:

PLT, Plants, for plants which are patentable under 35 U.S. Code, Section 161, which provides for the granting of a patent to whoever invents or discovers and asexually reproduces any distinct and new variety of plant, including cultivated sports, mutants, hybrids, and newly found seedlings other than a tuber propagated plant or a plant found in an uncultivated state.

8, Bleaching and Dyeing; Fluid Treatment and Chemical Modification of Textiles and Fibers, appropriate subclasses for compositions and manipulative processes for treating animal or plant derived fibers and tissues wherein the animal or plant fiber or tissue may or may not be chemically modified. Search particularly subclasses 94.1+ for compositions and processes for the treatment of hides, skins, feathers and other animal tissues with chemicals and the resulting products thereof; subclasses 115.51+ and those indented thereunder for processes for the chemical modification of hair, cellulose fibers, natural wool, silk and other fibers and products thereof; subclasses 101+ for processes of bleaching animal or plant derived fibers or tissue, subclass 150.5 for the fluid treatment of hides, skins, or leather; subclass 402 for processes for dyeing wood and subclasses 404+ for processes and compositions for dyeing animal derived natural fiber material (e.g., leather, fur, hair, feathers, etc.) and products thereof.

47, Plant Husbandry, appropriate subclasses for apparatus and processes for cultivating plants, multicellular fungi and multicellular algae. Search particularly subclass 1.1 for apparatus and processes for culture of multicellular fungi and other edible mushrooms; subclass 1.4 for apparatus and method of fostering growth or cultivation of multicellular algae; subclass 1.41 for pollination methods and apparatus where the natural generation, propagation or reproduction of plant life is assisted by a discriminate or indiscriminate transfer of pollen to fertilize a plant flower; subclass 3 for methods of whitening growing celery; subclass 57.5 for processes and devices for injecting chemicals into living plants for various purposes, e.g., injecting coloring or preserving chemicals into trees to produce colored or preserved wood; subclass 57.6 for coated or impregnated seeds not provided for elsewhere; subclass 58.1 for plant husbandry methods which do not involve breeding or recombinant technology such as cultivation or planting methods, growing under certain environmental conditions, etc., and subclasses 59-64 for apparatus and processes for fostering growth beyond germination of plants in a nutrient medium and without soil, e.g., in an aquatic medium.

71, Chemistry: Fertilizers, appropriate subclasses for compositions and compounds which will alter plant growth as a response to a fertilizer action. Search subclass 5 for products of special value in cultivation of fungi (e.g., mushrooms, etc.).

119, Animal Husbandry, appropriate subclasses for processes and apparatus for the propagation, rearing and care of living animals (e.g., insects, fish, fowl, mammals, etc.). Search subclasses 204+ for a process or apparatus for care and propagation of a lobster, crab, or like aquatic crustacean, subclasses 215+ for a process or apparatus for care and propagation of fish, subclasses 234+ for a process or apparatus for propagation and care of an oyster, clam, or other aquatic mollusk, and subclass 270 for a process or apparatus employed in propagation and care of a worm or other form of a moth whose larvae produce silk.

156, Adhesive Bonding and Miscellaneous Chemical Manufacture, appropriate subclasses for processes and apparatus, including a step of adhesively bonding parts together. Search particularly subclass 57 for processes in which a plant or animal or part thereof is bonded to a support to maintain the natural appearance thereof.

424, Drug, Bio-Affecting and Body Treating Compositions, subclasses 1.11+ for in vivo diagnostic testing of nontransgenic animals and for diagnostic compositions used in said testing; and other appropriate subclasses for therapeutic treatment methods and compositions for treatment of living subjects.

426, Food or Edible Material: Processes, Compositions, and Products, appropriate subclasses for products and compositions of plant or animal origin in any physical form which are intended to be consumed by a human being or lower animal in whole or part via its oral cavity. Search particularly subclasses 7+ for fermentation processes wherein an enzyme or microorganism is employed biochemically to produce or perfect a food product or composition; subclasses 61 through 64 for edible products

which contain a ferment material in a dormant state which can be activated, food products which contain microorganisms or food products with an ongoing fermentation process and processes of preparing such products; subclass 2 for processes of treating a live animal, e.g., processes of feeding an animal or injecting the animal with chemicals to modify the meat characteristics of the animal followed by a slaughtering operation, etc.; subclasses 93+ for food products containing seeds which may be coated or encapsulated or material derived therefrom; subclasses 250+ for processes of coloring food materials, e.g., citrus fruits, beans, nuts, etc.; subclasses 253 through 261 for processes of removing color from food material; subclass 270 for processes of preserving or modifying the original color of a fruit or vegetable; subclasses 298+ for processes of treating an unshelled egg; subclass 309 for processes of coating a seed or bean with a liquid material; subclasses 331+ for processes of preserving animal flesh, citrus fruits, beans or cereal seeds; and subclasses 484+ for processes of removing a seed, pit, stem, or a core from a plant material.

427, Coating Processes, appropriate subclasses for processes of coating animals, plants and parts thereof. Search specifically subclass 4 for processes of applying a coating to a plant member or an animal specimen with intent to preserve the member or specimen near or in its natural state.

428, Stock Material or Miscellaneous Articles, appropriate subclasses for products of nature that have been modified by processes other than coating, dyeing or bleaching. Search particularly subclasses 15+ for products of nature that have been modified but retain their general structure and appearance; subclasses 85+ for treated animal skin with fur; subclasses 101, 191, 511+, and 528+ for composite products where wood is a component; subclass 270 for a product which contains hair of sheep or hair from an animal whose hair is similar to that of sheep and subclasses 540+ for products of nature like leather, wood, etc., that have been impregnated with an extraneous material.

435, Chemistry: Molecular Biology and Microbiology, appropriate subclasses for processes and apparatus for propagating microorganisms and undifferentiated animal or plant cells, for cultivation of tissue, maintenance of tissue or organs in a viable state, for microorganisms, per se, and subcellular parts thereof. Search particularly subclasses 440+ for mutation and genetic engineering processes where a stable change in an animal or plant cell or microorganism is produced by artificially inducing a structure change in a gene or by incorporation of genetic material from an outside source; subclasses 325+ for compositions, processes, and media for the maintenance or in vitro propagation of undifferentiated animal or plant cells or groups of cells; subclasses 243+ for microorganisms, per se, including unicellular fungi and unicellular algae, compositions thereof and processes of propagating, maintaining, isolating, or preserving and culture media therefore; and subclasses 174+ for processes where a microbial cell (e.g., bacteria, fungi, algae, animal, or plant cell, etc.) is bound to a carrier during a continuous biochemical process.

504, Plant Protecting and Regulating Compositions, subclasses 116.1 through 367 for compositions and compounds for treating living terrestrial and aquatic plants or their habitats for the purpose of stimulating, inhibiting or retarding growth, defoliating, or killing said plants, and the processes of using such compositions or compounds for such purposes which are not more than their mere application to the plant or habitat. The compositions or compounds included in this class will alter the plant growth through a chemical modification of the plant metabolism. Search particularly subclasses 150+ for compositions for retarding, inhibiting, or killing algae; subclasses 174+ for compositions used to suppress or retard the rate of growth or size of a plant; subclasses 184+ for compositions which inhibit, retard, destroy, or remove a sucker growth from a living plant. Class 504 also provides for seeds coated with agricultural chemicals other than fertilizers.

514, Drug, Bio-Affecting and Body Treating Compositions, subclass 44 for treating living subjects with a polynucleotide wherein the polynucleotide does not become a part of the germ cell line and is therefor not heritable.

600, Surgery, subclasses 33+ for reproduction and fertilization techniques.

623, Prosthesis (i.e., Artificial Body Members) Parts Thereof, or Aids and Accessories Therefor, appropriate subclasses for artificial substitutes or parts for a human body, particularly manufactured or adapted to substitute or assist a missing or defective natural body member or part thereof for functional or cosmetic pur-

poses. For purposes of Class 623, an artificial body member may include a natural other than human animal body part which has been treated or modified to produce a different type of replacement body part. An example is a graft usable for arteries, organs or skin which has been made from animal intestines or umbilical cord. Search particularly subclass 1 for artificial blood vessels; subclass 3 for an artificial heart, regulator, power supply, or method of operation thereof; subclass 5 for corneal implants; subclass 15 for inventions manufactured or adapted to replace skin or hair; and subclasses 18+ and 27+ for inventions manufactured or adapted to replace a limb or part thereof (e.g., hand, legs, knee, feet, etc.).

SUBCLASSES

3 METHOD OF USING A TRANSGENIC NONHUMAN ANIMAL IN AN IN VIVO TEST METHOD (E.G., DRUG EFFICACY TESTS, ETC.):

This subclass is indented under the class definition. Method wherein there is a direct or indirect qualitative or quantitative measurement or test involving a transgenic nonhuman animal where the actual test step must occur in or on the animal.

SEE OR SEARCH CLASS:

424, Drug, Bio-affecting and Body Treating Compositions, subclasses 9.1+ for in vivo testing involving non-transgenic animals including humans.

4 METHOD OF USING A TRANSGENIC NONHUMAN ANIMAL TO MANUFACTURE A PROTEIN WHICH IS THEN TO BE ISOLATED OR EXTRACTED:

This subclass is indented under the class definition. Method wherein a protein is expressed by at least some of the cells of a transgenic nonhuman animal and is then isolated or extracted from the animal.

(1) Note. This subclass provides for the case where the protein is encoded by an endogenous gene the expression of which is affected by a recombinant gene.

(2) Note. The terms purifying, obtaining, separating, removing, etc., are considered equivalent to extraction and isolation for purposes of this and indented subclasses. The protein may be separated from animal tissues (e.g., muscle, etc.) or animal products (e.g., hair, etc.).

(3) Note. If the recombinant gene is not present in the germ line cells, the animal is not transgenic, and the method would be classified elsewhere.

SEE OR SEARCH CLASS:

424, Drug, Bio-affecting and Body Treating Compositions, appropriate subclasses for methods of therapeutically treating an animal with physiologically active compounds or compositions which may result in the production of protein within the animal (e.g., vaccinating an animal in order to get it to produce antibodies which provide active immunity, etc.).

435, Chemistry: Molecular Biology and Microbiology, subclasses 69.1+ for a method of making a nonenzyme protein or polypeptide involving transgenic cells rather than the living transgenic animal; and subclasses 70.1+ for methods of producing a protein by nontransgenic cell or tissue culture. If the protein is an enzyme, subclasses 183+ are appropriate.

514, Drug, Bio-affecting and Body Treating Compositions, subclass 44 for the therapeutic treatment of an animal with a polynucleotide.

5 The protein is isolated or extracted from blood or serum:

This subclass is indented under subclass 4.
Method wherein the protein is isolated or extracted from blood or serum obtained from the animal.

6 The protein is an immunoglobulin:

This subclass is indented under subclass 5.
Method wherein the protein comprises at least one chain of an immunoglobulin.

(1) Note. For purposes of this subclass, immunoglobulins include antibodies,

single chain antibodies, members of the immunoglobulin classes (IgG, IgM, IgA, IgD, IgE), antigen-specific fragments of antibodies, etc.

7 The protein is isolated or extracted from milk:
This subclass is indented under subclass 4.
Method wherein the protein is isolated or extracted from milk obtained from the animal.

(1) Note. For purposes of this subclass, milk includes fluids secreted by mammary glands.

8 NONHUMAN ANIMAL:
This subclass is indented under the class definition. Subject matter which is a multicellular nonhuman animal.

9 The nonhuman animal is a model for human disease:
This subclass is indented under subclass 8.
Subject matter wherein the nonhuman animal mimics a human disease state either continuously or in response to a particular condition or treatment.

10 Cancer:
This subclass is indented under subclass 9.
Subject matter wherein the disease state is cancer.

11 Immunodeficiency disease:
This subclass is indented under subclass 9.
Subject matter wherein the disease state is immunodeficiency.

12 Alzheimer's disease:
This subclass is indented under subclass 9.
Subject matter wherein the disease state is Alzheimer's disease.

13 Transgenic nonhuman animal (e.g., mollusks, etc.):
This subclass is indented under subclass 8.
Subject matter wherein the nonhuman animal is transgenic.

(1) Note. A transgenic animal is one wherein new genetic information (e.g., foreign DNA, gene, etc.) has become integrated into the genomes of its germ line cells.

14 Mammal:
This subclass is indented under subclass 13.
Subject matter wherein the transgenic nonhuman animal is a mammal.

15 Bovine:
This subclass is indented under subclass 14.
Subject matter wherein the mammal is a bovine.

(1) Note. Bovine include members of the genus Bos e.g., cows, oxen, etc.

16 Sheep:
This subclass is indented under subclass 14.
Subject matter wherein the mammal is a sheep.

(1) Note. Sheep are members of the genus Ovis.

17 Swine:
This subclass is indented under subclass 14.
Subject matter wherein the mammal is a swine.

(1) Note. Swine are members of the family Suidae, e.g., domestic pigs, hogs, boars, etc.

18 Mouse:
This subclass is indented under subclass 14.
Subject matter wherein the mammal is a mouse.

(1) Note. Mice are members of the genus Mus, including the common domestic mouse, i.e., laboratory mouse.

19 Bird (e.g., chicken, etc.):
This subclass is indented under subclass 13.
Subject matter wherein the transgenic nonhuman animal is a bird.

(1) Note. Birds are members of the class Aves.

20 Fish:
This subclass is indented under subclass 13.
Subject matter wherein the transgenic nonhuman animal is a fish.

(1) Note. For the purposes of this subclass, fish include: teleosts, i.e., bony fish, e.g., trout, perch, etc.; elasmobranchi,

i.e., cartilaginous fish, e.g., shark, ray, etc.; and cyclostome, e.g., lamprey, hagfish, etc.

21 METHOD OF MAKING A TRANSGENIC NONHUMAN ANIMAL:

This subclass is indented under the class definition. Method wherein nucleic acid is stably inserted into nonhuman animal cells which are or become germ line cells of the nonhuman animal thereby producing a transgenic nonhuman animal, or wherein a cross is performed between nonhuman animals, where one or both are transgenic thereby producing a transgenic nonhuman animal.

SEE OR SEARCH CLASS:

424, Drug, Bio-affecting and Body Treating Compositions, subclass 93.21 for administering already genetically altered somatic cells into an animal.

514, Drug, Bio-affecting and Body Treating Compositions, subclass 44 for a method of genetically altering only somatic cells in an animal.

600, Surgery, subclasses 33+ for reproduction and fertilization techniques.

22 Involving breeding to produce a double transgenic nonhuman animal:

This subclass is indented under subclass 21. Method wherein a double transgenic animal results from a cross between two transgenic animals, such that a transgene from each parent is found in a resultant progeny animal.

(1) Note. A "transgene" is genetic material which is not wild type and which is present in the genome of germ line cells of an animal, as a result of insertion of said genetic material into the germ line cells of that animal or one of its progenitors.

(2) Note. A "cross" is a sexual hybridization, i.e., a mating or breeding.

(3) Note. The transgenes inherited from transgenic parents may be at different chromosomal loci or may be at the same chromosomal locus, on different copies of the same chromosome, i.e., as alleles.

23 Via retrovirus:

This subclass is indented under subclass 21. Method wherein the nucleic acid is or is carried by a retrovirus.

(1) Note. The use of a vector which functions as a retrovirus, i.e., a "retroviral vector," is appropriate for this subclass.

24 Via microinjection of a nucleus into an embryo, egg cell, or embryonic cell:

This subclass is indented under subclass 21. Method wherein the nucleic acid is contained within an intact nucleus, and said nucleus is microinjected into an isolated cell which is an egg cell or embryonic cell (e.g., embryonic stem cell, etc.) or a cell which is part of an embryo, and which cell is, or becomes, the germ line cell.

(1) Note. The original nucleus of the microinjected cell may or may not remain.

(2) Note. "Microinjection" involves injection into the cell through a very small diameter tube, needle, or micropipet.

25 Via microinjection of DNA into an embryo, egg cell or embryonic cell:

This subclass is indented under subclass 21. Method wherein DNA (deoxyribonucleic acid) is microinjected into an isolated cell which is an egg cell or embryonic cell (e.g., embryonic stem cell, etc.) or a cell which is part of an embryo, and which cell is, or becomes, the germ line cell.

(1) Note. "Microinjection" involves injection into the cell through a very small diameter tube, needle, or micropipet.

260 METHOD OF USING A PLANT OR PLANT PART IN A BREEDING PROCESS WHICH INCLUDES A STEP OF SEXUAL HYBRIDIZATION:

This subclass is indented under the class definition. Method wherein a breeding process results in a stable or transient change in a plant with said process including sexual hybridization resulting in a new plant genotype.

(1) Note. Breeding processes are defined as involving sexual hybridization, i.e.,

involving the gametophytic phase of the plant.

(2) Note. Changes in plant phenotype not due to genetic changes are not proper for this class.

261 Breeding for altered sterol composition:
This subclass is indented under subclass 260.
Method wherein the stable or transient change produced in a plant or plant part results in a change in the absolute or relative amount of one or more sterol compounds in the plant.

(1) Note. A sterol is a compound with a hydroxyl group bonded to a carbon of a cyclopentanohydrophenanthrene ring system.

(2) Note. This subclass also provides for the case where a qualitative change to a sterol is actually a decrease of that sterol and an increase of the resultant sterol.

262 Breeding for altered pH or ion composition:
This subclass is indented under subclass 260.
Method wherein the stable or transient change produced in a plant or plant part results in a change in the pH or the absolute or relative amount of one or more ions in the plant.

(1) Note. A qualitative change to an ion composition actually represents a change in relative concentrations of the component ions, and as such, is a quantitative change which is included in this subclass.

263 Breeding for altered carbohydrate composition:
This subclass is indented under subclass 260.
Method wherein the stable or transient change produced in a plant or plant part results in a change in the absolute or relative amount of one or more carbohydrates in the plant.

(1) Note. This subclass also provides for the case where a qualitative change to a carbohydrate is actually a decrease of that carbohydrate and an increase of the resultant carbohydrate.

264 Breeding for altered fat, fatty oil, ester-type wax, or fatty acid composition:
This subclass is indented under subclass 260.
Method wherein the stable or transient change produced in a plant or plant part results in a change in the absolute or relative amount of one or more of the fat, fatty oil, ester-type wax, or fatty acid compounds in the plant.

(1) Note. This subclass also provides for the case where a qualitative change to a fat, fatty oil, ester-type wax, or fatty acid is actually a decrease of that fat, fatty oil, ester-type wax or fatty acid and an increase of the resultant fat, fatty oil, ester-type wax, or fatty acid.

265 Breeding for pathogen or pest resistance or tolerance:
This subclass is indented under subclass 260.
Method wherein the stable or transient change results in a resistance to or tolerance of a pathogenic or pest organism in the plant.

(1) Note. A pathogenic or pest organism is one which is in some way deleterious or harmful to a living plant such as a virus, bacteria, insect, nematode, rodent, etc.

266 Method of breeding involving a genotypic or phenotypic marker:
This subclass is indented under subclass 260.
Method wherein the breeding process includes the linkage of specific phenotypic traits with genotypic or phenotypic markers.

(1) Note. Introduction of a marker such as an antibiotic resistance gene to facilitate breeding would be proper subject matter for this subclass as well as methods involving visual selection of a plant phenotype.

267 Molecular marker is used:
This subclass is indented under subclass 266.
Method which includes the linkage of one or more specific phenotypic traits with one or more genotypic markers such as the linkage of the phenotypic trait "yield" via RFLP (restriction fragment length polymorphism) markers to corresponding segments of the plant genome.

(1) Note. A variant allele may be a molecular marker for the purposes of this subclass.

268 Method of breeding involving a tissue culture step:

This subclass is indented under subclass 260. Method wherein a tissue culture step is used in connection with the breeding process.

(1) Note. Subject matter included in this subclass includes clonal propagation of a genotype for use in a breeding process.

269 Method of breeding using interspecific (i.e., interspecies) crosses:

This subclass is indented under subclass 260. Method which involves the crossing of different plant species by breeding, e.g., introgressing traits from wild species into cultivated crops such as introduction of genes from Tripsacum into maize, etc.

270 Method of breeding involving a mutation step:

This subclass is indented under subclass 260. Method which includes both breeding and mutagenesis steps, e.g., mutation of pollen followed by using that pollen to breed a hybrid or variant plant, etc.

(1) Note. Mutation encompasses the intentional or unintentional use of mutagenic agents such as EMS (ethyl methanesulfonate), energy sources such as x-rays, and any process step that results in mutation.

271 Method of breeding using gametophyte control:

This subclass is indented under subclass 260. Method wherein the stable or transient change is obtained through any method which interferes with the natural process of pollination.

(1) Note. Proper subject matter for this and the indented subclasses includes methods such as preventing or controlling pollen shed, manipulation of dichogamy, etc.

(2) Note. Dichogamy is the maturation of stamens and pistils at different periods, thus insuring cross pollination. Protogyny is that form of dichogamy in which the stigma matures and withers before anthers of the same flower ripen and shed pollen, contrasted with protandry wherein the anthers mature and shed their pollen before the stigma of the same flower becomes receptive.

272 Via gametocide:

This subclass is indented under subclass 271. Method wherein chemical interference with gamete formation or viability is employed.

(1) Note. Included in this subclass are methods wherein a gametocidal compound or composition is recombinantly expressed in a plant or plant gamete as well as methods of treating a plant with a gametocidal compound.

273 Via self incompatibility:

This subclass is indented under subclass 271. Method wherein fertilization is controlled by genetic incompatibility alleles.

(1) Note. Transgenic processes involving known incompatibility alleles, e.g., S-alleles in Brassica, etc., and their transfer into non-native species for breeding purposes are proper for this subclass.

274 Via a male sterility genetic trait:

This subclass is indented under subclass 271. Method involving the use of genes which control or cause male sterility.

275 Method of breeding maize:

This subclass is indented under subclass 260. Method involving the breeding of maize, i.e., Zea mays or corn.

276 METHOD OF CHEMICALLY, RADIOLOGICALLY, OR SPONTANEOUSLY MUTATING A PLANT OR PLANT PART WITHOUT INSERTING FOREIGN GENETIC MATERIAL THEREIN:

This subclass is indented under the class definition. Method for producing a specific stable or transient change in the genotype of a plant involving chemically, radiologically, or spontaneously inducing structural change in a gene in the genome of said plant, not including insert-

ing DNA into or rearrangement of said gene within the plant.

277 METHOD OF PRODUCING A PLANT OR PLANT PART USING SOMATIC CELL FUSION (E.G., PROTOPLAST FUSION, ETC.):

This subclass is indented under the class definition. Method wherein cellular matter of two or more fusing partners is combined producing a plant cell which initially contains the genes of both the fusing partners, and wherein a plant or plant part is regenerated from said cell.

(1) Note. This subclass does not include fusion of a liposome to a cell unless two or more cells are also fused by the method.

(2) Note. This subclass does not include fusion of a cell to an enveloped virus as part of an infection or genetic alteration method.

(3) Note. Placement of a method in this subclass does not require fusion of nuclei.

SEE OR SEARCH CLASS:

435, Chemistry: Molecular Biology and Microbiology, subclass 453 for fusing plant cells without regenerating a plant or plant part and subclass 458 for introducing nucleic acid into an animal cell using a liposome.

278 METHOD OF INTRODUCING A POLYNUCLEOTIDE MOLECULE INTO OR REARRANGEMENT OF GENETIC MATERIAL WITHIN A PLANT OR PLANT PART:

This subclass is indented under the class definition. Method for insertion of polynucleotide molecules into, or rearrangement of genetic material within a plant cell, wherein said cell is part of, or regenerated into, a plant or plant part.

(1) Note. The following glossary of terms is applicable to this and the indented subclasses:

GLOSSARY

A NTISENSE RNA AND DNA

An approach for inhibiting functions of endogenous cellular genes which targets the gene's messenger RNA rather than the gene itself. An RNA or single-stranded DNA molecule that is complementary (antisense) to the mRNA of the target gene is introduced into cells. This antisense molecule can base-pair with the mRNA preventing translation of the mRNA into protein.

E NHANCER

Element is a cis-acting sequence that increases the utilization of (some) eukaryotic promoters and can function in either orientation and in any location (upstream or downstream) relative to the promoter.

EXON

A continuous coding segment of a eukaryotic gene. Many eukaryotic genes are "split" and have exons interspersed with nonsense DNA called introns. Thus, it is a part of the gene which encodes protein.

I NTRON

DNA sequences in eukaryotes that lie within genes, but do not code for protein. In most instances, introns have no apparent function. Their presence "splits" the coding region of the gene into segments called exons. In the synthesis of messenger RNA, introns are copied into RNA, but they are removed by splicing, which restores the continuity of the coding sequence.

P ROMOTER

Site on DNA where RNA polymerase binds and initiates transcription.

REGULATOR

Codes for an RNA or protein product whose function is to control the expression of other genes.

STRUCTURAL GENE

Codes for any RNA or protein product other than a regulator.

T ERMINATOR

A sequence of DNA, located at the end of the transcript, that causes RNA polymerase to terminate transcription.

TRANSCRIPTION UNIT

The region between the sites of initiation and termination by RNA polymerase.

T RANSPOSON

Mobile genetic element that can change its position within or between cellular genomes.

279 The polynucleotide confers pathogen or pest resistance:
This subclass is indented under subclass 278.
Method wherein the polynucleotide molecule confers resistance to or tolerance of pests or pathogenic organisms in the plant or plant part.

(1) Note. Pests and pathogens may include viruses, bacteria, nematodes, insects, etc.

280 Plant virus gene expression from the polynucleotide:
This subclass is indented under subclass 279.
Method wherein the polynucleotide molecule encodes a gene or portion of a gene, which gene is from a virus which infects plants.

281 The polynucleotide alters fat, fatty oil, ester-type wax, or fatty acid production in the plant:
This subclass is indented under subclass 278.
Method wherein the polynucleotide confers a change in the absolute or relative amount of one or more fat, fatty oil, ester-type wax, or fatty acid compounds produced in the plant.

(1) Note. This subclass also provides for the case where a qualitative change to a fat, fatty oil, ester-type wax, or fatty acid is actually a decrease of that fat, fatty oil, ester-type wax or fatty acid and an increase of the resultant fat, fatty oil, ester-type wax, or fatty acid, and as such is included in this subclass.

282 The polynucleotide alters pigment production in the plant:
This subclass is indented under subclass 278.
Method wherein the polynucleotide confers a change in the absolute or relative amount of one or more pigment compounds produced in the plant.

(1) Note. For the purposes of this subclass, a pigment compound is a compound which provides visible color to the plant.

283 The polynucleotide alters ethylene production in the plant:
This subclass is indented under subclass 278.
Method wherein the polynucleotide confers a change in the absolute or relative amount of ethylene produced in the plant.

284 The polynucleotide alters carbohydrate production in the plant:
This subclass is indented under subclass 278.
Method wherein the polynucleotide confers a change in the absolute or relative amount of one or more carbohydrate compounds produced in the plant.

(1) Note. Carbohydrates are compounds which are saccharides whose monomeric units are polyhydroxy mono-aldehydes or polyhydroxy mono-ketones having the empirical formula C n(H 2O) n (wherein n is five or six) or the corresponding cyclic hemiacetals thereof, or the reaction derivatives thereof in which the carbon skeleton and the carbonyl function or hemiacetal function of the saccharide unit are not destroyed.

285 The polynucleotide encodes an inhibitory RNA molecule:
This subclass is indented under subclass 278.
Method wherein an RNA molecule which is transcribed from a gene or a segment thereof, acts to inhibit the function of said gene by a mechanism other than by being translated to a polypeptide.

286 The RNA is antisense:
This subclass is indented under subclass 285.
Method wherein the RNA molecule is transcribed in the reverse direction from its natural direction of transcription.

(1) Note. Antisense RNA is complementary to a target gene's mRNA thereby allowing it to base-pair with the mRNA, preventing translation of the mRNA into protein.

287 The polynucleotide contains a tissue, organ, or cell specific promoter:
This subclass is indented under subclass 278.
Method wherein the polynucleotide comprises a promoter which is active in cells of some, but not all, tissues, organs, or cell types of the plant.

288 Nonplant protein is expressed from the polynucleotide:
This subclass is indented under subclass 278.
Method wherein the polynucleotide encodes a polypeptide not originating from a plant.

289 The polynucleotide confers resistance to heat or cold (e.g., chilling, etc.):
This subclass is indented under subclass 278.
Method wherein the polynucleotide permits the plant or plant part to tolerate higher or lower temperatures than in the absence of said polynucleotide.

290 The polynucleotide alters plant part growth (e.g., stem or tuber length, etc.)
This subclass is indented under subclass 278.
Method wherein the polynucleotide causes the plant or plant part to be larger or smaller or to grow at a faster or slower rate than in the absence of said polynucleotide.

(1) Note. Greater or lesser mass, or rate of gaining mass, would be appropriate measures of growth for this subclass.

291 The polynucleotide comprises a transposon:
This subclass is indented under subclass 278.
Method wherein the polynucleotide comprises a transposon.

(1) Note. A transposon is a mobile genetic element that can change its position within or between cellular genomes.

(2) Note. Transposons are also called transposable elements or transposable sequences.

292 Involving electroporation:
This subclass is indented under subclass 278.
Method wherein the polynucleotide is inserted into the plant cell by means of electroporation.

(1) Note. Electroporation involves the use of an electric pulse of sufficient voltage and time to open temporary gaps in the cell membrane to permit the polynucleotide to enter the cell.

293 Involving particle-mediated transfection (e.g., biolistic, etc.):
This subclass is indented under subclass 278.
Method wherein the polynucleotide molecule is present upon or within a particle which is introduced or inserted into the plant or plant part by said particle penetrating the plant cell membranes in a ballistic fashion, i.e., due to a relatively high velocity.

294 Via Agrobacterium:
This subclass is indented under subclass 278.
Method wherein the polynucleotide is introduced into the plant cell by infecting the cell with an Agrobacterium which contains the polynucleotide.

295 PLANT, SEEDLING, PLANT SEED, OR PLANT PART PER SE:
This subclass is indented under the class definition. Subject matter which is a plant, seedling, plant seed, or plant part.

(1) Note. Embryos, flowers, leaves, differentiated tissue (i.e., specific organs), buds, meristems, shoots, roots, tubers, fruits, stems, cuttings, bulbs, corms, rhizomes, pollen, mycelium, spores, ascocarps, and sclerotia are considered plant parts for purposes of this class.

296 Multicellular algae:
This subclass is indented under subclass 295.
Subject matter wherein the plant, seedling, plant seed, or plant part is multicellular algae.

(1) Note. Algae are defined as non-vascular, photosynthetic plants, lacking true stems, roots or leaves and being aquatic in marine or fresh water or found in damp habitats on land.

SEE OR SEARCH CLASS:
47, Plant Husbandry, subclass 1.4 for multicellular algae culture.

435, Chemistry: Molecular Biology and Microbiology, subclasses 257.1+ for unicellular algae and culturing processes therefore.

297 Mushroom:
This subclass is indented under subclass 295. Subject matter wherein the plant or plant part is mushroom.

(1) Note. Mushrooms are defined as fleshy multicellular fungi of the class Basidiomycetes or Ascomycetes.

SEE OR SEARCH CLASS:
47, Plant Husbandry, subclass 1.1 for mushroom culture.

298 Higher plant, seedling, plant seed, or plant part (i.e., angiosperms or gymnosperms):
This subclass is indented under subclass 295. Subject matter wherein the plant, seedling, plant seed, or plant part is a higher plant, i.e., an angiosperm or gymnosperm, both of which produce seeds.

299 Haploid:
This subclass is indented under subclass 298. Subject matter wherein the higher plant, seedling, plant seed, or plant part is haploid.

(1) Note. A haploid plant is one which contains only one of each type of chromosome (n). Haploid multicellular plants produce cells specialized as gametes.

300 Herbicide resistant plant which is transgenic or mutant:
This subclass is indented under subclass 298. Subject matter wherein the higher plant, seedling, plant seed, or plant part is herbicide resistant and has been made via a transgenic method or a mutation step.

(1) Note. Transgenic means that new genetic information has become embedded into the germ line of the plant. A mutant plant is one wherein a change in the structure of the genetic material (i.e., the DNA base sequence) of the plant has occurred. Mutations result in heritable alterations in the genotype of the plant.

SEE OR SEARCH CLASS:
435, Chemistry: Molecular Biology and Microbiology, subclass 418 for a plant cell or cell line (other than tomato, corn, tobacco, sunflower, or potato cells or cell lines which are higher in the Class 435 schedule than subclass 418) which is herbicide resistant.

300.1 The plant is maize:
This subclass is indented under subclass 300. Subject matter wherein the herbicide resistant plant is maize, which is also known as corn or Zea mays.

SEE OR SEARCH CLASS:
435, Chemistry: Molecular Biology and Microbiology, subclass 413 for a corn cell or cell line which is herbicide resistant.

301 Pathogen resistant plant which is transgenic or mutant:
This subclass is indented under subclass 298. Subject matter wherein the higher plant, seedling, plant seed, or plant part is pathogen resistant and has been made via a transgenic method or a mutation step.

(1) Note. Transgenic means that new genetic information has become embedded into the germ line of the plant. A mutant plant is one wherein a change in the structure of the genetic material (i.e., the DNA base sequence) of the plant has occurred. Mutations result in heritable alterations in the genotype of the plant.

(2) Note. Pathogens include disease-causing organisms such as viruses, bacteria, nematodes, etc.

SEE OR SEARCH CLASS:
435, Chemistry: Molecular Biology and Microbiology, subclass 418 for a plant cell or cell line (other than tomato, corn, tobacco, sunflower, or potato cells or cell lines which are higher in the Class 435 schedule than subclass 418) which is pest resistant or pest lethal.

302 Insect resistant plant which is transgenic or mutant:

This subclass is indented under subclass 298. Subject matter wherein the higher plant, seedling, plant seed, or plant part is insect resistant and has been made via a transgenic method or a mutation step.

(1) Note. Transgenic means that new genetic information has become embedded into the germ line of the plant. A mutant plant is one wherein a change in the structure of the genetic material (i.e., the DNA base sequence) of the plant has occurred. Mutations result in heritable alterations in the genotype of the plant.

SEE OR SEARCH CLASS:

435, Chemistry: Molecular Biology and Microbiology, subclass 418 for a plant cell or cell line (other than tomato, corn, tobacco, sunflower, or potato cells or cell lines which are higher in the Class 435 schedule than subclass 418) which is pest resistant or pest lethal.

303 Male-sterile:

This subclass is indented under subclass 298. Subject matter wherein the higher plant, seedling, plant seed, or plant part is male-sterile.

(1) Note. A male sterile plant is one which produces no viable pollen. Male sterility prevents self pollination and the pollination of neighboring plants. These male sterile plants are therefore useful in hybrid plant production. The male sterile plant may still produce ova capable of being fertilized.

304 Somatic cell fusion product or somatic cell fusion-derived plant:

This subclass is indented under subclass 298. Subject matter wherein the higher plant, seedling, plant seed, or plant part is a somatic cell fusion product or somatic cell fusion-derived plant.

(1) Note. Somatic cell fusion is also called somatic cell hybridization or protoplast fusion. This technique may be employed as a means for recombining genomes of sexually incompatible species.

305 Lettuce:

This subclass is indented under subclass 298. Subject matter wherein the higher plant, seedling, plant seed, or plant part is lettuce.

(1) Note. Lettuce is a member of genus Lactuca.

306 Brassica:

This subclass is indented under subclass 298. Subject matter wherein the higher plant, seedling, plant seed, or plant part is a member of genus Brassica.

(1) Note. Brassica includes cabbage, rapeseed, broccoli, cauliflower, kale, etc.

307 Cucumber:

This subclass is indented under subclass 298. Subject matter wherein the higher plant, seedling, plant seed, or plant part is a cucumber.

(1) Note. Cucumber is a member of genus Cucumis.

308 Watermelon:

This subclass is indented under subclass 298. Subject matter wherein the higher plant, seedling, plant seed, or plant part is a watermelon.

(1) Note. Watermelon is a member of genus Citrullus.

309 Melon (e.g., cantaloupe, honeydew, etc.):

This subclass is indented under subclass 298. Subject matter wherein the higher plant, seedling, plant seed, or plant part is a melon such as cantaloupe, honeydew, etc.

(1) Note. Many melons are members of genus Cucumis.

310 Squash (e.g., pumpkin, zucchini, etc.):

This subclass is indented under subclass 298. Subject matter wherein the higher plant, seedling, plant seed, or plant part is a squash such as a pumpkin, zucchini, yellow, etc.

(1) Note. Squash are part of genus Cucurbita.

311 Pelargonium:
This subclass is indented under subclass 298. Subject matter wherein the higher plant, seedling, plant seed, or plant part is a member of genus Pelargonium.

(1) Note. Pelargonium includes various geranium species.

312 Soybean:
This subclass is indented under subclass 298. Subject matter wherein the higher plant, seedling, plant seed, or plant part is a soybean.

(1) Note. Soybean is part of genus Glycine.

313 Bean:
This subclass is indented under subclass 298. Subject matter wherein the higher plant, seedling, plant seed, or plant part is a bean such as a green bean, lima bean, etc.

314 Cotton:
This subclass is indented under subclass 298. Subject matter wherein the higher plant, seedling, plant seed, or plant part is cotton.

(1) Note. Cotton is a member of genus Gossypium.

315 Apple:
This subclass is indented under subclass 298. Subject matter wherein the higher plant, seedling, plant seed, or plant part is part of an apple tree or fruit.

(1) Note. The apple is a member of genus Malus.

316 Citrus (e.g., orange, lemon, lime, etc.):
This subclass is indented under subclass 298. Subject matter wherein the higher plant, seedling, plant seed, or plant part is part of a citrus tree or fruit (e.g., orange, lemon, lime, etc.)

(1) Note. The genus for citrus is Citrus.

(2) Note. The citrus genus includes grapefruit, orange, lemon, lime, tangerine, etc.

317 Solanaceae (e.g., eggplant, etc.):
This subclass is indented under subclass 298. Subject matter wherein the higher plant, seedling, plant seed, or plant part is a member of the Solanaceae family (e.g., eggplant, etc).

317.1 Pepper:
This subclass is indented under subclass 317. Subject matter wherein the Solanaceae is a pepper.

(1) Note. Peppers are members of genus Capsicum.

317.2 Potato:
This subclass is indented under subclass 317. Subject matter wherein the Solanaceae is a potato.

(1) Note. Potatoes are members of genus Solanum.

317.3 Tobacco:
This subclass is indented under subclass 317. Subject matter wherein the Solanaceae is a tobacco plant.

(1) Note. Tobacco is a member of genus Nicotiana.

317.4 Tomato:
This subclass is indented under subclass 317. Subject matter wherein the Solanaceae is a tomato.

(1) Note. Tomato is a member of genus Lycopersicon.

318 Celery:
This subclass is indented under subclass 298. Subject matter wherein the higher plant, seedling, plant seed, or plant part is celery.

(1) Note. Celery is a member of genus Apium.

319 Conifer:
This subclass is indented under subclass 298. Subject matter wherein the higher plant, seedling, plant seed, or plant part is a conifer.

(1) Note. Conifers (i.e., Class Coniferae) include pines, spruces, firs, cedars, hemlocks, yews, larches, cypresses, redwoods, junipers, etc.

320 Gramineae (e.g., barley, oats, rye, sorghum, millet, etc.):
This subclass is indented under subclass 298.
Subject matter wherein the higher plant, seedling, plant seed, or plant part is a member of the Gramineae family (e.g., barley, oats, rye, sorghum, millet, etc.)

(1) Note. Gramineae also includes many grasses.

320.1 Maize:
This subclass is indented under subclass 320.
Subject matter wherein the Gramineae is maize.

(1) Note. Maize is also known as corn and Zea mays.

320.2 Rice:
This subclass is indented under subclass 320.
Subject matter wherein the Gramineae is rice.

(1) Note. Rice is a member of genus Oryza.

320.3 Wheat:
This subclass is indented under subclass 320.
Subject matter wherein the Gramineae is wheat.

(1) Note. Wheat is a member of genus Triticum.

321 Lily:
This subclass is indented under subclass 298.
Subject matter wherein the higher plant, seedling, plant seed, or plant part is a lily.

(1) Note. Lily is a member of genus Lilium.

322 Sunflower:
This subclass is indented under subclass 298.
Subject matter wherein the higher plant, seedling, plant seed, or plant part is a sunflower.

(1) Note. Sunflower is a member of genus Helianthus.

323 Ornamental plant:
This subclass is indented under subclass 298.
Subject matter wherein the higher plant, seedling, plant seed, or plant part is an ornamental plant.

(1) Note. Ornamental plants are plants grown for their beauty. Examples of plants considered ornamental are snapdragon, delphinium, poinsettia, daisy, daffodil, iris, tulip, etc.

323.1 Petunia:
This subclass is indented under subclass 323.
Subject matter wherein the ornamental plant is a petunia.

323.2 Chrysanthemum:
This subclass is indented under subclass 323.
Subject matter wherein the ornamental plant is a chrysanthemum.

323.3 Carnation:
This subclass is indented under subclass 323.
Subject matter wherein the ornamental plant is a carnation.

FOREIGN ART COLLECTIONS

The definitions of the Foreign Patent/NPL Art Collections below correspond to the definitions of the abolished subclasses from which these collections were formed. See the Foreign Patent/NPL Art Collection schedule for specific correspondences.

FOR 100 NONHUMAN ANIMAL:
Foreign art collections including products which are multicellular nonhuman animals (e.g., transgenic mouse).

FOR 101 Plant, seedling or plant part:
Foreign art collections including products which are multicellular plants, seedlings (i.e., a young plant grown from seed), seeds, or plant parts.

FOR 102 Recombinant plant:
Foreign art collections including products including plants derived from recombinant or transgenic processes, e.g., transformation, which are stable inheritable alterations to its genome and to subsequent offspring.

FOR 103 Somatic cell fusion product or somatic cell fusion-derived plant:
Foreign art collections including products including plants derived from somatic cell fusion processes wherein many genes are

transferred from donor to recipient plant cell (e.g., protoplast).

FOR 104 Mutant plant or plant derived from mutagenesis:
Foreign art collections including products including mutant plants or plants derived from mutagenesis by artificially and randomly inducing a structural change in genes already present in the plant usually without the incorporation of exogenous DNA, as well as spontaneous or naturally occurring mutant plants.

FOR 105 Monocotyledon (e.g., corn, rice, wheat, etc.):
Foreign art collections including products wherein the mutant plant is one of the two major divisions of angiosperms (flowering plants) characterized by having a single embryonic seed leaf that appears at germination (i.e., monocotyledon).

FOR 106 Plant having grafted product (i.e., grafted plant):
Foreign art collections including products including plants derived from grafting processes involving the fusion of multicellular plant parts from different plants; i.e., "stock" and "scion".

FOR 107 Genetically modified seed:
Foreign art collections including products which are seeds whose genetic makeup has been altered, and which modification subsequently will be passed on to its progeny.

FOR 108 Dicotyledon:
Foreign art collections including products wherein the seed is from one of the two major divisions of angiosperms (i.e., flowering plants) characterized by a pair of seed leaves that appears at germination (i.e., dicotyledon) (e.g., cotton, magnolia, carrots, peas, mints, tobacco, alfalfa, potatoes, mustards, squashes, dandelions, sunflowers, spinach, poison ivy, beans, Brassica species, most broad-leafed shrubs, trees, etc.).

END