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(54) Titre : GENE CULLIN1 MODIFIE
(54) Title: MODIFIED CULLIN1 GENE

(57) **Abrégé/Abstract:**

The present invention relates to a modified Cullin1 gene which leads to a plant type that enables efficient cultivation and/or is suitable for situations that require smaller portions, or reduces the labour, time and expenses involved with storing, handling and transporting of redundant plant leaves. The invention also relates to plants comprising the modified Cullin1 gene. The modified Cullin1 gene provides plants with a compact growth phenotype, i.e. comprising shorter internode length and/or a smaller leaf area when compared to plants not comprising the modified Cullin1 gene. The invention further relates to the use of the modified Cullin1 gene for the identification and development of a plant showing a compact growth phenotype, i.e. comprising shorter internodes and/or a smaller leaf area.

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(54) Title: MODIFIED *CULLIN1* GENE

(57) Abstract: The present invention relates to a modified *Cullin1* gene which leads to a plant type that enables efficient cultivation and/or is suitable for situations that require smaller portions, or reduces the labour, time and expenses involved with storing, handling and transporting of redundant plant leaves. The invention also relates to plants comprising the modified *Cullin1* gene. The modified *Cullin1* gene provides plants with a compact growth phenotype, i.e. comprising shorter internode length and/or a smaller leaf area when compared to plants not comprising the modified *Cullin1* gene. The invention further relates to the use of the modified *Cullin1* gene for the identification and development of a plant showing a compact growth phenotype, i.e. comprising shorter internodes and/or a smaller leaf area.

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MODIFIED *CULLIN1* GENE

The present invention relates to a plant type that enables efficient cultivation, and to methods for identifying and developing such a plant. The present invention also relates to a plant type suitable for situations that require smaller portions, or reduces the labour, time and expenses involved with storing, handling and transporting of redundant plant leaves, and to methods for identifying and developing such plant.

Plant breeders are continuously looking for more efficient ways to cultivate plants. One way to increase the efficiency is by high-wire cultivation. In the high-wire cultivation, higher planting densities are used to obtain higher yields per m². In addition, high-wire cultivation allows a longer cultivation period during which the plant produces fruits. Cucumber and tomato are crops that are suitable for high-wire cultivation. However, not all varieties are fit for this type of cultivation.

More efficient cultivation can also be achieved in other crops if the plants have a compact growth phenotype. Such a compact growth phenotype may be characterized by the plants showing shorter internodes and/or a smaller leave area. Because of this compact growth phenotype, the plants can be planted in higher densities, thereby saving a lot of space.

It is one goal of the present invention to provide a plant type that enables efficient cultivation. This goal has been achieved by providing a plant type showing a compact growth phenotype.

In the research leading to the present invention, it was found that a mutation in the *Cullin1* gene leads to a modification in plant type that may be expressed as a compact growth phenotype. A plant that has the mutant gene is in particular suitable for efficient cultivation. Such a plant shows a shorter internode length and/or a smaller leaf area and may also display other characteristics that lead to a compact growth phenotype.

Cullin proteins are a family of proteins present in all eukaryotes, not only plants. The Cullin proteins combine with RING proteins to form so-called Cullin-RING ubiquitine ligases (CRLs). In general, Cullin proteins play an important role in protein ubiquitination and protein degradation.

Ubiquitination (also known as ubiquitylation) is an enzymatic, post-translational modification process in which an ubiquitin protein is ligated to substrate protein.

Ubiquitine is a highly conserved, small polypeptide, ubiquitously distributed among eukaryotes. An ATP-dependent reaction cascade (involving the sequential action of ubiquitine-activating (E1s), ubiquitine-conjugating (E2s) and ubiquitine-protein ligase (E3s) enzymes) performs the ligation of ubiquitine to other proteins. Proteins that are ligated with ubiquitine are subsequently degraded and broken down, or relocated.

The Cullin1 protein, which is a member of the Cullin protein family, is one out of the four subunits that make up the SCF complex. The abbreviation SCF stands for SKP1-CUL1-F-box protein E3 ubiquitin ligase complex, which mediates the ubiquitination of proteins involved in cell cycle progression, signal transduction and transcription. In the SCF complex, Cullin1 serves as a rigid scaffold that organizes the SKP1-F-box protein and RBX1 subunits. It may contribute to catalysis through positioning of the substrate and the ubiquitin-conjugating enzyme.

As mentioned before, Cullin proteins are present in all eukaryotes. Through its involvement in ubiquitination and subsequent processes it is engaged in a wide range of cellular processes. Surprisingly, the mutation of the invention causes shorter internode length and/or smaller leaf area without causing a deleterious effect on the plant, which would be expected based on the state of the art knowledge available on the conserved status of Cullin1 protein and its functionality.

The characterisation of the modified *Cullin1* gene in the present research was performed in cucumber (*Cucumis sativus*). This enabled the identification of further crops having a *Cullin1* gene, which when modified leads to plants with a compact growth phenotype, i.e. showing shorter internode length and/or a smaller leaf area, or a reduction in other plant parts when compared to plants not having the modified *Cullin1* gene. These crops include those belonging to the family of *Cucurbitacea*, such as for instance melon (*Cucumis melo*), watermelon (*Citrullus lanatus*), and squash (*Cucurbita pepo*); fruit crops, such as pepper (*Capsicum annuum*), tomato (*Solanum lycopersicum*), and eggplant (*Solanum melongena*); leafy vegetables, such as lettuce (*Lactuca sativa*), spinach (*Spinacia oleracea*), chicory (*Cichorium intybus*), and cabbage (*Brassica oleracea*); root vegetables, such as for instance carrot (*Daucus carota*), radish (*Raphanus sativus*), and beetroot (*Beta vulgaris*); and other crops, such as celery (*Apium graveolens*) and leek (*Allium ampeloprasum*).

It is another goal of the present invention to provide a plant type that is suitable for situations that require smaller portions, or reduces the labour, time and expenses involved with storing, handling and transporting of redundant plant leaves.

The invention thus relates to a modified *Cullin1* gene comprising a modification in the wild type *Cullin1* nucleotide sequence which leads to a modification in the wild type Cullin1 amino acid sequence.

The *Cullin1* gene can be modified by different means known in the art, including mutagenesis. Mutagenesis comprises the random introduction of at least one modification to DNA by means of one or more chemical compounds, such as ethyl methanesulphonate (EMS), nitrosomethylurea, hydroxylamine, proflavine, N-methyl-N-nitrosoguanidine, N-ethyl-N-nitrosourea, N-methyl-N-nitro-nitrosoguanidine, diethyl sulphate, ethylene imine, sodium azide, formaline, urethane, phenol and ethylene oxide, and/or by physical means, such as UV-irradiation,

fast-neutron exposure, X-rays, gamma irradiation, and/or by insertion of genetic elements, such as transposons, T-DNA, retroviral elements. Mutagenesis also comprises the more specific, targeted introduction of at least one modification by means of homologous recombination, oligonucleotide-based mutation induction, zinc-finger nucleases (ZFNs), transcription activator-like effector nucleases (TALENs) or Clustered Regularly Interspaced Short Palindromic Repeat (CRISPR) systems.

The modified *Cullin1* gene may be an exogenous *Cullin1* gene introduced into a plant by a transgenic method or a cisgenic method. Use of a modified *Cullin1* gene of the invention for developing a plant that shows a compact growth phenotype, i.e. comprises shorter internodes and/or smaller leaf area, comprises the introduction of a modified exogenous *Cullin1* gene by a transgenic or a cisgenic method.

The modified *Cullin1* gene may be part of a gene construct, which gene construct comprises a selectable marker, a promoter sequence, a *Cullin1* gene sequence, and a terminator sequence.

The present invention is widely applicable to all plant species that have a functional orthologue of the *Cullin1* gene in their genome, i.e. an orthologue that performs the same or a similar biological function. Identification of Cullin1 orthologues, i.e. *Cullin1* genes in other species, can be performed in many crops, methods of which are known in the art. The present invention can for instance be applied to a plant belonging to a species selected from the group consisting of *Cucumis sativus*, *Cucumis melo*, *Cucurbita pepo*, *Citrullus lanatus*, *Solanum melongena*, *Solanum lycopersicum*, *Capsicum annuum*, *Brassica oleracea*, *Daucus carota*, *Apium graveolens*, *Cichorium intybus*, *Cichorium endivia*, *Allium ampeloprasum*, *Lactuca sativa*, *Raphanus sativus*, *Spinacia oleracea*, and *Beta vulgaris*.

Accordingly, the present invention relates to a modified *Cullin1* gene comprising a modification in the wild type Cullin1 nucleotide sequence of SEQ ID No: 1, SEQ ID No: 2, SEQ ID No: 3, SEQ ID No: 4, SEQ ID No: 5, SEQ ID No: 6, SEQ ID No: 7, SEQ ID No: 8, SEQ ID No: 9, SEQ ID No: 10, SEQ ID No: 11, SEQ ID No: 12, SEQ ID NO: 13, SEQ ID NO: 14, SEQ ID NO: 15, SEQ ID NO: 16, SEQ ID NO: 17 which leads to a modification in the wild type Cullin1 amino acid sequence of SEQ ID No: 18, SEQ ID No: 19, SEQ ID No: 20, SEQ ID No: 21, SEQ ID No: 22, SEQ ID No: 23, SEQ ID No: 24, SEQ ID No: 25, SEQ ID No: 26, SEQ ID No: 27, SEQ ID No: 28, SEQ ID NO: 29, SEQ ID NO: 30, SEQ ID NO: 31, SEQ ID NO: 32, SEQ ID NO. 33, SEQ ID NO: 34 respectively.

Figures 1-17 show the wild type *Cullin1* nucleotide sequences SEQ ID NO. 1-17 of *Cucumis sativus*, *Cucumis melo*, *Cucurbita pepo*, *Citrullus lanatus*, *Solanum melongena*, *Solanum lycopersicum*, *Capsicum annuum*, *Brassica oleracea*, *Daucus carota*, *Apium graveolens*, *Cichorium intybus*, *Cichorium endivia*, *Allium ampeloprasum*, *Lactuca sativa*, *Raphanus sativus*,

Spinacia oleracea, and *Beta vulgaris*, respectively. Figures 18-34 show the wild type Cullin1 amino acid sequences SEQ ID NO.18-34 of *Cucumis sativus*, *Cucumis melo*, *Cucurbita pepo*, *Citrullus lanatus*, *Solanum melongena*, *Solanum lycopersicum*, *Capsicum annuum*, *Brassica oleracea*, *Daucus carota*, *Apium graveolens*, *Cichorium intybus*, *Cichorium endivia*, *Allium ampeloprasum*, *Lactuca sativa*, *Raphanus sativus*, *Spinacia oleracea*, and *Beta vulgaris*, respectively.

The term “wild type” as used herein refers in general to the form of an organism, gene, protein, or trait as it would occur in nature, as opposed to a mutated or modified form. In this application wild type refers specifically to the naturally occurring form of the *Cullin1* gene, the naturally occurring form of the nucleotide sequence of Cullin1 and the naturally occurring form of the Cullin1 amino acid sequence. The naturally occurring forms of the *Cullin1* gene and Cullin1 protein of several crops are shown in Figures 1-17 and Figures 18 -34 respectively.

The terms “mutant”, “mutation”, “modification”, “modified”, “mutated *Cullin1* gene” and “modified *Cullin1* gene” as used herein refer to nucleotide changes and amino acid changes to the wild type *Cullin1* gene thereof that lead to a modified version of the wild type gene. The modification can be any modification, including but not limited to a SNP.

The modified *Cullin1* gene is also referred to herein as “the gene of the invention”, “the modified *Cullin1* gene”, or “the modified *Cullin1* gene of the invention”. These terms are used interchangeably herein. As used herein the phrase “the modified *Cullin1* gene” is intended to encompass the *Cullin1* gene with any modification that leads to the compact growth phenotype.

The terms “compact gene phenotype”, “compact phenotype” or “compact growth phenotype” are used interchangeably herein and refer to a phenotype of a shorter internode length and/or a smaller leaf area. Crops comprising the modified *Cullin1* gene and which have internodes, such as for instance cucumber, may show shorter internodes or a smaller leaf area. They may also show shorter internodes and a smaller leaf area. Crops comprising the modified *Cullin1* gene but which do not have internodes, such as for instance lettuce, may show a smaller leaf area.

The term “smaller leaf area” as used herein is the leaf area that displays a reduction in individual leaf area of, in order of increased preference, at least 10%, at least 20%, at least 30%, at least 40%, at least 50%, at least 60%, at least 70%, at least 80% as a result of the homozygous or heterozygous presence of the modified gene of the invention. To investigate the influence of the gene of the invention on the smaller leaf area, a skilled person would have to compare plants having the gene of the invention homozygously or heterozygously with plants that are isogenic to first mentioned plants but do not have the gene of the invention.

With the term “leaf” is meant the part of the plant consisting of the petiole and leaf blade.

With the term “leaf area” is meant the surface of the part of the plant consisting of the leaf blade.

The term “shorter internodes” or “shorter internode length” as used herein is internode length that has a reduction in individual length of, in order of increased preference, at least 10%, at least 20%, at least 30%, at least 40%, at least 50%, at least 60%, at least 70%, at least 80% as a result of the homozygous or heterozygous presence of the gene of the invention. To investigate the influence of the gene of the invention on the shorter internode length, a skilled person would have to compare plants having the gene of the invention homozygously or heterozygously with plants that are isogenic to first mentioned plants but without the gene of the invention.

The modification leading to the modified *Cullin1* gene may be selected from a modification that changes the mRNA level of the *Cullin1* gene, a modification that changes the Cullin1 protein structure and/or levels, and/or a modification that changes the Cullin1 protein activity.

One aspect of the invention relates to a modified *Cullin1* gene, comprising a mutation as compared to its wild type genomic sequence, which mutation leads to a change in the Cullin1 protein and/or protein activity, wherein the modified *Cullin1* gene is capable of causing a compact growth phenotype.

In one embodiment, the mutation is a Single Nucleotide Polymorphism (SNP).

In one embodiment of the present invention, the change in the amino acid sequence is a substitution.

In a preferred embodiment of the present invention, the change in the amino acid sequence is found in the part of the Cullin1 protein between the amino acids on position 30-60, preferably in the part between the amino acids on positions 40-55 of the cucumber amino acid sequence of SEQ ID No: 18, or on a part corresponding thereto.

In a further preferred embodiment of the present invention, the change in the amino acid sequence is found in the part of the Cullin1 protein that binds SKP1 and/or ETA2.

Preferably, the physical location of the amino acid substitution in the Cullin1 protein lies in the region of the protein where the Cullin1 protein binds to SKP1 and/or ETA2. The Cullin1 protein forms a so-called SCF complex, together with SKP1, RBX1 and a F-box protein, which has important functionalities such as a role in leaf development. ETA2 is according to some theories, required to sustain the SCF complex activity, most probably by facilitating cycles of assembly and disassembly of the SCF complex.

In a specific embodiment, the modified *Cullin1* gene includes, a *Cullin1* gene comprising a SNP on position 147 of SEQ ID NO.1 of cucumber, or on a position corresponding thereto in the *Cullin1* gene of other crops, wherein the modification comprises a change in the nucleotide on that position and wherein the modification leads to an amino acid substitution in the Cullin1 protein on position 49 of the wildtype protein sequence SEQ ID NO: 18. of cucumber, or on a position

corresponding thereto, in other crops. In cucumber the change is from A to G and from Isoleucine to Methionine. In other crops the change in nucleotide and amino acid may be different.

In a preferred embodiment of the present invention, the modification of the nucleotide sequence comprises a change from Adenine, Cytosine or Thymine to Guanine.

5 The definition “coding sequence” as used herein is the portion of the gene’s DNA composed of exons that code for the protein.

In a further embodiment of the present invention, the modification in the amino acid sequence is a substitution on position 49 of the cucumber amino acid sequence of SEQ ID No: 18, or, in case of a crop other than cucumber, on a position corresponding to position 49 of the
10 cucumber amino acid sequence of SEQ ID No: 18.

The amino acid substitution caused by the mutation of the current invention was found to be present on position 49 of the cucumber amino acid sequence of SEQ ID No: 18, or, in case of a crop other than cucumber, on a position corresponding to position 49 of the wild type amino acid sequence SEQ ID NO. 18 of cucumber. This nucleotide mutation is considered to be non-
15 conservative, and the amino acid change can be considered non-conservative.

Amino acid changes in a protein occur when the mutation of one or more base pairs in the coding DNA sequence result in an altered codon triplet that encodes a different amino acid. Not all point mutations in the coding DNA sequence lead to amino acid changes, due to the redundancy of the genetic code. Mutations in the coding sequence that do not lead to amino acid changes are
20 called “silent mutations”. Other mutations are called “conservative”, they lead to the replacement of one amino acid by another amino acid with comparable properties, such that the mutations are unlikely to change the folding of the mature protein, or influence its function. As used herein a “non-conservative amino acid change” refers to an amino acid that is replaced by another amino acid that has different chemical properties that may lead to decreased stability, changed
25 functionality and/or structural effects of the encoded protein.

In a further preferred embodiment of the present invention, the modification in the amino acid sequence is a substitution and consists of a change from Isoleucine to Methionine

The invention further relates to a plant comprising the modified *Cullin1* gene.

A *Cucumis sativus* plant comprising the modified *Cullin1* gene with the nucleotide
30 sequence of SEQ ID No: 35 is not part of this invention and is therefore disclaimed herewith.

A plant comprising the modified *Cullin1* gene shows a compact growth phenotype, i.e. comprises a shorter internode length and/or a smaller leaf area, compared to an isogenic plant of the same species not comprising the modified *Cullin1* gene. For example, a *Cucumis sativus* plant a *Cucumis melo* plant, a *Cucurbita pepo* plant, a *Citrullus lanatus* plant, a *Solanum melongena*
35 plant, a, *Solanum lycopersicum* plant, and a *Capsicum annuum* plant comprising the modified *Cullin1* gene show a shorter internode length and/or a smaller leaf area. These plants are therefore

particularly suitable for efficient cultivation. A *Cichorium intybus* plant, a *Cichorium endivia* plant, a *Lactuca sativa* plant, a *Brassica oleracea* plant and a *Spinacia oleracea* plant comprising the modified *Cullin1* gene show for example a smaller leaf area. As such, the parts of these plants harvested for consumption are smaller in size. These plants are therefore particularly suitable for a situation in which smaller portions are required. A *Daucus carota* plant comprising the modified *Cullin1* gene shows a shorter internode length and/or a smaller leaf area. As such, the plant comprises less foliage that needs to be removed before the product is sold and/or consumed. An *Apium graveolens* plant comprising the modified *Cullin1* gene shows a shorter internode length and/or a smaller leaf area. As such, the plant is of a more compact size suitable for a situation in which smaller portions are required and/or comprises less foliage that needs to be removed before the product is sold and/or consumed. An *Allium ampeloprasum* plant comprising the modified *Cullin1* gene shows a smaller leaf area. As such, the leaves that are not consumed do not need to be removed before the product is sold and/or consumed. A *Raphanus sativus* plant and a *Beta vulgaris* plant comprising the modified *Cullin1* gene show a smaller leaf area. As such, less foliage needs to be removed before the product is sold and/or consumed.

The plant of the invention comprising the modified *Cullin1* gene either homozygously or heterozygously may be a plant of an inbred line, a hybrid, a doubled haploid, or a plant of a segregating population.

The plant of the invention may have the modified *Cullin1* gene in heterozygous state since such a plant shows the trait in an intermediate level. Furthermore such plant may be a potential source of the gene and when crossed with another plant that optionally also has the modified gene either homozygously or heterozygously can result in progeny plants that have the modified gene homozygously or heterozygously and show the trait of having a compact growth phenotype.

The invention also relates to a method for the production of a plant having the modified *Cullin1* gene that leads to a compact growth phenotype by using a seed that comprises the modified *Cullin1* gene for growing the said plant.

The invention further relates to a method for the production of a plant having the modified *Cullin1* gene by using tissue culture of plant material that carries the modified *Cullin1* gene in its genome.

The invention furthermore relates to a method for the production of a plant having the modified *Cullin1* gene which leads to a compact growth phenotype, by using vegetative reproduction of plant material that carries the modified *Cullin1* gene in its genome.

The invention further provides a method for the production of a plant having the modified *Cullin1* gene by using a doubled haploid generation technique to generate a doubled haploid line from a cucumber plant comprising the modified *Cullin1* gene.

The invention further relates to a plant seed comprising the modified *Cullin1* gene of the invention, wherein the plant that can be grown from the seed shows a compact growth phenotype.

The invention also relates to a method for seed production comprising growing plants from seeds of the invention, allowing the plants to produce seeds by allowing pollination to occur, and
5 harvesting those seeds. Production of the seeds is suitably done by crossing or selfing. Seeds produced in that manner result in a compact growth phenotype of the plants grown thereof.

The invention furthermore relates to hybrid seed and to a method for producing such hybrid seed comprising crossing a first parent plant with a second parent plant and harvesting the resultant hybrid seed, wherein said first parent plant and/or said second parent plant has the
10 modified *Cullin1* gene of the invention. A hybrid plant resulting from growing the resulting seed that comprises the modified *Cullin1* gene of the invention, showing the compact growth phenotype of the invention is also a plant of the invention.

Another aspect of the invention relates to propagation material capable of developing into and/or being derived from a plant comprising a modified *Cullin1* gene, wherein the plant shows a
15 compact growth phenotype, compared to an isogenic plant of the same species not comprising the modified *Cullin1* gene, wherein the propagation material comprises the modified *Cullin1* gene of the invention and wherein the propagation material is selected from the group consisting of microspores, pollen, ovaries, ovules, embryos, embryo sacs, egg cells, cuttings, roots, hypocotyls, cotyledons, stems, leaves, flowers, anthers, seeds, meristematic cells, protoplasts and cells, or
20 tissue culture thereof.

The invention thus further relates to parts of a claimed plant that are suitable for sexual reproduction. Such parts are for example selected from the group consisting of microspores, pollen, ovaries, ovules, embryo sacs, and egg cells. In addition, the invention relates to parts of a claimed plant that are suitable for vegetative reproduction, which are in particular cuttings, roots, stems,
25 cells, protoplasts. The parts of the plants as mentioned above are considered propagation material. The plant that is produced from the propagation material comprises the modified *Cullin1* gene that leads to a compact growth phenotype and thus enables efficient cultivation and/or is suitable for the production for market segments that require a smaller product.

According to a further aspect thereof, the invention provides a tissue culture of a plant
30 carrying the modified *Cullin1* gene of the invention, which is also propagation material. The tissue culture comprises regenerable cells. Such tissue culture can be selected or derived from any part of the plant, in particular from leaves, pollen, embryos, cotyledon, hypocotyls, meristematic cells, roots, root tips, anthers, flowers, seeds, and stems. The tissue culture can be regenerated into a plant carrying the modified *Cullin1* gene of the invention, which regenerated plant expresses the
35 trait of the invention and is also part of the invention.

The invention further relates to the use of the modified *Cullin1* gene for the development of a plant showing a compact growth phenotype. A skilled person is familiar with introducing a new trait into a plant already having other desired agricultural properties, for instance by introgression. Introgression can be done by means of standard breeding techniques, wherein
 5 selection can be done either phenotypically or with the use of markers or a combination thereof.

The invention further relates to the use of the modified *Cullin1* gene, or a part thereof comprising the modification, as a marker for identifying a plant showing a compact growth phenotype.

The ‘use for identifying’ or a ‘method for identifying’ as used in the current application
 10 comprises the use of the described (causal) SNP in the *Cullin1* gene as a marker. The invention also relates to other markers that can be developed based on a modification, including the causal SNP, in the *Cullin1* gene, as well as to other markers that can be developed based on the wildtype sequence of the *Cullin1* gene.

The invention further relates to the use of any of the sequences of SEQ ID NOs. 35-51, or a
 15 part thereof, as a marker for identifying a plant showing a compact growth phenotype, i.e. comprising a shorter internode length and/or a smaller leaf area. If a part of any of these sequences is used, the part must comprise the modification. For example, SEQ ID No. 35 or a part thereof may be used to identify a *Cucumis sativus* plant showing a shorter internode length and/or a smaller leaf area; SEQ ID No. 36 or a part thereof may be used to identify a *Cucumis melo* plant
 20 showing a shorter internode length and/or a smaller leaf area; SEQ ID No. 37 or a part thereof may be used to identify a *Cucurbita pepo* plant showing a shorter internode length and/or a smaller leaf area; SEQ ID No. 38 or a part thereof may be used to identify a *Citrullus lanatus* plant showing a shorter internode length and/or a smaller leaf area; SEQ ID No. 39 or a part thereof may be used to identify a *Solanum melongena* plant showing a shorter internode length and/or a smaller leaf area;
 25 SEQ ID No. 40 or a part thereof may be used to identify a *Solanum lycopersicum* plant showing a shorter internode length and/or a smaller leaf area; SEQ ID No. 41 or a part thereof may be used to identify a *Capsicum annuum* plant showing a shorter internode length and/or a smaller leaf area; SEQ ID No. 42 or a part thereof may be used to identify a *Brassica oleracea* plant showing a smaller leaf area; SEQ ID No. 43 or a part thereof may be used to identify a *Daucus carota* plant
 30 showing a shorter internode length and/or a smaller leaf area; SEQ ID No. 44 or a part thereof may be used to identify a *Apium graveolens* plant showing a shorter internode length and/or a smaller leaf area; SEQ ID No. 45 or a part thereof may be used to identify a *Cichorium intybus* plant showing a smaller leaf area; SEQ ID No. 46 or a part thereof may be used to identify a *Cichorium endivia* plant showing a smaller leaf area; SEQ ID No. 47 or a part thereof may be used to identify an *Allium ampeloprasum* plant showing a smaller leaf area; SEQ ID No. 48 or a part thereof may
 35 be used to identify a *Lactuca sativa* plant showing a smaller leaf area; SEQ ID No. 49 or a part

thereof may be used to identify a *Raphanus sativus* plant showing a shorter internode length and/or a smaller leaf area; SEQ ID No. 50 or a part thereof may be used to identify a *Spinacia oleracea* plant showing a smaller leaf area; SEQ ID No. 51 or a part thereof may be used to identify a *Beta vulgaris* plant showing a shorter internode length and/or a smaller leaf area. The invention also relates to the use of any markers that are derived from SEQ ID Nos. 1-17 or SEQ ID NOs. 36-51 for identifying a plant showing a compact growth phenotype. Any such derived marker must comprise the modification that leads to the phenotype of the invention.

In general, to identify a plant showing a compact growth phenotype, it is thus determined in the *Cullin1* gene whether there is an A, C, or T (SEQ ID Nos. 1-17) or a G (SEQ ID Nos. 35-51) on position 147, or a position corresponding thereto.

The invention further relates to a method for obtaining a plant which shows a compact growth phenotype comprising;

a) crossing a plant comprising the modified *Cullin1* gene of the current invention with a plant not comprising the modified *Cullin1* gene, to obtain an F1 population;

b) optionally performing one or more rounds of selfing and/or crossing a plant from the F1 to obtain a further generation population; and

c) selecting a plant that has a compact growth phenotype and the modified *Cullin1* gene of the invention.

The invention also relates to a method for obtaining a plant which shows a compact growth phenotype comprising;

a) crossing a plant comprising the modified *Cullin1* gene of the current invention with another plant comprising the modified *Cullin1* gene, to obtain an F1 population;

b) optionally performing one or more rounds of selfing and/or crossing a plant from the F1 to obtain a further generation population; and

c) selecting a plant that has a compact growth phenotype and the modified *Cullin1* gene of the invention.

The invention further relates to a marker for identifying a plant showing a compact growth phenotype, comprising the modified *Cullin1*, or a part thereof that comprises the modification. Preferably, the modification is a nucleotide substitution on or around position 147 of SEQ ID No:1 of cucumber, or, in case of a crop other than cucumber, on or around a position corresponding to position 147 of SEQ ID No:1 of cucumber, which modification leads to an amino acid substitution in the Cullin1 protein.

The invention also relates to a method for selecting a plant showing a compact growth phenotype from a population of plants, comprising detecting the presence or absence of a guanine on position 147 of the cucumber nucleotide sequence of SEQ ID NO:1, or, for a crop other than cucumber, on a position corresponding to position 147 of the cucumber nucleotide

sequence of SEQ ID No: 1, in the genome of a plant of a population of plants, and selecting a plant comprising a guanine on position 147 of SEQ ID NO:1, as shown in SEQ ID NO. 35, or, for a crop other than cucumber, on a position corresponding to position 147 of the cucumber nucleotide sequence of SEQ ID No: 1, as shown in any of SEQ ID Nos. 36- 51.

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FIGURES

Figure 1 Cucumber *Cullin1* coding sequence wildtype, SEQ ID NO. 1. The nucleotide between brackets and bold indicates the position of the SNP, 147 nucleotides from the start. The wildtype nucleotide is “A”, as shown here.

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Figure 2 Melon *Cullin1* coding sequence wildtype, SEQ ID NO. 2. The nucleotide between brackets and bold indicates the position of the SNP, 147 nucleotides from the start. The wildtype nucleotide is “A”, as shown here.

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Figure 3 Squash *Cullin1* coding sequence wildtype, SEQ ID NO. 3. The nucleotide between brackets and bold indicates the position of the SNP, 147 nucleotides from the start. The wildtype nucleotide is “A”, as shown here.

Figure 4 Watermelon *Cullin1* coding sequence wildtype, SEQ ID NO. 4. The nucleotide between brackets and bold indicates the position of the SNP, 147 nucleotides from the start. The wildtype nucleotide is “A”, as shown here.

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Figure 5 Eggplant *Cullin1* coding sequence wildtype, SEQ ID NO. 5. The nucleotide between brackets and bold indicates the position of the SNP, 141 nucleotides from the start. The wildtype nucleotide is “T”, as shown here.

Figure 6 Tomato *Cullin1* coding sequence wildtype, SEQ ID NO. 6. The nucleotide between brackets and bold indicates the position of the SNP, 141 nucleotides from the start. The wildtype nucleotide is “T”, as shown here.

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Figure 7 Pepper *Cullin1* coding sequence wildtype, SEQ ID NO. 7. The nucleotide between brackets and bold indicates the position of the SNP, 141 nucleotides from the start. The wildtype nucleotide is “T”, as shown here.

Figure 8 Cabbage *Cullin1* coding sequence wildtype, SEQ ID NO. 8. The nucleotide between brackets and bold indicates the position of the SNP, 138 nucleotides from the start. The wildtype nucleotide is “C”, as shown here.

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Figure 9 Carrot *Cullin1* coding sequence wildtype, SEQ ID NO. 9. The nucleotide between brackets and bold indicates the position of the SNP, 144 nucleotides from the start. The wildtype nucleotide is “C”, as shown here.

Figure 10 Celery *Cullin1* coding sequence wildtype, SEQ ID NO. 10. The nucleotide between brackets and bold indicates the position of the SNP, 141 nucleotides from the start. The wildtype nucleotide is “C”, as shown here.

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Figure 11 Chicory *Cullin1* coding sequence wildtype, SEQ ID NO. 11. The nucleotide between brackets and bold indicates the position of the SNP, 141 nucleotides from the start. The wildtype nucleotide is “C”, as shown here.

Figure 12 Endive *Cullin1* coding sequence wildtype, SEQ ID NO. 12. The nucleotide between brackets and bold indicates the position of the SNP, 141 nucleotides from the start. The wildtype nucleotide is “C”, as shown here.

Figure 13 Leek *Cullin1* coding sequence wildtype, SEQ ID NO. 13. The nucleotide between brackets and bold indicates the position of the SNP, 147 nucleotides from the start. The wildtype nucleotide is “C”, as shown here.

Figure 14 Lettuce *Cullin1* coding sequence wildtype, SEQ ID NO. 14. The nucleotide between brackets and bold indicates the position of the SNP, 141 nucleotides from the start. The wildtype nucleotide is “C”, as shown here.

Figure 15 Radish *Cullin1* coding sequence wildtype, SEQ ID NO. 15. The nucleotide between brackets and bold indicates the position of the SNP, 138 nucleotides from the start. The wildtype nucleotide is “C”, as shown here.

Figure 16 Spinach *Cullin1* coding sequence wildtype, SEQ ID NO. 16. The nucleotide between brackets and bold indicates the position of the SNP, 141 nucleotides from the start. The wildtype nucleotide is “A”, as shown here.

Figure 17 Beetroot *Cullin1* coding sequence wildtype, SEQ ID NO. 17. The nucleotide between brackets and bold indicates the position of the SNP, 141 nucleotides from the start. The wildtype nucleotide is “A”, as shown here.

Figure 18 Cucumber Cullin1 protein sequence wildtype, SEQ ID NO.18. The amino acid between brackets and bold indicates the position of the amino acid change caused by the SNP, 49 amino acids from the start. The wildtype amino acid is ‘I’, as shown here.

Figure 19 Melon Cullin1 protein sequence wildtype, SEQ ID NO.19. The amino acid between brackets and bold indicates the position of the amino acid change caused by the SNP, 49 amino acids from the start. The wildtype amino acid is ‘I’, as shown here.

Figure 20 Squash Cullin1 protein sequence wildtype, SEQ ID NO.20. The amino acid between brackets and bold indicates the position of the amino acid change caused by the SNP, 49 amino acids from the start. The wildtype amino acid is ‘I’, as shown here.

Figure 21 Watermelon Cullin1 protein sequence wildtype, SEQ ID NO.21. The amino acid between brackets and bold indicates the position of the amino acid change caused by the SNP, 49 amino acids from the start. The wildtype amino acid is ‘I’, as shown here.

Figure 22 Eggplant Cullin1 protein sequence wildtype, SEQ ID NO.22. The amino acid between brackets and bold indicates the position of the amino acid change caused by the SNP, 47 amino acids from the start. The wildtype amino acid is ‘I’, as shown here.

Figure 23 Tomato Cullin1 protein sequence wildtype, SEQ ID NO.23. The amino acid between brackets and bold indicates the position of the amino acid change caused by the SNP, 47 amino acids from the start. The wildtype amino acid is 'I', as shown here.

Figure 24 Pepper Cullin1 protein sequence wildtype, SEQ ID NO.24. The amino acid between brackets and bold indicates the position of the amino acid change caused by the SNP, 47 amino acids from the start. The wildtype amino acid is 'I', as shown here.

Figure 25 Cabbage Cullin1 protein sequence wildtype, SEQ ID NO.25. The amino acid between brackets and bold indicates the position of the amino acid change caused by the SNP, 46 amino acids from the start. The wildtype amino acid is 'I', as shown here.

Figure 26 Carrot Cullin1 protein sequence wildtype, SEQ ID NO.26. The amino acid between brackets and bold indicates the position of the amino acid change caused by the SNP, 48 amino acids from the start. The wildtype amino acid is 'I', as shown here.

Figure 27 Celery Cullin1 protein sequence wildtype, SEQ ID NO.27. The amino acid between brackets and bold indicates the position of the amino acid change caused by the SNP, 47 amino acids from the start. The wildtype amino acid is 'I', as shown here.

Figure 28 Chicory Cullin1 protein sequence wildtype, SEQ ID NO.28. The amino acid between brackets and bold indicates the position of the amino acid change caused by the SNP, 47 amino acids from the start. The wildtype amino acid is 'I', as shown here.

Figure 29 Endive Cullin1 protein sequence wildtype, SEQ ID NO.29. The amino acid between brackets and bold indicates the position of the amino acid change caused by the SNP, 47 amino acids from the start. The wildtype amino acid is 'I', as shown here.

Figure 30 Leek Cullin1 protein sequence wildtype, SEQ ID NO.30. The amino acid between brackets and bold indicates the position of the amino acid change caused by the SNP, 49 amino acids from the start. The wildtype amino acid is 'I', as shown here.

Figure 31 Lettuce Cullin1 protein sequence wildtype, SEQ ID NO.31. The amino acid between brackets and bold indicates the position of the amino acid change caused by the SNP, 47 amino acids from the start. The wildtype amino acid is 'I', as shown here.

Figure 32 Radish Cullin1 protein sequence wildtype, SEQ ID NO.32. The amino acid between brackets and bold indicates the position of the amino acid change caused by the SNP, 46 amino acids from the start. The wildtype amino acid is 'I', as shown here.

Figure 33 Spinach Cullin1 protein sequence wildtype, SEQ ID NO.33. The amino acid between brackets and bold indicates the position of the amino acid change caused by the SNP, 47 amino acids from the start. The wildtype amino acid is 'I', as shown here.

Figure 34 Beetroot Cullin1 protein sequence wildtype, SEQ ID NO.34. The amino acid between brackets and bold indicates the position of the amino acid change caused by the SNP, 47 amino acids from the start. The wildtype amino acid is 'I', as shown here.

Figure 35 Cucumber *Cullin1* coding sequence “modified” SEQ ID NO. 35. The nucleotide between brackets and bold and bold indicates the position of the SNP 147 bp from the start. The modified nucleotide is “G”, as shown here.

Figure 36 Melon *Cullin1* coding sequence “modified” SEQ ID NO. 36. The nucleotide between brackets and bold indicates the position of the SNP 147 bp from the start. The modified nucleotide is “G”, as shown here.

Figure 37 Squash *Cullin1* coding sequence “modified” SEQ ID NO. 37. The nucleotide between brackets and bold indicates the position of the SNP 147 bp from the start. The modified nucleotide is “G”, as shown here.

Figure 38 Watermelon *Cullin1* coding sequence “modified” SEQ ID NO. 38. The nucleotide between brackets and bold indicates the position of the SNP 147 bp from the start. The modified nucleotide is “G”, as shown here.

Figure 39 Eggplant *Cullin1* coding sequence “modified” SEQ ID NO. 39. The nucleotide between brackets and bold indicates the position of the SNP 141 bp from the start. The modified nucleotide is “G”, as shown here.

Figure 40 Tomato *Cullin1* coding sequence “modified” SEQ ID NO. 40. The nucleotide between brackets and bold indicates the position of the SNP 141 bp from the start. The modified nucleotide is “G”, as shown here.

Figure 41 Pepper *Cullin1* coding sequence “modified” SEQ ID NO. 41. The nucleotide between brackets and bold indicates the position of the SNP 141 bp from the start. The modified nucleotide is “G”, as shown here.

Figure 42 Cabbage *Cullin1* coding sequence “modified” SEQ ID NO. 42. The nucleotide between brackets and bold indicates the position of the SNP 138 bp from the start. The modified nucleotide is “G”, as shown here.

Figure 43 Carrot *Cullin1* coding sequence “modified” SEQ ID NO. 43. The nucleotide between brackets and bold indicates the position of the SNP 144 bp from the start. The modified nucleotide is “G”, as shown here.

Figure 44 Celery *Cullin1* coding sequence “modified” SEQ ID NO. 44. The nucleotide between brackets and bold indicates the position of the SNP 141 bp from the start. The modified nucleotide is “G”, as shown here.

Figure 45 Chicory *Cullin1* coding sequence “modified” SEQ ID NO. 45. The nucleotide between brackets and bold indicates the position of the SNP 141 bp from the start. The modified nucleotide is “G”, as shown here.

Figure 46 Endive *Cullin1* coding sequence “modified” SEQ ID NO. 46. The nucleotide between brackets and bold indicates the position of the SNP 141 bp from the start. The modified nucleotide is “G”, as shown here.

Figure 47 Leek *Cullin1* coding sequence “modified” SEQ ID NO. 47. The nucleotide between brackets and bold indicates the position of the SNP 147 bp from the start. The modified nucleotide is “G”, as shown here.

Figure 48 Lettuce *Cullin1* coding sequence “modified” SEQ ID NO. 48. The nucleotide between brackets and bold indicates the position of the SNP 141 bp from the start. The modified nucleotide is “G”, as shown here.

Figure 49 Radish *Cullin1* coding sequence “modified” SEQ ID NO. 49. The nucleotide between brackets and bold indicates the position of the SNP 138 bp from the start. The modified nucleotide is “G”, as shown here.

Figure 50 Spinach *Cullin1* coding sequence “modified” SEQ ID NO. 50. The nucleotide between brackets and bold indicates the position of the SNP 141 bp from the start. The modified nucleotide is “G”, as shown here.

Figure 51 Beetroot *Cullin1* coding sequence “modified” SEQ ID NO. 51. The nucleotide between brackets and bold indicates the position of the SNP 141 bp from the start. The modified nucleotide is “G”, as shown here.

Figure 52 Cucumber Cullin1 protein sequence “modified” SEQ ID NO. 52. The amino acid between brackets and bold indicates the position of the amino acid change caused by the SNP, 49 amino acids from the start. The modified amino acid is ‘M’, as shown here.

Figure 53 Melon Cullin1 protein sequence “modified” SEQ ID NO. 53. The amino acid between brackets and bold indicates the position of the amino acid change caused by the SNP, 49 amino acids from the start. The modified amino acid is ‘M’, as shown here.

Figure 54 Squash Cullin1 protein sequence “modified” SEQ ID NO. 54. The amino acid between brackets and bold indicates the position of the amino acid change caused by the SNP, 49 amino acids from the start. The modified amino acid is ‘M’, as shown here.

Figure 55 Watermelon Cullin1 protein sequence “modified” SEQ ID NO. 55. The amino acid between brackets and bold indicates the position of the amino acid change caused by the SNP, 49 amino acids from the start. The modified amino acid is ‘M’, as shown here.

Figure 56 Eggplant Cullin1 protein sequence “modified” SEQ ID NO. 56. The amino acid between brackets and bold indicates the position of the amino acid change caused by the SNP, 47 amino acids from the start. The modified amino acid is ‘M’, as shown here.

Figure 57 Tomato Cullin1 protein sequence “modified” SEQ ID NO. 57. The amino acid between brackets and bold indicates the position of the amino acid change caused by the SNP, 47 amino acids from the start. The modified amino acid is ‘M’, as shown here.

Figure 58 Pepper Cullin1 protein sequence “modified” SEQ ID NO. 58. The amino acid between brackets and bold indicates the position of the amino acid change caused by the SNP, 47 amino acids from the start. The modified amino acid is ‘M’, as shown here.

Figure 59 Cabbage Cullin1 protein sequence “modified” SEQ ID NO. 59. The amino acid between brackets and bold indicates the position of the amino acid change caused by the SNP, 46 amino acids from the start. The modified amino acid is ‘M’, as shown here.

Figure 60 Carrot Cullin1 protein sequence “modified” SEQ ID NO. 60. The amino acid between brackets and bold indicates the position of the amino acid change caused by the SNP, 48 amino acids from the start. The modified amino acid is ‘M’, as shown here.

Figure 61 Celery Cullin1 protein sequence “modified” SEQ ID NO. 61. The amino acid between brackets and bold indicates the position of the amino acid change caused by the SNP, 47 amino acids from the start. The modified amino acid is ‘M’, as shown here.

Figure 62 Cichory Cullin1 protein sequence “modified” SEQ ID NO. 62. The amino acid between brackets and bold indicates the position of the amino acid change caused by the SNP, 47 amino acids from the start. The modified amino acid is ‘M’, as shown here.

Figure 63 Endive Cullin1 protein sequence “modified” SEQ ID NO. 63. The amino acid between brackets and bold indicates the position of the amino acid change caused by the SNP, 47 amino acids from the start. The modified amino acid is ‘M’, as shown here.

Figure 64 Leek Cullin1 protein sequence “modified” SEQ ID NO. 64. The amino acid between brackets and bold indicates the position of the amino acid change caused by the SNP, 49 amino acids from the start. The modified amino acid is ‘M’, as shown here.

Figure 65 Lettuce Cullin1 protein sequence “modified” SEQ ID NO. 65. The amino acid between brackets and bold indicates the position of the amino acid change caused by the SNP, 47 amino acids from the start. The modified amino acid is ‘M’, as shown here.

Figure 66 Radish Cullin1 protein sequence “modified” SEQ ID NO. 66. The amino acid between brackets and bold indicates the position of the amino acid change caused by the SNP, 46 amino acids from the start. The modified amino acid is ‘M’, as shown here.

Figure 67 Spinach Cullin1 protein sequence “modified” SEQ ID NO. 67. The amino acid between brackets and bold indicates the position of the amino acid change caused by the SNP, 47 amino acids from the start. The modified amino acid is ‘M’, as shown here.

Figure 68 Beetroot Cullin1 protein sequence “modified” SEQ ID NO. 68. The amino acid between brackets and bold indicates the position of the amino acid change caused by the SNP, 47 amino acids from the start. The modified amino acid is ‘M’, as shown here.

Figure 69 The multiple sequence alignment of the Cullin1 coding sequence orthologues (wild type) of various crops: brassica (SEQ ID NO. 8), radish (SEQ ID NO. 15), beet (SEQ ID NO. 17), spinach (SEQ ID NO. 16), leek (SEQ ID NO. 13), squash (SEQ ID NO. 3), watermelon (SEQ ID NO. 4), cucumber (SEQ ID NO. 1), melon (SEQ ID NO. 2), tomato (SEQ ID NO. 6), eggplant (SEQ ID NO. 5), pepper (SEQ ID NO. 7), lettuce (SEQ ID NO. 14), chicory (SEQ ID NO. 11), endive (SEQ ID NO. 12), carrot (SEQ ID NO. 9), celery (SEQ ID NO. 10). Between brackets and

bold is indicated the SNP on position 147 in the Cucumber coding sequence and for other crops on a position corresponding to this position.

Figure 70 The multiple sequence alignment of the Cullin1 amino acid orthologues (wild type) of various crops: beet (SEQ ID NO. 34), spinach (SEQ ID NO. 33), arabidopsis (SEQ ID NO. 69), brassica (SEQ ID NO. 25), radish (SEQ ID NO. 32), leek (SEQ ID NO. 30), eggplant (SEQ ID NO. 22), tomato (SEQ ID NO. 23), pepper (SEQ ID NO. 24), cucumber (SEQ ID NO. 18), melon (SEQ ID NO. 19), watermelon (SEQ ID NO. 21), squash (SEQ ID NO. 20), celery (SEQ ID NO. 27), lettuce (SEQ ID NO. 31), endive (SEQ ID NO. 29), chicory (SEQ ID NO. 28), carrot (SEQ ID NO. 26). Between brackets and bold is indicated the SNP on position 49 in the Cucumber amino acid sequence and for other crops on a position corresponding to this position.

EXAMPLES

EXAMPLE 1

Identification of the Cullin1 gene modification in Cucumis sativus

A F2 crossing population made from a commercially available “high wire” cucumber variety, “Hi Lisa”, was used to create a new genetic map. In total, 375 markers and 398 F2 lines are used. A QTL analysis performed on these crossing populations revealed a major QTL on chromosome 6 that causes a smaller internode length and a smaller leaf surface. Sequencing of the peak marker of the QTL revealed a SNP present in the marker sequence. The particular sequence was polymorphic in the crossing population. The nucleotide sequence of the major QTL on chromosome 6 was identified by means of BLAST. The best BLAST hits for the sequence all resembled the sequence of the *Cullin1* gene.

EXAMPLE 2

Validation of the effect of SNP in the Cullin1 gene on internode length and plant leaf area.

Different populations of *Cucumis sativus* plants, each made with different commercially available ‘high wire’ varieties, having the phenotype of shorter internodes, and smaller leaves, were phenotypically and genetically analysed. See **Table 1** for the phenotypic and genetic data. Plants were measured 3 weeks after sowing. For estimating the leaf area, from the second leaf on (not the cotyledons) all leafs present were measured, and the width and the length of a leaf were measured and multiplied with each other to obtain a (roughly estimation) score for leaf area. In the third column of **Table 1**, the different haplotypes for the *Cullin1* gene SNP are given. The score A

means that the SNP marker scored homozygous wildtype *Cullin1* gene, B means homozygous modified *Cullin1* gene.

In the first population, plants that are homozygous for the modified Cullin1 gene (B), show an internode length that is on average 63% of the length of the plants that score homozygous for the wild type *Cullin1* gene (A). The B plants (homozygous for the modified *Cullin1* gene) show a leaf area that is on average 38% of the length of the A plants (homozygous for the wild type Cullin1 gene).

In the second population, B plants show on average an internode length that is 78% and a leaf area that is 39% of the A plants of the same population.

In the third population, the B plants show on average an internode length of 66% and a leaf area of 47%, compared to the average of the A plants.

Table 1

Results of phenotypic and genotypic analyses of 3 different cucumber lines derived from commercially available high wire varieties. The internode length is defined as the length of the main stem divided by the number of internodes. The leaf area is roughly estimated by measuring from all leafs present on a plant starting with the second leaf (not the cotyledons) the length and the width, multiplying length and width, and computing the average per plant. For the scores of the Cullin1 SNP, score A means that the marker scored A homozygous (wildtype), B means homozygous (modified).

Plant material	Cullin1 haplotype	Internode length (H / I)	Leaf area (J x K)
BPQ -3	B	6	210
BPQ -8	B	4,7	210
BPQ -10	B	5,8	289
BPQ -12	B	4,8	210
BPQ -5	A	6,6	462
BPQ -6	A	9,3	550
BPQ -4	A	7,6	575
BPQ -7	A	8,4	650
BPQ -1	A	8,3	725
BPQ -11	A	8,5	676
BPQ -9	A	10,3	650

13L.3402-2 pl-1	B	4,3	208
13L.3402-2 pl-15	B	5,7	285
13L.3402-2 pl-7	B	5,8	238
13L.3402-2 pl-9	B	6,1	216
13L.3402-2 pl-17	B	6,6	238
13L.3402-2 pl-6	A	6,7	550
13L.3402-2 pl-3	A	6,8	616
13L.3402-2 pl-10	A	6,8	567
13L.3402-2 pl-13	A	7,2	675
13L.3402-2 pl-5	A	8	690
13L.3402-2 pl-8	A	8,6	546
12L. 1480-2 pl-4	B	3,9	156
12L. 1480-2 pl-8	B	4,1	195
12L. 1480-2 pl-6	B	4,3	238
12L. 1480-2 pl-2	B	4,4	195
12L. 1480-2 pl-11	B	4,8	208
12L. 1480-2 pl-5	B	4,9	224
12L. 1480-2 pl-9	A	5,1	336
12L. 1480-2 pl-10	A	7	480
12L. 1480-2 pl-14	A	7,3	437
12L. 1480-2 pl-12	A	7,4	483

EXAMPLE 3

5 *Creation of a melon plant with a Cullin1 gene mutation; Genetic modification of plants by ethyl methane sulfonate (ems) and identification of plants which have the mutated Cullin1 gene.*

Melon seeds were treated with EMS by submergence of approximately 5000 seeds into an aerated solution of 0.07% (w/v) EMS during 24 hours at room temperature. The treated seeds were germinated on paper in a small plastic container and the resulting plants were grown and self-pollinated in a greenhouse to produce seeds. After maturation, these seeds were harvested
10 and bulked in one pool. The resulting pool of seeds was used as starting material to identify the individual plants that show smaller internode length and/or smaller leaf area.

The Cullin1 mutants which were obtained were grown in a greenhouse in order to produce lines by self-fertilisation. Melon plant lines were analysed to confirm the smaller internode

length and smaller leaf area. When a line was segregating for smaller internode length and/or smaller leaf area, plants were selected and after an additional cycle of inbreeding Cullin1 lines were selected. Cullin1 mutants were identified by their shorter internodes and/or smaller leaf area in comparison with control lines.

5

EXAMPLE 4*Identification of crops comprising the Cullin1 gene*

A Basic Local Alignment Search Tool (BLAST) program was used to compare the *Cullin1* gene as identified in SEQ ID NO:1 and the protein sequence as identified in SEQ ID NO:18
10 against the nucleotide coding sequences and protein sequences of other crop plants. This resulted in the identification of candidate *Cullin1* orthologous genes in other plants. The multiple sequence alignment of the Cullin1 coding sequence confirmed that these were orthologous *Cullin1* genes, see Fig . 69. Multiple sequence alignment of the protein sequences confirmed that these were orthologous Cullin1 proteins, see **Fig. 70**.

CLAIMS

1. Modified *Cullin1* gene comprising a modification in the wild type *Cullin1* nucleotide sequence of SEQ ID No: 1:, SEQ ID No: 2, SEQ ID No: 3, SEQ ID No: 4, SEQ ID No: 5, SEQ ID No: 6, SEQ ID No: 7, SEQ ID No: 8, SEQ ID No: 9, SEQ ID No: 10, SEQ ID No: 11, SEQ ID No: 12, SEQ ID NO: 13, SEQ ID NO: 14, SEQ ID NO: 15, SEQ ID NO: 16, SEQ ID NO: 17 which leads to a change in the wild type Cullin1 amino acid sequence of SEQ ID No: 18, SEQ ID No: 19, SEQ ID No: 20, SEQ ID No: 21, SEQ ID No: 22, SEQ ID No: 23, SEQ ID No: 24, SEQ ID No: 25, SEQ ID No: 26, SEQ ID No: 27, SEQ ID No: 28, SEQ ID NO: 29, SEQ ID NO: 30, SEQ ID NO: 31, SEQ ID NO:32, SEQ ID NO. 33, SEQ ID NO: 34 respectively.
2. Modified *Cullin1* gene as claimed in claim 1, wherein the modification of the nucleotide sequence is a SNP on a position that leads to a change in the amino acid sequence of the Cullin1 protein.
3. Modified *Cullin1* gene as claimed in claim 1 or 2, wherein the change in the amino acid sequence is a substitution.
4. Modified *Cullin1* gene as claimed in any one of the claims 1-3, wherein the change in the amino acid sequence is found in the part of the Cullin1 protein between the amino acids on positions 30-60, preferably in the part between the amino acids on positions 40-55 of the cucumber amino acid sequence of SEQ ID No: 18, or, on a position corresponding thereto, for other crops.
5. Modified *Cullin1* gene as claimed in any one of the claims 1-4, wherein the modification in the amino acid sequence is found in the part of the Cullin1 protein that binds SKP1 and/or ETA-2.
6. Modified *Cullin1* gene as claimed in any of the claims 1-5, wherein the modification of the nucleotide sequence is a SNP on position 147 of the cucumber nucleotide sequence of SEQ ID No: 1, or, for a crop other than cucumber, on a position corresponding to position 147 of the cucumber nucleotide sequence of SEQ ID No: 1, leading to an amino acid change on position 49 of the cucumber amino acid sequence of SEQ ID No: 18, or, for a crop other than cucumber, on a position corresponding to position 49 of the cucumber amino acid sequence of SEQ ID No: 18.
7. Modified *Cullin1* gene as claimed in claim 6, wherein the SNP comprises a change from Adenine, Cytosine or Thymine to Guanine.
8. Modified *Cullin1* gene as claimed in any of the claims 1-7, wherein in cucumber the SNP comprises a change from Adenine, Cytosine or Thymine to Guanine and the amino acid substitution comprises a change from Isoleucine to Methionine.

9. Plant, comprising the modified *Cullin1* gene as claimed in any one of the claims 1-8.

10. Plant as claimed in claim 9, wherein the plant belongs to a species selected from the group consisting of *Cucumis sativus*, *Cucumis melo*, *Curcubita pepo*, *Citrullus lanatus*,
5 *Solanum melongena*, *Solanum lycopersicum*, *Capsicum annuum*, *Brassica oleracea*, *Daucus carota*, *Apium graveolens*, *Cichorium intybus*, *Cichorium endivia*, *Allium ampeloprasum*, *Lactuca sativa*, *Raphanus sativus*, *Spinacia oleracea*, and *Beta vulgaris*.

11. Plant as claimed in claim 9 or 10, wherein the modified *Cullin1* gene results in the plant showing a compact growth phenotype as compared to an isogenic plant of the same
10 species not comprising the modification of the *Cullin 1* gene.

12. Plant seed, comprising the modified *Cullin1* gene as claimed in any of the claims 1-8.

13. Plant seed as claimed in claim 12, wherein the plant seed belongs to a species selected from the group consisting of *Cucumis sativus*, *Cucumis melo*, *Curcubita pepo*, *Citrullus lanatus*,
15 *Solanum melongena*, *Solanum lycopersicum*, *Capsicum annuum*, *Brassica oleracea*, *Daucus carota*, *Apium graveolens*, *Cichorium intybus*, *Cichorium endivia*, *Allium ampeloprasum*, *Lactuca sativa*, *Raphanus sativus*, *Spinacia oleracea*, and *Beta vulgaris*.

14. Propagation material capable of developing into and/or being derived from a plant as claimed in any of the claims 9-11, wherein the propagation material comprises the
20 modified *Cullin1* gene as claimed in any of the claims 1-8 and wherein the propagation material is selected from a microspore, pollen, ovary, ovule, embryo, embryo sac, egg cell, cutting, root, hypocotyl, cotyledon, stem, leaf, flower, anther, seed, meristematic cell, protoplast, or cell, or tissue culture thereof.

15. Use of the modified *Cullin1* gene as claimed in any of the claims 1-8 for the development of a plant showing a compact growth phenotype as compared to an isogenic plant not
25 comprising the modified *Cullin 1* gene.

16. Use of the modified *Cullin1* gene as claimed in any of the claims 1-8 or a part thereof for identifying a plant showing a compact growth phenotype as compared to an isogenic plant not comprising the modified *Cullin 1* gene.

17. Use of any of the sequences of SEQ ID No: 1 – SEQ ID No: 17 and/or SEQ ID No: 35-- SEQ ID No: 51 or a part thereof, or a marker derived thereof, as a marker for identifying a
30 plant showing a compact growth phenotype as compared to an isogenic plant not comprising the modified *Cullin 1* gene.

18. Use as claimed in any of the claims 15-17, wherein the plant belongs to a species selected from the group consisting of *Cucumis sativus*, *Cucumis melo*, *Cucurbita pepo*,
35 *Citrullus lanatus*, *Solanum melongena*, *Solanum lycopersicum*, *Capsicum annuum*, *Brassica*

oleracea, *Daucus carota*, *Apium graveolens*, *Cichorium intybus*, *Cichorium endivia*, *Allium ampeloprasum*, *Lactuca sativa*, *Raphanus sativus*, *Spinacia oleracea*, and *Beta vulgaris*.

19. Method for obtaining a plant which shows a compact growth phenotype comprising;

5 a) crossing a plant comprising the modified *Cullin1* gene as claimed in any one of the claims 1-8 with a plant not comprising the modified *Cullin1* gene, to obtain an F1 population;

b) optionally performing one or more rounds of selfing and/or crossing a plant from the F1 to obtain a further generation population;

10 c) selecting a plant that has a compact growth phenotype and the modified *Cullin1* gene of the invention.

20. Method for obtaining a plant which shows a compact growth phenotype comprising;

a) crossing a plant comprising the modified *Cullin1* gene of the current invention with another plant comprising the modified *Cullin1* gene, to obtain an F1 population;

15 b) optionally performing one or more rounds of selfing and/or crossing a plant from the F1 to obtain a further generation population; and

c) selecting a plant that has a compact growth phenotype and the modified *Cullin1* gene of the invention.

21. Method as claimed in claim 19 or 20, wherein the plant belongs to a species selected from the group consisting of *Cucumis sativus*, *Cucumis melo*, *Curcubita pepo*, *Citrullus lanatus*, *Solanum melongena*, *Solanum lycopersicum*, *Capsicum annuum*, *Brassica oleracea*, *Daucus carota*, *Apium graveolens*, *Cichorium intybus*, *Cichorium endivia*, *Allium ampeloprasum*, *Lactuca sativa*, *Raphanus sativus*, *Spinacia oleracea*, and *Beta vulgaris*.

22. Marker for identifying a plant showing a compact growth phenotype, comprising the modified *Cullin1* gene as claimed in any one of the claims 1-8 or a part thereof that comprises the modification.

23. Marker as claimed in claim 22, wherein the modification is a nucleotide substitution on or around position 147 of SEQ ID No:1 of cucumber, or, in case of a crop other than cucumber, on or around a position corresponding to position 147 of SEQ ID No:1 of cucumber, which modification leads to an amino acid substitution in the Cullin1 protein.

24. Method for selecting a plant showing a compact growth phenotype from a population of plants, comprising detecting the presence or absence of a guanine on position 147 of the cucumber nucleotide sequence of SEQ ID NO:1, or, for a crop other than cucumber, on a position corresponding to position 147 of the cucumber nucleotide sequence of SEQ ID No: 1, in the genome of a plant of a population of plants, and selecting a plant comprising a guanine on

position 147 of SEQ ID NO:1, or, for a crop other than cucumber, on a position corresponding to position 147 of the cucumber nucleotide sequence of SEQ ID No: 1.

Fig. 1

ATGACAATGGGCGAGCGGAAGACTATTGACTTGGAGCAGGGATGGGAGTTTATGCAGAAGGGTATC
ACAAAGTTGAAGAACATTCTCGAGGGCTTGCCTGAGCCTCAGTTCAGCTCCGAGGACTACATGATG
CTTTACACTACCAT **[A]** TATAACATGTGCACCCAAAAGCCGCCGCATGATTACTCCCAGCAGCTGT
ATGATAAATATCGTGAATCTTTTGAAGAGTACATCACTTCTATGGTCTTACCATCCTTGAGGGAGA
AGCACGATGAGTTCATGTTGAGAGAACTAGTAAAAAGGTGGACAAACCATAAAGTCATGGTGAGGT
GGCTTTCTCGCTTCTTCCACTATCTTGATCGGTACTTCATCGCTCGAAGGTCACTTCCACCTCTAA
ATGAAGTTGGCCTCACATGCTTCCGCGAATTGGTGTACAAAGAGCTAAATAGTAAAGTGAGGGATG
CAGTAATTTCAATTGATTGATCAAGAACGTGAAGGAGAACAGATTGACAGAGCTCTACTGAAGAATG
TACTAGATATATTTGTGGAAATTGGTATGGGGCAAATGGATTACTATGAAAATGACTTTGAAGCTG
CCATGCTTAAAGATACTGCTGCTTATTACTCTAGGAAGGCTTCCAATTGGATCCTAGAAGATTCTT
GTCCCGATTATATGCTTAAAGCAGAGGAGTGCTTGAAACGAGAAAAGGATAGGGTTTCCCCTATT
TGCACTCTAGTAGCGAGCCAAAGTTGTTGGAGAAAGTTCAACATGAACTATTATCTGTTTATGCTA
CTCAACTGCTGGAAAAAGAGCATTTCAGGATGCCATGCATTGCTTAGAGATGACAAGGTGGAAGATT
TGTC AAGGATGTTCCGTCTATTCTCCAAAATACCGAAGGGACTGGATCCAGTTTCCAACATATTTA
AGCAGCATGTAAGTCTGAAGGAACAGCACTGGTCAAACAGGCAGAAGATGCTGCAAGTAACAAGA
AGGCTGAGAAAAAGGACATAGTTGGTCTGCAGGAACAGGTTTTTTGTAAGAAAAGTGATTGAGCTTC
ACGACAAGTACTTGGCTTATGTGAATGATTGTTTCCAAAACCACACACTTTTCCATAAGGCTCTCA
AGGAAGCTTTTGAAGTATTTTGAATAAGGGTGTTGCTGGAAGTTCTAGTGCAGAATTGCTTGCTA
CCTTTTGTGATAACATCCTTAAGAAAGGTGGGAGTGAGAAGTTGAGTGATGAAGCAATCGAGGAGA
CACTTGAGAAGGTTGTGAAGTTGTTGGCATAACATTTGCGACAAAGATCTGTTTGCTGAATTCTATA
GAAAAAACTTGCCCGAAGGCTTCTCTTTGACAAGAGCGCGAACGATGACCACGAGAGAAGTATAT
TGACCAAATTGAAGCAACAATGTGGTGGTCAGTTCACTTCTAAGATGGAGGGAATGGTTACTGATT
TGACTTTGGCAAGGGAGAACCAAACTAGTTTTGAGGAGTATCTGAGCAATAATCCACAAGCGAGTC
CTGGCATCGACCTGACTGTTACTGTTTTAACTACTGGATTTTGGCCAAGCTACAAGTCTTTTGACC
TCAACCTGCCGGCAGAGATGGTAAAGTGTGTTGAAGTTTTTCAGAGAGTTTTATCAAACAAAAACCA
AGCATCGAAAACCTTACATGGATTTACTCATTGGGTACTTGTAACATCAGTGGAAAATTTGAACCGA
AAACGATGGAGCTGATTGTGACAACCTTATCAGGCTTCTGCCCTGTTGCTATTCAATTCTTCGGATA
GACTAAGTTACTCGGAAATCATGACACAATTAAATTTGAGTGACGATGATGTAGTTAGACTACTCC
ACTCGTTGTCATGTGCCAAGTATAAAATTCTTAATAAGGAACCAAATACGAAAACCATCTCTCCGA
ACGATCATTTTGAAGTTCAATGCAAAATTCTCCGACAAAATGAGGAGAATAAAGATCCCTCTTCGC
CTGTGGATGAGAAAAAGAAAGTCATTGAAGATGTTGACAAGGATCGAAGGTATGCTATTGACGCCT
CAATCGTGCGTATCATGAAGAGTCGGAAGTTCTTGGTCATCAGCAACTAGTGATGGAGTGCGTGC
AGCAATTGGGCCGTATGTTCAAGCCCGATTTCAAGGCGATAAAGAAGAGAATTGAAGACCTGATCA
CTCGGGATTATCTAGAGAGAGACAAAGACAACCCCCACTTGTTTAGGTACTTGGCTTGA

Fig. 2

ATGACAATGGGCGAGCGGAAGACTATTGACTTGGAACAGGGATGGGAGTTTATGCAGAAGGGTATC
ACAAAGTTGAAGAACATTCTTGAGGGCTTGCCTGAGCCCCAGTTCAGCTCCGAGGACTACATGATG
CTTTACACTACCAT **[A]** TATAACATGTGCACCCAAAAGCCGCCGCATGATTACTCCCAGCAGCTGT
ATGATAAATATCGTGAATCTTTTGAAGAGTACATCACTTCTATGGTCTTACCATCCTTGAGGGAGA
AGCATGACGAGTTCATGTTGAGAGAACTAGTCAAAAGGTGGACAAACCATAAAGTCATGGTGAGGT
GGCTTTCTCGCTTCTTCCACTATCTTGATCGGTACTTCATCGCTCGAAGGTCACTTCCACCTCTAA
ATGAAGTTGGCCTCACATGCTTCCGCGAATTGGTGTACAAAGAGCTAAACAGTAAAGTGAGGGATG
CAGTAATCTCATTGATTGATCAAGAACGTGAAGGAGAACAGATTGACAGAGCTCTACTGAAGAATG
TATTAGATATATTTGTGGAAATTGGTATGGGGCAAATGGATTACTATGAAAATGACTTTGAAGCTG
CCATGCTTAAAGATACTGCTGCTTATTACTCTAGGAAGGCTTCCAATTGGATCCTAGAAGATTCTT
GTCCCGATTATATGCTAAAAGCAGAGGAGTGCTTGAAGCGAGAAAAGGATAGGGTTTCCCCTATT
TGCACTCTAGTAGCGAGCCAAAGTTGTTGGAGAAAGTTCAACACGAACTGTTATCTGTGTATGCTA
CTCAACTGCTGGAAAAAGAGCATTTCAGGATGCCATGCATTGCTTAGAGATGACAAGGTGGAAGATT
TGTC AAGGATGTTCCGTCTCTTCTCCAAAATACCGAAGGGATTGGACCCAGTTTCCAACATATTTA
AGCAGCATGTA ACTGCTGAAGGAACAGCACTGGTCAAACAGGCAGAAGATGCTGCAAGTAACAAGA
AGGCCGAGAAAAAGGACATAGTTGGTCTGCAGGAACAGGTTTTTTGTAAGAAAAGTGATTGAGCTTC
ACGACAAGTACTTGGCTTATGTGAATGATTGTTTCCAAAACCACACACTTTTCCATAAGGCTCTCA
AGGAAGCTTTTGAAGTCTTTTGCAATAAGGGTGTTGCTGGAAGTTCTAGTGCAGAATTGCTTGCTA
CCTTCTGCGATAACATCCTTAAGAAAGGTGGGAGTGAGAAGTTGAGTGATGAAGCAATCGAAGAGA
CACTTGAGAAGGTTGTGAAGTTGTTGGCATAACATCTGCGACAAAGATCTGTTTGCTGAATTCTATA
GAAAAAAaCTTGCCCGAAGGCTTCTCTTTGATAAGAGCGCCAACGATGACCACGAGAGAAGTATAT
TGACCAAATTGAAGCAACAATGTGGTGGTCAGTTCACTTCTAAGATGGAGGGAATGGTTACTGATT
TGACTTTGGCAAGGGAGAACC AA ACTAGTTTCGAAGAGTATCTGAGCAATAATCCACAAGCTAGTC
CTGGAATCGACCTAACTGTTACTGTTTTGACTACTGGATTTTGGCCAAGCTACAAGTCTTTTGACC
TCAACCTGCCGGCGGAGATGGTAAAGTGTGTTGAAGTTTTTCAGAGAGTTTTATCAAACAAAACCA
AGCATAGAAA ACTTACATGGATTTACTCATTGGGTACTTGTAACATCAGTGGAAAATTTGAACCGA
AGACGATGGAGCTGATTGTGACAACATATCAGGCTTCTGCCCTGTTGCTATTCAATTCTTCGGACA
GACTAAGTTACTCCGAAATCATGACACAATTAAATTTGAGTGATGATGATGTTGTTAGACTGCTCC
ACTCATTGTCGTGTGCCAAGTATAAAATTCTTAATAAGGAGCCAAATACGAAAACCATCTCACCGA
ACGATCATTTTGAAGTTCAATGCAAAATTCTCCGACAAAATGAGGAGAATAAAGATCCCTCTTCGC
CTGTGGATGAGAAAAaGAAAGTCATTGAAGATGTTGACAAGGATCGAAGGTATGCTATTGACGCCT
CAATCGTGCGTATCATGAAGAGTCGAAAAGTTCTTGGTCATCAGCAACTAGTGATGGAGTGCGTGC
AGCAATTGGGTGCGTATGTTCAAGCCCGATTTCAAGGCGATAAAGAAGAGAATTGAAGACCTGATCA
CTCGGGACTATCTAGAGAGAGACAAAGACAACCCCCACTTGTTTAGGTACTTGGCTTGA

Fig. 3

ATGACAATGGGTGAGCGGAAGACTATTGACTTGGAGCAAGGATGGGAGTTTATGCAGAAGGGAATC
ACAAAATTGAAGAACATTCTGGAAGGATTGCCTGAGCCACAGTTCAGCTCCGAGGACTACATGATG
CTTTACACTACAAT **[A]** TATAACATGTGTACCCAGAAGCCACCGCATGATTACTCCCAGCAGCTGT
ATGATAAATACCGCGAATCGTTTGAGGAGTACATCAGTTCTATGGTTTTACCATCCTTGAGGGAGA
AGCATGACGAATTTATGTTGAGAGAACTGGTCAAAAGGTGGACCAACCATAAAGTCATGGTGAGGT
GGCTTTCTCGCTTCTTCCACTATCTTGATCGATACTTCATTGCTCGAAGGTCACTTCCACCTCTCA
ATGAAGTTGGCCTCACTTGCTTCCGTGAATTGGTGTACAAAGAGCTAAACAGTAAAGTGAGGGATG
CAGTAATTTTCATTGATCGATCAAGAACGTGAAGGAGAGCAGATTGACAGAGCTCTGTTGAAGAACG
TGTTGGATATATTTGTGGAGATTGGGATGGGGCAAATGGATTATTATGAAAATGACTTTGAAGCTG
CCATGCTTAAAGATACTGCTGCTTACTACTCTAGGAAGGCATCAAATTGGATCTTAGAAGATTCTT
GTCCTGATTATATGCTAAAAGCAGAGGAGTGCTTGAGACGAGAAAAGGACCGAGTTTCTCACTATC
TGCACTCTAGTAGCGAGCCAAAGTTATTGGAGAAAGTTCAACATGAACTATTGTCTGTTTATGCTA
CTCAACTGCTGGAGAAAGAGCATTTCAGGATGCCATGCATTGCTTAGAGATGACAAGGTGGAAGATT
TGTC AAGGATGTTCCGTCTCTTCTCCAAAATACCCAAGGGATTGGACCCAGTTTCCAACATATTTA
AGCAGCATGTC ACTGCTGAAGGAACAGCATTAGTCAAACAGGCAGAAGACGCTGCAAGTAACAAGA
AGGCCGAGAAAAAGGACATCGTTGGTCTGCAAGAACAGGTTTTTTGTTAGAAAAGTGATTGAGCTTC
ACGACAAGTACTTGGCATATGTGAATGATTGTTTCCAAAACCACACACTTTTTTCACAAGGCTCTCA
AGGAAGCTTTTTGAAGTCTTTTGCAATAAGGGTGTTGCTGGAAGTTCTAGTGCAGAATTACTTGCTA
CCTTTTGTGATAACATCCTTAAGAAAGGTGGGAGTGAGAAGTTGAGTGATGAAGCAATTGAGGAAA
CACTCGAGAAGGTCGTGAAATTGCTGGCGTATATCTGCGACAAAGATCTGTTTGCTGAATTCTATA
GAAAAAACTCGCCCGAAGGCTTCTCTTCGACAAGAGTGCGAATGATGACCACGAGAGAAGTATAC
TGACGAAATTGAAGCAACAATGTGGTGGTCAGTTTACCTCTAAGATGGAGGGAATGGTCACGGATT
TGACACTGGCAAGGGAGAACC AA ACTAGTTTTGAGGAATATCTGAGCAATAATCCACAAGCTAGTC
CTGGAATCGACTTGACCGTTACCGTTTTGACCACTGGTTTTTTGGCCAAGCTACAAGTCTTTTGACC
TCAACCTGCCGGCGGAGATGGTAAAGTGTGTTGAAGTTTTTCAGGGAATTTTATCAAACAAAACCA
AGCACAGAAA ACTTACGTGGATTTACTCGTTGGGTACCTGTAACATCAGCGGAAAATT CGAACCGA
AAACGATGGAGCTGATCGTGACAACCTATCAGGCTTCTGCCCTGCTGCTTTTCAATTCCTCGGATA
AACTAAGTTACTCCGAGATCATGACTCAATTAACTTGAGTGACGATGATGTTGTTAGACTGCTCC
ACTCGTTGTCGTGTGCGAAGTATAAAATTCTTAACAAGGAGCCAAATACGAAAACCATCTCTCCGA
ACGATCATTTTGAGTTCAACGCAAAATTCTCCGACAAAATGAGGAGAATAAAGATCCCTCTTCCGC
CTGTGGATGAGAAAAAGAAAGTAATAGAAGATGTTGACAAGGATCGAAGATATGCTATCGATGCCT
CGATCGTGCGTATCATGAAGAGTAGGAAAGTTCTGGGTCACCAGCAGTTAGTGATGGAGTGCGT CG
AGCAACTGGGTCTGATGTTCAAGCCTGATTTCAAGGCGATAAAGAAGAGAATCGAAGATCTGATCA
CTCGTGACTATTTAGAGAGAGACAAAGACAACCCCCACTTGTTTAGGTACTTGGCTTGA

Fig. 4

ATGACAATGGGCGAGCGGAAGACTATTGACTTGGAACAAGGATGGGAGTTTATGCAGAAGGGAATC
ACAAAGTTGAAGAACATTCTTGAGGGCTTGCCTGAGCCTCAGTTCAGCTCCGAGGACTACATGATG
CTTTATACCACCAT **[A]** TACAACATGTGCACACAAAAGCCGCCACATGATTACTCCCAGCAGCTAT
ACGATAAATAACCGTGAATCTTTTGAGGAGTATATCACTTCTATGGTCTTACCATCCTTGAGGGAGA
AGCATGACGAGTTCATGTTGAGAGAACTGGTCAAAAGGTGGACGAACCATAAAGTCATGGTGAGGT
GGCTTTCTCGCTTCTTCCACTATCTTGACCGATACTTCATTGCTCGAAGATCACTTCCACCTCTCA
ACGAAGTTGGCCTCACATGCTTCCGTGAATTGGTGTACAAAGAGCTAAACAGTAAAGTGAGGGATG
CAGTAATTTTCATTGATTGATCAAGAACGTGAAGGAGAGCAGATTGACAGAGCTCTACTGAAGAATG
TATTAGATATATTTGTGGAAATTGGGATGGGGCAAATGGATTACTATGAAAATGACTTTGAAGCTG
CCATGCTTAAAGATACTGCTGCTTATTACTCTAGGAAGGCTTCCAATTGGATCCTAGAAGATTCTT
GTCCCGATTATATGCTAAAAGCAGAGGAGTGCTTGAAACGAGAAAAGGATAGAGTTTCTCACTATT
TGCACTCTAGTAGCGAGCCAAAGTTATTAGAGAAAGTTCAACATGAACTGTTATCTGTGTATGCTA
CTCAACTGCTGGAAAAAGAGCATTTCAGGATGCCATGCATTGCTTAGAGATGACAAGGTGGAAGATT
TGTC AAGGATGTTCCGCCTCTTCTCCAAAATACCCAAGGGATTGGACCCAGTTTCCAACATATTTA
AGCAGCATGTC ACTGCTGAAGGAACAGCATTGGTCAAACAGGCAGAAGATGCTGCAAGTAACAAGA
AGGCCGAGAAAAAGGACATAGTTGGTCTGCAGGAACAGGTTTTTTGTAAGAAAAGTGATTGAGCTTC
ACGACAAGTACTTGGCTTACGTGAATGATTGTTTCCAAAACCACACACTTTTTTCACAAGGCTCTCA
AGGAAGCTTTTTGAAGTCTTTTGCAATAAGGGTGTTGCTGGAAGTTCTAGTGCAGAATTACTTGCTA
CCTTTTGTGATAACATCCTTAAGAAAGGTGGGAGCGAGAAGTTGAGTGATGAAGCAATTGAGGAGA
CACTTGAGAAGGTCGTGAAGTTGCTGGCATAACATCTGCGACAAAGATCTGTTTGCTGAATTCTATA
GAAAAAACTTGCCCGAAGGCTTCTCTTTGACAAGAGTGCCAACGATGACCATGAGAGAAGTATAT
TGACCAAATTGAAGCAACAATGTGGTGGCCAGTTCACCTCTAAGATGGAGGGGATGGTCACTGATT
TGACTTTGGCAAGGGAGAACC AA ACTAGTTTCGAGGAGTATCTGAGCAATAATCCACAAGCTAGTC
CTGGAATCGACTTGACTGTC ACTGTTTTGACTACTGGCTTTTGGCCAAGCTACAAGTCTTTTGACC
TCAACCTGCCGGCAGAGATGGTAAAGTGTGTTGAAGTTTTTCAGAGAGTTCTATCAAACAAAAACAA
AGCATAGAAA ACTTACATGGATTTACTCATTGGGTACCTGTAACATCAGCGGAAAATTTGAACCGA
AAACGATGGAGCTGATTGTAACA ACTTATCAGGCTTCTGCCCTGCTGCTATTCAATTCCTCAGATA
GATTAAGTTATTCCGAGATCATGACACAATTAAATTTGAGTGACGATGATGTTGTTAGACTGCTCC
ACTCATTGTCATGTGCCAAGTATAAAATTCTTAATAAGGAGCCGAACACGAAAACCATCTCTCCGA
ATGATCATTTT GAGTTCAATGCAAAATTCTCCGACAAAATGAGGAGAATAAAGATCCCTCTTCCGC
CTGTGGATGAGAAAAAGAAAGTCATTGAAGATGTTGACAAGGATCGAAGGTATGCTATTGATGCCT
CAATCGTGCGTATCATGAAGAGTCGGAAGTTCTGGGTCATCAGCAGCTAGTGATGGAGTGCGT CG
AGCAATTGGGT CGTATGTTCAAGCCCGACTTCAAAGCGATAAAGAAGAGAATCGAAGATCTGATCA
CTCGGGACTATTTAGAGAGAGACAAAGACAACCCCCACTTGTTT TAGGTACTTGGCTTGA

Fig. 5

ATGAACCAACGCAGCACAAATCGATCTGGAACATGGATGGGATTTTCATGCAAAAGGGCATCACAAAG
CTGAAGAACATTCTAGAAGGGCTGCCTGAGCCTCAGTTCAGCTCAGAGGACTATATGATGCTGTAT
ACGACAAT [T] TACAACATGTGTACTCAGAAGCCCCCACATGATTATTCTCAACAGCTGTATGACA
AATATCGTGAAGCTTTTGAAGAATATATCACAACGACGGTATTACCTTCTTTGAGAGAAAAACATG
ACGAGTTCATGTTGCGAGAGTTGGTAAAAAGGTGGTCAAACCATAAGGTCATGGTTAGATGGTTAT
CGCGATTCTTCCATTATCTTGACCGTTATTTTCATTGCTCGGAGATCACTGCCAGGGCTTAATGAAG
TTGGACTAACTTGCTTCCGCGATCTGGTCTACCAAGAGTTGAATGGAAAAGTCAGGGATGCTGTTA
TATCTCTGATTGATCAAGAGCGTGAGGGAGAGCAAATTGACAGAGCTCTACTGAAGAATGTGCTAG
ATATATTTGTTGAAATTGGAATGGGGTCAATGGATTATTATGAGAATGATTTTGAAGCTGCAATGC
TCAAGGACACTGCGGCTTATTATTCTCGCAAAGCTTCTAACTGGATCCTCGAAGATTCATGTCCAG
ATTATATGCTGAAAGCTGAGGAGTGCTTGAAACGGGAGAAGGATAGGGTCTCCCATTTATCTCCATT
CTAGCAGTGAGACAAAGTTGCTTGAGAAAGTGCAACATGAGTTGTTATCTGTGTATGCCAATCAAC
TTCTTGAGAAGGAGCACTCTGGATGCCATGCATTACTTAGAGATGATAAGGTCGATGATTTATCAA
GGATGTATAGACTCTTTTCTAAGATTCCTCGAGGCTTAGAGCCTGTGGCTAATATATTTAAGCAGC
ATGTTACTGCTGAAGGTACAGCTTTGGTGAAACAGGCTGAAGATGCTGCTAGCAACAAAAGGCAG
AGAAGAGAGATGTGGTTGGTTTGCAGGAACAGGTTTTTGTTCGGAAAGTGATTGAGCTTCATGATA
AATATTTGGCGTATGTGAATAACTGTTTCCAAAACCAACACTTTTTTCACAAGGCACTTAAAGAAG
CTTTCGAACTTTTTCTGCAACAAGGGTGTTGCTGGTAGCTCAAATGCTGAACTTCTTGCCACATTCT
GCGACAACATTCTCAAAAAAGGCGGGAGTGAAAAATTGAGTGATGAAGCCATTGAAGAGACGCTGG
AGAAGGTGGTAAAGCTGCTGGCTTATATTAGTGATAAGGACTTGTTTTGCAGAATTCTATAGGAAAA
AGCTCGCCCGGCGGTTGTTATTTGATAAGAGTGCCAATGATGAACATGAGAGAAGTATCCTAACAA
AGTTGAAGCAGCAGTGTGGAGGTCAGTTCACATCAAAGATGGAGGGAATGGTCACAGATTTGACAT
TGGCAAGGGAAAATCAAGCCAGCTTTGAGGAGTATTTGAGCAATAATCCAACAGCAAATCCAGGAA
TTGACTTGACGGTGACTGTCTTGACTACTGGCTTCTGGCCTAGCTACAAGTCTTTTGATCTCAACC
TCCCAGCAGAAATGGTTAGGTGTGTTGAAGTATTCAAGGAGTTTTATCAAACAAAACGAAGCACA
GGAACTTACATGGATATACTCTTTGGGAACTTGCAACATAAATGGAAAATTTGAGGCAAAGACTA
TTGAGCTCGTTGTCACTACTTATCAGGCTTCTGCTCTGCTTCTCTTTAATGCATCAGATAGATTGA
GTTATCAGGAAATCATGACGCAATTAAACCTATCAGATGATGATGTTGTTTCGGCTTCTTCATTCCC
TTTCATGTGCGAAATACAAGATTCTCAACAAGGAGCCAAGCACCAAAACAATTTCTCCGACTGATG
TCTTTGAGTTCAACTCAAAGTTCACTGACAAAATGAGGAGGATCAAGATACCTCTCCCACCAGTTG
ATGAAAAGAAAAAGGTAATTGAAGACGTTGACAAGGATAGGCGGTATGCTATAGATGCCTCAATTG
TGCGTATTATGAAGAGTCGTAAAGTATTGGGCTACCAGCAACTGGTCATGGAGTGCGTTGAGCAGT
TGGGACGCATGTTCAAGCCTGATGTCAAAGCTATCAAGAAGAGAATTGAAGATCTGATAACTAGAG
ATTACCTAGAGAGGGACAAAGATAACCCAAACTTGTTCAAGTACTTGGCATGA

Fig. 6

ATGAACCAACGAAGCACAAATCGATCTGGAACATGGATGGGACTTCATGCAAAGGGGCATTACAAAG
CTGAAGAACATTCTAGAAGGGCTGCCTGAGCCTCAATTCAGCTCAGAGGACTATATGATGCTATAT
ACGACAAT **[T]** TACAACATGTGTACTCAAAAGCCCCCACATGATTATTCTCAACAGCTGTATGACA
AATATCGTGAAGCTTTTGAAGAATATATCACAACAACGGTATTGCCTTCTTTGAGAGAAAAACATG
ACGAGTTTATGTTGCGAGAGTTGGTAAAAAGGTGGTCAAATCATAAAGTCATGGTCAGATGGTTGT
CAAGATTCTTCCATTACCTTGACCGGTATTTTCATTGCCCGGAGATCTCTGCCGGGGCTTAATGAAG
TTGGACTAACTTGCTTCCGCGATCAGGTCTACCAAGAGTTGAATGGAAAAGTCAGGGATGCTGTTA
TATCTCTGATTGATCAAGAGCGTGAGGGAGAGCAAATTGACAGAGCTCTACTTAAGAATGTGCTTG
ATATATTTGTGCGAAATTGGAATGGGGTTAATGGATTATTATGAGAATGATTTTGAAGCTGCAATGC
TCAAGGACACAGCGGCTTATTATTCTCGCAAAGCTTCTAATTGGATCCTCGAAGATTCATGTCCGG
ATTATATGCTGAAAGCCGAGGAGTGCTTGAAACGGGAGAAGGATAGGGTCTCTCATTATCTCCATT
CAAGCAGCGAGACGAAGTTGCTTGAGAAAGTGCAACATGAGTTGTTGTCTGTGTATGCCACTCAAC
TTCTTGAGAAGGAGCACTCTGGATGCCATGCGTTACTGAGAGATGATAAGGTTGAAGATTTATCAA
GGATGTATAGGCTCTTTTCTAAGATTTCTCGAGGCTTAGACCCTGTGGCCAATATTTTTTAAGCAGC
ATGTTACTGCTGAAGGTACAGCTTTGGTAAACAGGCTGAAGATGCTGCTAGCAATAAAAAGGCAG
AGAAGAGAGATGTGGTTGGTTTGCAGGAACAGGTTTTTGTTCGGAAAGTGATTGAACTTCATGATA
AATATTTGGCTTATGTGAATAACTGTTTCCAAAACCACACACTTTTTTCACAAGGCGCTTAAAGAAG
CTTTTGAGCTTTTTCTGCAACAAGGGTGTTGCTGGTAGCTCAAGCGCTGAACTTCTTGCCACCTTCT
GTGACAACATTCTCAAAAAAGGCGGGAGTGAGAAATTGAGTGATGAAGCTATTGAAGAAACGTTGG
AAAAGGTGGTAAAGCTACTAGCTTATATTAGTGATAAGGACTTGTTTGCAGAATTCTATAGGAAAA
AGCTAGCCCGGCGGTTGTTATTTGATAAGAGTGCCAATGATGAACATGAAAGAAGTATCCTAACAA
AGTTGAAGCAGCAGTGTGGGGGGCAGTTCACATCAAAGATGGAGGGAATGGTCACAGATTTGACAT
TGGCAAGGGAAAATCAAGCCAGCTTCGAGGAGTATTTGAGCAATAATCCAATAGCAAATCCAGGAA
TTGACTTGACGGTGACTGTCTTGACTACTGGCTTCTGGCCTAGCTACAAGTCTTTTGATCTCAACC
TCCCAGCAGAAATGGTTAGGTGCGTTGAAGTATTTAAGGAGTTCTATCAAACAAAAACAAAGCACA
GGAAACTTACGTGGATATACTCTTTGGGAACTTGCAACATAAATGGAAAATTTGAGCCAAAAACTA
TTGAGCTCGTTGTCACTACTTATCAGGCTTCTGCTCTGCTGCTCTTTAATGCATCAGATAGATTGA
GTTATCAGGAAATCATGACGCAATTAAACCTATCAGATGATGATGTTGTTTCGGCTTCTTCATTCCC
TTTCATGTGCGAAGTACAAGATACTCAACAAGGAGCCAAGCACCAAAACAATTTCTCCGACTGATG
TCTTTGAGTTCAACTCAAAGTTCACTGACAAAATGAGGAGGATCAAGATACCTCTCCCTCCTGTTG
ATGAGAAGAAAAAGGTAATTGAAGACGTTGACAAGGATAGGCGGTATGCTATAGATGCTTCAATTG
TGCGTATTATGAAGAGCCGTAAAGTATTGGGCTACCAGCAACTAGTCATGGAGTGCGTTGAGCAGT
TGGGGCGCATGTTCAAGCCTGATGTCAAAGCTATCAAGAAGAGAATCGAAGATTTGATAACTAGAG
ATTACCTAGAGAGGGACAAAGATAATCCAAACCTGTTCAAGTACTTGGCATGA

Fig. 7

ATGAACCAGCGTTCCACAATCAATCTAGAACATGGATGGGACTTCATGCAAAGGGGCATTACAAAG
CTGAAGAACATTCTAGAAGGGCTGCCCCGAGCCTCAGTTCAGCTCAGAGGACTATATGATGCTGTAT
ACGACAAT [T] TACAACATGTGTACTCAGAAGCCCCCACATGATTATTCTCAACAGCTGTATGACA
AATATCGTGAAGCTTTTGAAGAATATATCACAACAACGGTATTGCCTTCTTTGAGAGAAAAACATG
ACGAGTTCATGTTGCGAGAGCTGGTAAAAAGGTGGTCAAACCATAAGGTCATGGTCAGATGGTTAT
CGCGATTCTTCCATTATCTTGATCGCTATTTTCATTGCCCCGAGATCTCTACCGGGGCTTAATGAAG
TTGGACTAACTTGCTTCCGAGATCTGGTCTACCAAGAGTTGAATGGAAAAGTCAGGGATGCTGTTA
TATCTCTGATTGATCAAGAGCGTGAGGGAGAGCAAATTGACAGAGCTCTACTGAAGAATGTGCTAG
ATATATTTGTTGAAATTGGAATGGGGTCGATGGATTATTATGAGAATGATTTTGAAGCTGCAATGC
TCAAGGACACCGCAGCTTATTATTCTCGCAAAGCTTCTAACTGGATACTTGAAGATTCATGTCCAG
ATTATATGCTGAAAGCCGAGGAGTGCTTGAAACGGGAGAAAGATAGGGTCTCTCACTATCTTCATT
TAAGCAGTGAGACAAAGTTGCTTGAGAAAGTGCAACATGAGTTGTTGTCTGTGTATGCCACTCAAC
TTCTTGAGAAGGAGCACTCTGGGTGCCATGCGTTACTAAGAGATGATAAGGTTGAAGATTTATCAA
GGATGTATAGGCTCTTTTCTAAGATTCCTCGAGGCTTAGACCCTGTGGCTAATATATTTAAGCAGC
ATGTTACTGCTGAAGGTACAGCTTTGGTCAAACAGGCTGAAGATGCTGCTAGCAACAAAAGGCAG
AGAAAAGAGATGTGGTTGGTTTGCAGGAACAGATTTTTGTTTCGGAAAGTGATTGAGCTTCATGATA
AGTATATGGCATATGTGAATAACTGTTTCCAAAACCACACACTTTTTTACAAGGCGCTTAAAGAAG
CTTTCGAACTTTTTCTGCAACAAGGGTGTTGCTGGTAGCTCAAGTGCTGAACTTCTTGCCACATTCT
GCGACAATATTCTCAAGAAAGGCGGGAGTGAGAAATTGAGTGATGAAGCCATTGAAGAGACGCTGG
AGAAGGTTGTAAAGCTGCTAGCATATATTAGTGACAAGGACTTGTTTGCAGAATTCTATAGGAAAA
AGCTAGCCCGGCGGTTGTTATTTGATAAGAGTGCCAATGATGAACACGAGAGAAGTATCCTTACAA
AGTTGAAGCAGCAGTGTGGGGGCCAGTTCACATCAAAGATGGAGGGAATGGTGACAGATTTGACAT
TGGCAAGGGAAAATCAAGCCAGCTTTGAGGAGTATTTGAGCAACAATCCAGCAGCAAATCCAGGAA
TTGACTTGACGGTGACTGTCTTGACTACTGGCTTCTGGCCTAGCTACAAGTCTTTTGATCTCAACC
TCCCAGCAGAAATGGTTAGGTGCGTTGAAGTATTCAAGGAGTTTTATCAAACAAAACGAAGCACA
GGAACTTACGTGGATATACTCTTTGGGAACTTGCAATATAAATGGAAAATTTGAGCCAAAGACTA
TTGAGCTCGTTGTCACTACTTATCAGGCTTCTGCTCTGCTGCTCTTTAATGCATCGGATAGATTGA
GTTATCAGGAAATCATGACGCAACTAAACCTATCAGATGATGATGTTGTTTCGGCTTCTTCATTCCC
TTTCATGTGCGAAGTACAAGATTCTCAACAAGGAGCCAAGCACCAAAACAATTTCTCCGACTGATG
TCTTTGAGTTCAATTTTAAGTTCACTGACAAAATGAGGAGGATCAAGATACCTCTCCCTCCTGTTG
ATGAGAAGAAAAAGGTAATTGAAGATGTTGACAAAGATAGGCGGTACGCTATAGATGCTTCAATTG
TGCGTATTATGAAGAGTCGTAAAGTATTGGGCTACCAGCAACTGGTCATGGAGTGTGTTGAGCAGT
TGGGACGTATGTTCAAGCCTGATGTCAAAGCTATCAAGAAGAGAATTGAAGATTTGATAACTAGAG
ATTACCTAGAGAGGGACAAAGATAATCCGAACTTGTTCAAGTACTTGGCATGA

Fig. 8

ATGGAGCGCAAGACGATTGACTTGGACCAAGGATGGGACTATATGCAGACTGGTATCACTAAGCTG
AAACGGATTCTTGAGGGGCTGCCTGAGCCGCAGTTTGACTCTGAGCAATACATGATGCTCTATACG
ACTAT **[c]** TACAACATGTGCACTCAGAAACCTCCTCATGATTACTCACAGCAGCTTTATGACAAGT
ATCGTGAAGCATTGAGGAGTATATTCACTCAACTGTTTTGCCTGCTCTAAGGGAGAAGCATGATG
AGTACATGCTGAGGGAGCTGGTTAAGAGATGGTCTAACCATAAAGTTATGGTTTCGATGGCTATCCC
GCTTCTTCTACTATCTTGACCGTTACTTCATTGCTCGGAGGTCACTTCCACCCCTGAATGAAGTTG
GCCTGACTTGCTTCCGTGACCTGGTTTATAACGAGTTGCATTCCAAGGTCAAAGATGCTGTAATAG
CACTTGTTGATAAAGAACGGGAGGGTGAGCAGATTGACAGGGCTCTATTGAAAAACGTATTAGACA
TTTATGTAGAGATTGGAATGGGACAGATGGAAAGATACGAGGAGGATTTTGAAAGCTTCATGCTTT
TAGATTCAGCATCTTACTATTCTCGCAAGGCGTCAAGCTGGATCCAAGAAGATTCTTGCCCTGATT
ACATGCTGAAGTCTGAAGAATGTCTTAAGAAGGAGAGGGAGAGAGTGGCTCACTACCTTCACTCAA
GCAGCGAGCCAAAGCTGGTTGAGAAAGTACAACATGAGCTGTTGGTAGTGTATGCAAATCAGCTTC
TAGAAAAAGAGCATTTCAGGGTGCCGTGCATTGCTGAGAGATGACAAGGTTGATGACCTCTCCAGGA
TGTACAGGCTTTATCATAAAATTGTGAAAGGTTTGGAACCTGTTGCAAACATATTTAAGCAGCATG
TCACAGCAGAGGGTAACGCACTTGTCCAACAGGCCGAAGACACGGCCACTAATCATGCTGCAAATA
CTGCTAGCGTGCAGGAACAGGTTCTTATCAGAAAAGTGATTGAACTACATGATAAATACATGGTCT
ATGTTGTTGAGTGTTTCCAGAACCACACCCTCTTCCACAAGGCATTGAAAGAGGCATTTGAGATAT
TCTGTAACAAAACAGTCGCTGGAAGTTCTAGTGCTGAATTGCTTGCAACATTTTGCGACAATATTC
TCAAGAAGGGGGGAAGTGAAAAGCTGAGCGATGAAGCTATTGAAGATACCCTTGAGAAGGTGGTCA
AATTGCTTGCTTATATAAGTGACAAGGATCTTTTCGCCGAGTTCTACAGGAAGAAGCTGGCCCGTA
GGCTCTTATTTGATCGCAGTGCTAATGATGATCATGAGAGAAGTATCCTGACAAAGCTCAAGCAAC
AATGTGGTGGGCAGTTTACTTCGAAGATGGAGGGCATGGTGACTGATTTGACATTGGCAAGGGAAA
ACCAAAACAGCTTCGAGGAGTATCTTGGAATAACCCCGCTGCAAACCCAGGGATTGATTTGACCG
TAACTGTTCTTACCACTGGTTTTTTGGCCAAGTTACAAATCATTTGACATAAATCTACCCGCTGAAA
TGGTCAAGTGTGTTGAAGTTTTCAAAGGGTTTTATGAAACAAAGACAAAACATAGGAACTTACCT
GGATCTACTCACTAGGAACCTGCCACCTCAATGGGAAGTTTGATGTCAAGCCCATTGAGTTAGTTG
TGTCTACATAACCAGGCTGCTGTGCTTCTGCTGTTCAACACAACAGACAAATTGAGCTACACTGATA
TCCTAACTCAGCTGAACCTGAGCCACGAAGATCTAGTGAGGTTGCTTCATTCCTTGTCATGTGCTA
GATACAAGATTCTTCTCAAGGAGCCAAGCACAAAGACTGTTTCCCAGTCTGATTCTTTTGAATTCA
ACTCCAAATTCACCGACAGAATGCGGAGAATAAAGATCCCTCTCCCACCTGTTGATGAGAGGAAGA
AAGTTGTGGAAGACGTGGACAAAGACAGACGCTATGCGATTGATGCTGCCATTGTGAGGATCATGA
AGAGCAGGAAAGTATTGGGACATCAACAACCTTGTTTCTGAGTGCGTTGAGCAACTTAGCCGAATGT
TCAAGCCTGATATCAAGGCAATCAAGAAGCGCATGGAGGATTTGATAACGAGAGATTATCTGGAGA
GGGACAAGGAGAACGCTAACATGTTTAGGTACTTGGCTTAG

Fig. 9

ATGATGATTGAGCGGAAACTATAGACCTGGAGCAGGGATGGGACTTTATGCAAAGGGAATCACA
AAGCTAAAGAATATTTTAGAAGGCTTTCCGGAGCCGCAATTCAGCTCGGAGGATTATATGATGCTT
TATACAACCTAT [c] TATAACATGTGTACACAGAAACCTCCACATGATTACTCTCAGCAGCTGTATG
AAAAGTATCGTGAAGCTATTGAGGAGTACATTACTTCTACAGTATTGCCTTCATTGAGAGAGAAGC
ATGATGAATTCATGCTTAGAGAACTTGTGAAGAGATGGTCTAATCATAAGGTCATGGTCAGGTGGC
TTTCTCGATTCTTTCACCTATCTTGATCGCTATTTTATTGCTCGGAGGTCACCTTCCACCACTTCATG
AAGTTGGACTCACTTGCTTTCGGGACCTGGTTTACCAGGAGATAAATGGGAAAGTAAGGGATGCTG
TAATATCATTGATTAATCAAGAGCGCGAGGGAGAGCAAATTGACCGAGCTTTGTTGAAGAATGTTT
TAGATATATTTGTTGAAGTTGGAATGAGTCAAATGGATTATTATGAGAATGACTTTGAAGCAGACA
TGCTCAAAGATACAGCAGCATACTATTCTCGAAAGGCTTCCAACCTGGATCTTAGAAGATTCTTGTC
CAGATTATATGCTCAAAGCGGAAGAGTGTTTGAGACGGGAAAAGGACAGGGTCTCTAACTACCTTC
ATTCTAGTAGTGAACCCAAGTTGCTTGAGAAAGTTCAACATGAGTTACTATCACACTATGCAACTC
AGCTGCTTGAGAAAGAACACTCTGGGTGTCATGCATTGCTTAGGGATGACAAGGTGGCAGATTTAT
CAAGGATGTATAGGCTCTTCTCTAAAATACCTCGAGGCCTAGATCCCGTGTCTAATATTTTCAAGC
AGCATGTTACTGCTGAAGGTACAGCTTTGGTCAAACAAGCAGAAGATGCAGCTAGCAACAAGAAGG
CAGAGAAGAGAGATGTAGTAGGTTTACAAGAACAGGTTTTTGTGAGGAAAATAATTGAATTGCATG
ACAAATACCTTACATACGTAAATGACTGTTTTACAAACCACACTCTCTTCCATAAGGCGCTTAAGG
AGGCTTTTGAAATCTTCTGCAATAAGGGTGTCTCTGGAAGCTCTAGTGCAGAATTACTTGCCACAT
TCTGTGATAATATTCTCAAGAAAGGTGGAAGCGAGAAGTTAAGTGATGAAGCCATTGAGGAAACAC
TTGAGAAGGTTGTAAGGTTGCTTGCTTATATAAGTGACAAAGACTTATTTGCTGAATTTTATAGGA
AAAAGCTTGACGCGGTCTCTTATTCGACAAGAGTGCCAATGATGAGCATGAGAGAAGTATATTGA
CTAAGCTGAAGCAACAATGTGGGGGTCAATTTACATCAAAGATGGAAGGAATGGTCACTGACTTGA
CGTTGGCAAAGGAAAATCAGTCCAACCTTCGAGGAGTACCTCAATAATAATTCAAACGTAAATCCTG
GAATTGACTTGACAGTTACTGTTCTAACCCTGGGTTTTGGCCAAGTTACAAATCTTTTCGATCTCA
ACCTCCCAGCAGAGATGGTCAAATGTGTTGAAGTTTTTAGAGAATTCTACCAAACAAAAACAAAGC
ACAGAAAACCTGACATGGATATACTCTTTGGGTACTTGTAACATCATTGGAAAATTTGATCCAAAA
CCATGGAGCTTATTGTGACAACATAACCAGGCCTCTGCTCTGCTGCTATTTAACTCTTCTGATAGAC
TTAGTTATAATGAAATAATGACTCAGTTGAACTTGTCGGATGATGATGTTGTCAGACTACTTCATT
CTCTTTCGTGTGCAAAGTACAAGATTCTATCTAAAGAGCCGAACACCAAACTATATCTCCAACCTG
ATTGCTTTCAGTTCAATTCCAAATTTACTGATAAAATGAGGAGGATTAAGATTCCACTTCCCCCAG
TGGATGAGAAGAAAAAGGTAATTGAAGATGTTGATAAAGACAGGCGATATGCTATAGATGCTTCAA
TTGTCCGTATCATGAAGAGCCGCAAAGTTTTGGGTATCAGCAGCTAGTAATGGAGTGCGTTGAAC
AATTGGGTTCGCATGTTTAAGCCTGATGTCAAAGCAATCAAGAAGAGAATCGAAGATTTAATAACTC
GGGATTATCTGGAAAGAGACAAGGACAATGCCAACTTGTTTCAGGTATCTGGCATGA

Fig. 10

ATGAACGAGCGGAAGACTATCGATTTGGATAATGGATGGGAATTTATGCAGAAAGGGATCACTAAG
TTGAAGAAGATTCTCGAAGGTCAACCTGAGCCTCAGTTTAGCTCCGAGGACTATATGATGCTTTAC
ACAACTAT [c] TATAATATGTGTACGCAGAAGCCTCCACATGATTATTCTCAACAGCTGTATGACA
AGTACCGTGAGGCCTTTGAGGAGTACATAACTTCAACTGTCCTGCCTTCTTTACGAGAGAAGCATG
ATGAGTTTATGTTGAGAGAGCTCGTGAATAGATGGACAAACCATAAAGTCATGGTCAGGTGGCTTT
CTCGATTCTTTCACTATCTTGATCGGTACTTCATTGCGAGGAGGTCACTTCCTGCACTTCATGAAG
TTGGACTCACGTGCTTCCGGGATCTGGTCTATCAGGAGCTGAAAGTTAAAGTGAGGGATGCTGTAA
TATCTCTGATCGATCAAGAGCGTGAGGGGGAACAGATTGACCGAGCTTTATTAAAGAACGTGTTAG
ATATATTTGTTGAAATCGGAATGAGTCAAATGGATCAATATGAGAATGACTTTGAAGAAGCCATGC
TCACTGATACTGCTGCTTACTATTCTCGAAAAGCTTCAAACCTGGATCCTTGAAGATTCTTGTCCTG
ATTATATGTTAAAGGCAGAAGAATGTTTGGCAGCAGAGAAGGACAGGGTTTCCCACTACCTACATT
TTAGTAGCGAGCCAAAGTTGCTTGAGAAAGTGCAACATGAGCTGCTATCTGTGTATGCAACCCAAT
TACTCGAGAAGGAACATTCTGGTTGTCATGCATTGCTTAGGGATGACAAGGTGGATGATTTGTCTA
GGATGTACAGACTCTTCTCGAAAATACCTAAAGGCCTGGATCCAGTTTCTTATATTTTTTAAGCAGC
ATGTTACAAATGAAGGGATGGCATTGGTTAAACAAGCAGAAGATGCAGCAAGCAACAAGAAGGCAG
AAAAGAGAGACGTGGTTAGTTTACAGGAGCAGGTTTTTGTTAGAAAAATTATTGAATTACATGACA
AATACCTCGCCTATGTGAATGACTGCTTTACAAACCATACTCTTTTCCATAAGGCTCTCAAGGAGG
CTTTTGAAATCTTTTGCAACAAGGGTGTTGCTGGAAGCTCTAATGCTGAACTACTTGCTACTTTCT
GTGATAACATCCTCAAAAAGGGTGGGAGTGAGAAATTAAGTGATGAGGCTATTGAAGAAACACTTG
AGAAGGTAGTAAAATTGTTAGCTTACATTAGCGATAAAGACTTGTTTCGCTGAATTTTACAGAAAAA
AGCTTGACACGGAGACTTCTCTTTGATAAGAGTGCAAATGACGAGCATGAACGAAGTATTTTGACTA
AACTAAAGCAACAGTGCGGTGGTCAGTTCACATCGAAAATGGAGGGGATGGTCACAGATTTGACTT
TGGCTAAAGAAAATCAATCCAGCTTTGAGGAGTATCTGGGAAATAATGCCAATGTGAATCCTGGCA
TTGACTTGACGGTTACTGTTCTGACCACTGGCTTCTGGCCTAGTTATAAATCCTTTGATCTCAACC
TTCCTGCTGAGATGGTCAAGTGCGTTGAAGTATTTAGAGAATTTTATCAAACAAAAACGAAGCATA
GAAAGCTCACATGGATATATTCTCTGGGTACTTGTAATATCAATGGAAAATTTGAACCCAAAACCA
TTGAGCTGATTGTGACAACCTACCAGGCCTCTGCTCTCCTGTTATTTAATACTTCTGATAGGTTGA
GTTATCAAGAAATCATGACTCAGTTAAATTTGTCTGGATGATGATGTTGTTTCGCCTGCTTCATTCCC
TTTCATGTGCCAAGTATAAAATTCTTACTAAAGAGCCGAACAACAAAACAATTTCCCCTACGGATT
ACTTTGAGTTCAACTCCAAGTTCACTGACAAAATGAGGAGAATTAAGATTCCACTACCTCCAGTTG
ATGAGAAGAAAAAGGTAATTGAAGATGTTGACAAGGACCGGCGATATGCCATTGATGCATCTATTG
TCCGCATTATGAAGAGCCGTAAAGTTTTGGGCTACCAACAATTGGTTATGGAATGTGTTGAGCAAT
TGGGACGCATGTTTAAGCCTGATGTCAAAGCAATTAAGAAGAGAATCGAAGATTTAATAACGCGTG
ATTATCTGGAAAGAGACAAGGATAATGCCAACCTTTTCAGATATTTGGCATGA

Fig. 11

ATGAATGAAAGAAAAACAATAGACTTAGAACAAGGATGGGACTTCATGCAGAAAGGCATAACAAAG
TTGAAGAACATTCTAGAAGGTCTTCCCGAGCCACAATTCAGCTCGGAAGATTACATGATGCTCTAC
ACAACCAT [c] TACAATATGTGCACACAAAAACCGCCACATGATTACTCTCAACAATTGTATGACA
AATACCGCGAGTCTTTTGAAGAGTACATTACTTCAACGGTGTTACCTTCTTTAAGAGAGAAGCATG
ATGAGTTTATGCTTAGAGAGCTTGTTAGAAGATGGTCAAATCATAAAGTGATGGTTAGGTGGCTTT
CTAGATTCTTCCATTATCTTGATCGATACTTCATTGCCCCGAAGATCTCTTCCACCATTAAATGAAG
TTGGACTTGCGTGTTTTTCGTGATCTGGTATACCAAGAGGTGAATGGGAAAGTGAGAGATGCTGTAA
TATCTTTGATTGATCAAGAGCGTGAAGGCGAGCAAATTGACCGAGCATTACTCAAGAATGTTCTAG
ATATATTTGTTGAAATAGGAATGGGACAAATGGAATATTATGAGAATGATTTTGAAGCATCCATGC
TTAATGATACAGCAGCATATTATTCACGCAAAGCTTCCAATTGGATTCTAGAAGATTCTTGTCCAG
ATTATATGCTCAAAGCTGAGGAGTGCTTAAAAAGAGAAAAGGACAGAGTTTCTCATTATCTTCATT
CCAGCAGTGAACCAAAGCTTCTTGAGAAAGTTCAAACAGAGTTATTATCTGTTTTATGCAACTCAAT
TGCTTGAAAAGGAGCACTCCGGTTGTCATGCATTACTTAGGGATGACAAGGTTGATGATTTATCAA
GAATGTACAGACTCTTTTCAAAGATACAAAAAGGGCTGGATCCTGTTTCTAGTATGTTTAAGCAGC
ATGTCACTGCTGAAGGCACAACATTGGTTAAACAGGCAGAAGATGCAGCAAGTACTAAGAAGGCTG
AAAAGAGAGACGTGGTTGGCTTACAAGAACAGGTTTTTGTTAGAAAAGTTATCGAGCTTCATGACA
AGTACCTTGCAATATGTAAATGACTGTTTTATGAATCATACCCTGTTTCACAAGGCTCTTAAAGAGG
CATTTGAAATATTCTGCAACAAGGGCGTTGCTGGAAGTTCAAGTGCAGAATTACTTGCTACATTTT
GTGATAATATTCTTAAAAAAGGTGGAAGTGAAAAATTGAGTGATGAAGCCATTGAGGACACACTTG
AGAAGGTGGTAAAGTTGCTTGCTTACATCAGCGATAAAGATCTATTTGCAGAGTTTTTATAGGAAAA
AACTGGCTAGACGGCTTTTATTTGACAAAAGTGCAAATGATGAGCACGAAAGAAGTATTTTGACAA
AATTGAAACAACAATGTGGCGGTCAATTTACATCAAAAATGGAAGGAATGGTTACAGATTTGACAT
TGGCAAAAGAAAATCAATCACATTTTGAGGAGTATTTGAATAATAATCCCAATGTTAGCCCTGGCA
TTGACTTGACCGTGACTGTGTTGACCACTGGTTTTTGGCCTAGTTACAAATCTTTTGACCTAAATC
TCCCTGCAGAAATGGTCAAATGCGTTGAAGTTTTTCAGAGAATTTTATCAAACAAAAACAAAACACA
GAAAACTCACATGGATATATTTCATTGGGCACCTGCAATATAAACGGAAAATTCTGAACCAAAAACCA
TGGAGCTAATCGTTACAACCTACCAGGCATCTGCTTTATTACTGTTCAACTCATCAGATCGATTGA
GTTATCAAGAAATCATGACTCAATTAACTTATCAGATGATGATGTTGTTAGACTACTCCATTCAT
TATCATGTGCAAAATATAAAATTTTATTAAAAGAACCAAATACAAAACAATCTCTCCAACCTGATT
TCTTTGAATTCAACTCAAAGTTTACAGATAAAATGAGAAGGATCAAGATTCCTCTACCTCCTGTTG
ATGAAAAGAAAAAAGTAATTGAAGATGTTGACAAAGACCGACGTTATGCAATTGATGCTTCAATTG
TACGGATAATGAAAAGCAGAAAAGTTCTTGGATACCAACAATTGGTCATGGAATGTGTTGAACAAT
TAGGCCGTATGTTTAAGCCTGATGTAAAAGCAATCAAGAAACGTATTGAAGATCTCATAACTCGTG
ATTATCTTGAAAGAGACAAAGAAAATCCAAATTTGTTTCGGTACTTGGCATGA

Fig. 12

ATGAATGAAAGAAAAACAATAGACTTAGAACAAGGATGGGACTTCATGCAAAAAGGCATAACAAAG
TTGAAGAACATTCTAGAAGGTCTTCCCGAGCCACAATTCAGCTCAGAGGATTACATGATGCTCTAC
ACAACCAT [c] TACAATATGTGCACACAAAAACCGCCACATGATTACTCTCAACAATTATATGACA
AATACCGCGAGTCTTTTGAAGAGTACATAACTTCAACGGTGTTACCTTCTTTAAGAGAGAAGCATG
ATGAGTTTATGCTTAGAGAGCTTGTTAGAAGGTGGTCAAATCATAAAGTGATGGTTAGGTGGCTTT
CTAGATTCTTCCATTATCTTGATCGATACTTTATTGCAAGAAGATCTCTTCCACCATTAAATGAAG
TTGGACTTGCGTGTTTTTCGTGATCTGGTATACCAAGAGGTGAATGGAAAAGTGAGAGATGCTGTAA
TATCTTTGATTGATCAAGAGCGTGAAGGCGAGCAAATTGACCGAGCATTACTGAAGAATGTTCTAG
ATATATTTGTTGAAATAGGAATGGGACAAATGGAATATTATGAGAATGATTTTGAAGCATCTATGC
TTAATGATACAGCAGCATATTATTCACGCAAAGCTTCCAAGTGGATTCTAGAAGATTCTTGTCCAG
ATTATATGCTCAAAGCTGAGGAGTGCTTAAAAAGAGAAAAGGACAGAGTTTCTCATTATCTTCATT
CAAGTAGTGAACCAAAGCTTCTTGAGAAAGTTCAAACAGAGTTATTATCTGTTTTATGCAACTCAAT
TGCTCGAAAAGGAACACTCAGGTTGTCATGCATTACTTAGAGATGACAAGGTTGATGATTTATCAA
GAATGTACAGACTCTTTTCAAAGATACAAAAAGGACTGGATCCTGTTTCCAGTATGTTTAAGCAGC
ATGTCACTGCTGAAGGCACAACATTAGTAAAACAAGCAGAAGATGCAGCAAGTACTAAGAAGGCTG
AAAAGAGAGACGTGGTTGGCTTACAGGAACAGGTTTTTGTTAGAAAAGTAATCGAGCTTCATGACA
AGTACCTCGCATATGTAAACGACTGTTTTATGAATCACACATTGTTCCACAAGGCTCTTAAAGAGG
CATTTGAAATATTCTGCAACAAGGGCGTTGCTGGAAGTTCAAGTGCAGAATTACTTGCCACATTTT
GTGATAATATTCTTAAAAAAGGTGGAAGTGAAAAATTGAGTGATGAAGCCATTGAAGACACACTTG
AGAAGGTAGTAAAGTTGCTTGCTTACATCAGCGATAAAGATCTATTTGCAGAGTTTTTATAGGAAAA
AACTGGCTAGAAGGCTTTTATTTGACAAAAGTGCAAATGATGAGCATGAAAGAAGTATTTTAACAA
AGTTGAAGCAACAATGTGGTGGTCAGTTTACATCAAAGATGGAAGGAATGGTTACAGATTTAACAC
TGGCAAAAGAAAATCAATCACATTTTGAAGGAGTATTTGAATAATAATCCCAATGTTAGCCCTGGCA
TTGACTTGACCGTGACTGTGTTGACCACGGGATTTTGGCCTAGTTACAAATCTTTTGACCTAAATC
TTCCTGCAGAAATGGTCAAATGCGTTGAAGTTTTTCAGAGAATTTTATCAAACAAAAACAAAACACA
GAAAACCTCACATGGATTTATTCAATTGGGCACCTGCAATATTAACGGAAAATTCTGAACCAAAAACCA
TGGAGCTAATCGTTACAACCTACCAGGCATCTGCTTTATTGTTATTCAACTCATCAGATCGATTAA
GTTATCAAGAAATCATGACTCAATTAAATTTATCAGATGATGATGTTGTTAGACTACTACATTCAT
TATCATGTGCAAAATATAAAATTTTATTAAAAGAACCAAATACCAAACAATATCTCCAACCGATT
TCTTTGAATTCAACTCAAAGTTTACAGATAAAATGAGAAGGATCAAGATTCCTCTACCTCCTGTTG
ATGAAAAGAAAAAAGTAATTGAAGATGTTGACAAAGATAGAAGGTATGCAATTGATGCTTCAATTG
TACGAATAATGAAAAGCAGAAAAGTTCTTGGATACCAACAATTGGTTATGGAGTGTGTTGAACAAT
TAGGCCGTATGTTTAAGCCTGATGTAAAAGCAATCAAGAAGCGTATTGAAGATTTGATAACGCGTG
ATTATCTTGAAAGAGACAAAGAAAATCCAAATTTGTTTCGGTACTTGGCATGA

Fig. 13

ATGTCGTTGCACGAAAGGAAAACCATTTGATTTGGAGCAGGGATGGGCTTTTATGCAGAAAGGGATC
ACCAAACCTGAAGAATATTCTTGATGAGTTGAATGAACCTCAGTTCAGCTCAGAGGATTACATGATG
CTCTATACGACTAT [C] TATAATATGTGTACTCAGAAGCCGCCACATGATTATTCTCAGGAGTTGT
ATGATAAGTACCGAGAGTCCCTTTGAAGAGTATATCACTACCACTGTGCTTCCTTCATTGAGAGAAA
AGCATGATGAATACATGTTAAGGGAGCTCGTGAGAAGGTGGTCAAATCATAAAATAATGGTTAGAT
GGCTTTCACGCTTTTTTCCATTATCTTGATCGCTACTTTATAGCACGAAGATCATTGCCTGCTCTTA
ATGAAGTCGGTCTCACTTGTTTCCGTGATCTGGTGTACAACGAAGTCCATGGGAAAGTTAAAGATG
CCGTGATCTCATTGATTGACCAAGAGAGGGGAAGGGGAGCAAATTGACAGAGCTTTATTAAAGAATG
TTTTGGGTATTTTTGTAGAGATTGGTTTGGGAAGCATGGAATGTTATGAGAATGATTTTGAAACAT
CAATGCTTAATGCTACAGCAGCCTATTATTCACGAAAAGCTTCAAATTGGATTCTAGAAGATTCAT
GTCCAGATTATATGCTAAAAGCCGAGGAGTGCTTAAAACATGAGAAAGATAGAGTTGCTCATTATT
TGCATTCAAGCAGTGAACAGAAGCTGTTAGAGAAAGTGCAACATGAGTTACTTTTCGTATATGCAA
GTCAACTTCTCGAGAAAGAACATTCCGGATGTCATGCATTGCTTCGCGATGACAAGGTGGGAGATC
TTTCACGCATGTATCGGCTGTTCTGTAGAATTACACGTGGTTTGGACCCTGTGTCTCAAATATTTA
AGCAGCATGTGACTGCAGAAGGTACTGCTTTGGTCAAACATGCCGAAGATGCTGCAAGTAACAAGA
AGGCCGAGAAAAAAGACATTGTTGGTTTGAAGAGCAGGTCTTCGTTAGGAAAGTAATTGAGCTGC
ATGATAAATACTTGGCCTATGTGACTGACTGCTTTCAAAATCACTCTCTATTTTACAAGGCACTTA
AAGAGGCATTCGAGGTATTCTGCAATAAAGGTGTTGCAGGTAGCTCAAGCGCTGAACTTCTGGCTG
CTTTTTGTGACAATATATTGAAGAAGGGTGGAAAGCGAGAAACTAAGCGATGAGGCCATAGAGGATA
CTCTTGAGAAGGTTGTAAAACCTATTGGCATATATTAGCGATAAAGATCTGTTTGCTGAATTTTACA
GGAAGAAGCTTGACAGAAAGATTACTCTTTGACAAAAGTGCTAATGATGACCATGAGAGGAGCATCC
TTACAAAGCTGAAACAGCAATGTGGAGGGCAGTTCACCTCTAAAATGGAAGGCATGGTAACCGATC
TGACACTTGACAGAGAAAATCAATCAAGTTTTGACGATTACCTTAGCAGCAATCCTAAAGCAAATT
CTGGAATTGACTTGACTGTTACAGTCTTAACAACCTGGCTTCTGGCCCAGTTACAAGTCTTTTGATC
TCAATCTTCCTGATGAGATGGTAAAATGCGTTGAAATTTTTAAAGAGTTTTACGAGACAAAAACCA
AACACAGAAAACCTTACATGGATTTATTCGTTGGGCACCTTGCAACATCAATGGCAAGTTCGAAACCA
AGACAATAGAGTTGGTTGTTACAACCTATCAGGCTGCAGTGTTGCTTCTATTCAACTCTGCAGATA
AATTAAGTTATTCTGAGATTGTGCAGCAGCTAACTTATCTGATGATGATGTAATCAGATTACTTC
ACTCTCTTTCATGCGCTAAATACAAAATTCTCAATAAAGAACCCGCTACCAAGACTATTACCCCGA
ATGATCATTTTGAGTTCAATTCTAAATTCAGTATAGAATGAGAAGGATCAAGATTCCCCTGCCTC
CTGTGGATGAGAAGAAAAAAGTAATTGAAGATGTTGACAAAGACAGAAGATATGCAATTGACGCAT
CCATAGTTTCGAATAATGAAAAGTAGAAAAGTTCTTGGTCATCAGCAGCTTGTTTTGGAATGTGTTG
AGCAATTAGGCCGCATGTTTAAGCCTGACTTTAAGGCCATCAAGAAAAGGATTGAAGATCTGATCG
CTAGAGATTATTTGGAGAGGGACAAGGACAATCCAAACCTCTTTAAATATTTGGCCTAA

Fig. 14

ATGAACGAAAGAAAAACAATAGACTTAGAGCAAGGATGGGACTTCATGCAGAAAGGAATAACAAAG
TTGAAGAATATTCTAGAAGGTCTTCCCGAGCCACAATTCAGCTCGGAGGATTACATGATGCTCTAC
ACAACCAT [c] TACAACATGTGTACACAGAAACCACCACATGATTACTCCCAACAGTTGTATGACA
AATATCGTGAGTCTTTTGAAGAGTATATTACTTCAACTGTGTTACCTTCTTTAAGAGAGAAGCATG
ATGAGTTCATGCTGAGAGAGCTTGTTAGAAGGTGGTCAAATCATAAAGTCATGGTGCGGTGGCTTT
CTAGATTCTTCCATTATCTTGACCGATATTTTCATTGCCCCGAAGATCTCTTCCGCCACTAAATGAAG
TTGGACTTGCCTGTTTTTCGTGATCTGGTATACCAAGAGGTGAATGGTAAAGTGAGAGATGCTGTAA
TATCTTTGATTGATCAAGAGCGTGAAGGGGAGCAGATTGATCGAGCTTTACTGAAGAATGTTCTAG
ATATATTTGTTGAGATAGGAATGGGACAAATGGAGTATTATGAGAATGATTTTGAAGCATCCATGC
TTAATGATACAGCAGCATATTATTCACGCAAGGCTTCCAACCTGGATTCTAGAAGATTCTTGTCCAG
ATTATATGCTCAAAGCAGAGGAGTGCTTAAAAAGAGAAAAGGACAGAGTGTCTCATTATCTTCATT
CCAGCAGTGAGCCAAAGCTTCTTGAGAAAGTTCAAAATGAGTTATTGTCTGTTTTATGCAACTCAAT
TGCTTGAGAAAGAGCACTCAGGTTGTCATGCATTGCTCAGGGATGACAAGGTTGATGATTTATCAA
GAATGTACAGACTCTTTTCAAAGATACCAAAAGGATTGGATCCTGTTTTCTAGTATGTTTAAAGCAGC
ATGTCACTGCTGAAGGCACAACATTGGTTAAACAAGCAGAAGATGCAGCAAGTACCAAGAAGGCTG
AAAAGAGAGATGTGGTTGGGTTCAGGAACAGGTTTTTGTTAGAAAAGTTATTGAGCTCCATGACA
AGTACCTGGCATATGTAAATGACTGTTTCATGAACCATACTCTTTTCCACAAGGCTCTTAAAGAGG
CATTTGAAATATTCTGCAACAAGGGTGTTGCTGGAAGTTCAAGTGCAGAGTTACTTGCCACATTTT
GTGATAATATTCTTAAAAAAGGTGGAAGTGAGAACTGAGCGATGAAGCCATTGAGGACACCCTTG
AGAAGGTAGTAAAGTTGCTTGCCCTACATCAGTGATAAAGATCTATTTGCTGAATTTTACAGGAAAA
AACTTGCTAGGAGGCTTTTTGTTTGACAAGAGTGCAAACGATGAGCATGAGAGAAGTATTCTCACAA
AGCTGAAGCAACAGTGTGGTGGTCAGTTCACATCAAAGATGGAAGGGATGGTTACAGATTTGACAT
TGGCAAAGGAAAACCAATCCCATTTTGAAGAGTATTTGAACAATAATCCCAATGTCAGCCCTGGAA
TTGACTTGACTGTCACTGTGTTGACTACCGGCTTCTGGCCCAGCTACAAATCTTTTGACCTAAATC
TCCCTGCCGAAATGGTTAAATGCGTTGAAGTTTTTCAGAGAATTTTATCAAACAAAAACAAAGCACA
GGAAGCTTACATGGATATATTTCATTGGGTACCTGCAATATAAACGGGAAATTTGAACCCAAAACAA
TGGAGCTCATAGTCACAACCTACCAGGCATCTGCTTTATTACTGTTCAACTTATCGGATCGATTGA
GTTATCAAGAAATCATGACTCAGTTGAACTTGTCAGATGATGATGTTGTTAGGCTGCTCCATTCTT
TGTCATGTGCAAAATACAAAATTCTTTTAAAGGAGCCTAATACCAAAACAATCTCTCCAACCGATT
ACTTCGAATTCAACTCCAAGTTTACAGATAAAATGAGGAGGATCAAGATTCCTCTACCTCCTGTGG
ATGAGAAGAAAAAGGTGATTGAGGATGTTGACAAAGACAGACGTTATGCCATTGATGCTTCCATTG
TAAGGATAATGAAGAGCAGAAAGGTGCTTGGATAACCAGCAGTTGGTTATGGAGTGTGTTGAACAGT
TGGGACGCATGTTTAAAGCCTGATGTAAAAGCAATCAAGAAGCGGATTGAAGATCTGATAACTCGTG
ATTATCTTGAAAGAGACAAAGAGAACCCCAACTTGTTCCGATACTTGGCATGA

Fig. 15

ATGGAGCGGAAGACGATTGATCTGGAACAAGGATGGGACTATATGCAGACTGGGATCACTAAGCTG
AAACGGATTCTTGAAGGATTGCCTGAGCCGCAATTCGACTCTGAGCAGTACATGATGCTTTATACG
ACTAT [C] TACAACATGTGCACCCAGAAACCTCCTCATGATTACTCTCAGCAGCTTTATGACAAGT
ATCGCGAAGCTTTTGAGGAGTACATTGACTCTACTGTTTTGCCTGCTTTGAAGGAGAAGCATGATG
AATACATGCTACGGGAGCTGGTTAAGAGATGGTCTAACCATAAAGTTATGGTTAGATGGCTATCCC
GATTCTTCTACTATCTTGACCGTTACTTCATTGCTCGGAGATCGCTGCCACCGCTTAATGAAGTTG
GGCTCACATGCTTCCGTGACCGGGTGTATAAGGAGTTGCATTCCAAGGTCAAAGATGCTGTAATAG
CACTTGTTGATAAAGAACGGGAAGGCGAGCAGATTGACAGGGCTCTTCTGAAAAACGTATTAGATA
TCTATGTAGAGATTGGAATGGGACAGATGGAAAGATACGAAGTGGATTTTGAAAGCTTCATGCTTT
TGGATTCAGCATCTTACTATTCTCGCAAAGCATCAAACCTGGATCCAGGAAGATTCTTGCCCTGATT
ACATGCTGAAGTCTGAAGAATGCCTTAAGAAGGAGAGGGAGAGGGTTGCTCACTACCTTCATTCAA
GCAGCGAGCCAAAGCTGGTTGAGAAAGTACAACATGAGCTGTTGGTTGTCTATGCAAATCAGCTTC
TTGAAAAGGAGCACTCAGGGTGCCGTGCATTGCTGAGAGACGACAAGGTTGACGATCTCTCCAGGA
TGTACAGGCTCTATCATAAAATTGCTAAAGGTTTAGAACCTGTTGCAAACATATTTAAGCAGCATG
TCACAGCCGAGGGTAACGCACTTGTCCAACAGGCCGAAGACACAGCCACTAATCAGGCTGCAAATA
CTGCTAGCGTGCAGGAACAGGTTCTCATCAGAAAAGTGATTGAGCTACATGATAAGTACATGGTCT
ATGTCGTGGAGTGCTTCCAGAACCACACCCTCTTCCACAAGGCTCTGAAAGAGGCATTTGAGATAT
TCTGTAACAAAACAGTCGCTGGAAGTTCAAGTGCAGAACTGCTTGCAACATTCTGCGACAACATCC
TCAAGAAGGGGGGTAGTGAGAAGCTGAGTGACGAAGCTATTGAAGATACGCTTGAGAAGGTTGTCA
AATTGCTTGCTTATATAAGCGACAAGGATCTTTTCGCCGAGTTCTACAGGAAGAAGCTGGCACGTA
GGCTCTTATTTGATCGCAGTGCGAATGATGATCATGAGAGAAGCATCCTTACAAAGCTCAAGCAAC
AATGTGGTGGGCAGTTCACCTTAAGATGGAGGGCATGGTAACGGACTTGACATTGGCAAGAGAGA
ACCAAACCAGTTTCGAGGAGTATCTAGGCAATAACCCCGCTGCAAACCCAGGGATTGATTTGACCG
TCACTGTTCTTACCACTGGTTTCTGGCCAAGTTACAAATCATTGACATAAATCTACCAAGTGAAA
TGGTCAAGTGTGTTGAAGTTTTCAAAGGGTTTTATGAGACGAAAACATAAGGAACTTACAT
GGATCTACTCACTAGGAACCTTGTCACCTCAACGGAAAGTTTGATCACAAGCCCATTGAGTTAGTTG
TGTCTACTTACCAGGCTGCTGTGCTTCTGCTGTTCAACACAACAGACAAATTGAGCTACAACGATA
TCCTAACTCAACTGAACCTAAGCCACGAAGATTTAGTGAGGTTGCTTCATTCCCTGTCATGTGCTA
GGTACAAGATCCTTCTCAAGGAGCCAAGCACGAAGACTGTTACACAGACTGATTCATTTGAATTCA
ATGCCAAATTCACGGACAGAATGCGCAGAATCAAGATCCCTCTCCCTCCTGTTGATGAAAGGAAGA
AGGTTGTGGAAGATGTGGACAAAGACAGACGCTATGCGATTGATGCTGCCATTGTTAGGATCATGA
AGAGCAGGAAAGTGTTGGGACATCAACAACCTCGTCTCTGAGTGCGTTGAGCAACTTAGCCGAATGT
TCAAGCCTGATATCAAAGCGATCAAGAAGCGTATGGAGGATCTAATTACGAGGGATTATTTGGAGA
GGGACAAGGAGAACCCTAACATGTTTAGGTACTTGGCTTAG

Fig. 16

ATGAACGATCGTAAAGTTATCGAACTAGAGCAAGGATGGGAGTTCATGGGGAAGGGGATTACGAAG
TTGAAAAGGATTTTGGGAAGGATTACCAGAGCCGCCTTTTAATTCGGAAGACTACATGATGCTGTAC
ACGACAAT **[A]** TACAACATGTGTACACAGAAACCCCTCATGATTACTCTCAACAACTCTATGACA
ATTACAAAGAGGCATTTGTGGATTACATACATTCAACGGTTTTACCTTCTTTGGGGGACAAACATG
ATGAGTTTATGCTGAGAGAGCTTGTGAAGAGATGGTCAAATCATAAAGTAATGGTGAGGTGGTTGT
CTCGCTTCTTCCATTATCTGGATCGGTACTTCATCGCTCGGAGATCGCTTCCTTCTTTGAATGATG
TTGGATTGACGTGCTTCCGTGATCTGGTTTATCAAGAAATATCTGGCAAAGCCAAGGATGCTGTTA
TTGCTCTGATTGATGAAGAAAGAGAGGGTGGGCAAATTGACAGAGCCTTATTGAAGAATGTACTTG
ATATATACGTTGAAATTGGAATGACACAAATGGATTACTACGAAAAGGACTTTGAAGCTCATATGC
TGGATGATACTGCTGCTTATTACTCACGCAAGGCCTCAAGCTGGATTCTGGAGGACTCATGTCCGG
AATACATGTTGAAGTCGGAGGAGTGTTTGAAGAAAGAGAAAGATAGAGTGGCTCATTATCTACATT
CCAGCAGTGAGCCAAAGCTTCTGGAGAAAGTACAAAATGAGTTGCTACTGGTTTACGAAAATCAGT
TGCTTGAGAAGGAGAATTCTGGATGTCGTGCATTGTTGAAAGATGACAAGGTGGAAGATCTTTCCA
GGATGTACAGGCTTTATAGCAAGGTTACCAAAGGGTTGGAACCCATTGGCAGTATCTTCAAACAGC
ATATAACCGATGAAGGAACAGCCCTGGTGCAGCAGGCCGAAGACGCTGCAATTAGCAAGGCTGAAA
ATGCTGGCGGTGGTTCACATGAGCAGGTCTTCGTCAGGAAAGTGATTGAGTTGCATGACAAATTTA
TGACCTATGTTACAGATTGCTTCAACAGCCATACCATCTTTCACAAGGCTCTCAAGGAAGCTTTTG
AGGTATTCTTAAACAAGGGTGTTGCTGGTAGTTCAAGTGCTGAACTTCTAGCTTCATTTTGTGATA
ATATTCTCAAGAAAGGTGGTAGTGAAAAATTAAGTGATGAGGCTATTGAGGATTCAGTGGAGAAGG
TGGTGAAGCTTCTCGCATATGTCAGTGATAAAGACCTGTTTGCTGAATTTTACAGAAAGAAGCTCT
CTCGCCGGCTACTCTTTGACAAAAGTGCTAATGATGATCATGAGAGGAGTATTTTAAACAAAATTGA
AGCAGCAGTGTGGGGGACAGTTCACATCAAAGATGGAGGGGATGGTGACAGACTTGACATTGGCGA
GGGAGAATCAAACATAATTTTGAGGAATATCTTGGACAAAATACAGATGCCAGTCCTGGTCTTGATT
TGACTGTGACAGTTTTGACCACTGGGTTCTGGCCAAGTTACAAATCTTCTGATCTTAACCTTCCTG
CTGAGATGGTGAGGTGTGTTGAAGTTTTTAAGCAATTTTATCAAACAAAGACAAAACACAGGAAGC
TCACCTGGGTATATTCGTTGGGAAGTTGTAACATTAATGGCAAGTTTGGTCCGAAAACAATTGAAT
TGGTTGTTGGAAC TTATCAGGCTGCTGCGCTGATGCTCTTTAACACATCAGATCGACTGAGTTATT
CAGAAATAACGACCCAACTAAATCTAGCTGACGAAGACTTGGTTAGAGTGCTTCAATCTCTATCTT
GCGCAAAGTATAAGATTCTTCTAAAAGAGCCAAGCACAAGAAACGTGATCTCAACTGATTGTTTTT
CATTCAACTCTAATTTTACTGACAGAATGAGGAGGATTAGGATTCCTCTTCCTCCAATGGATGAGA
GGAAAAAGGTTGTTGAAGATGTTGACAAAGATAGAAGATATGCTATTGATGCCTCAATTGTACGCA
TAATGAAAAGTAGGAAGGCTTTGGGATATCAACAATTAATCACGGAGTGTGTGGAGCAGCTAAGCC
GCATGTTCAAGCCTGATTTCAAAGCAATTAAGAAGAGGATCGAGGACTTGATAACCAGAGATTATA
TTGAAAGAGACAAGGAAAACCCTCAGCTATTCCGGTACTTGGCTTGA

Fig. 17

ATGAATGATCGTAAAGTTATTGAACTAGAGCAAGGATGGGAGTTCATGGGGAAGGGGATTACAAAG
TTGAAGAGGATTCTGGAAGGATTGCCAGAGCCACCATTTAATTCTGAAGACTACATGATGTTGTAC
ACGACGAT [A] TACAATATGTGTACTCAGAAACCCCCACATGATTACTCTCAACAGCTCTATGACA
ATTACAAACAGGCTTTTTGTGGATTACATCAACTCGACGGTTTTACCTTCTTTGCGGGAGAAGCATG
ATGAGTTTATGTTAAGAGAACTTGTGAAAAGATGGGCAAATCATAAAGTAATGGTCAGGTGGTTGT
CTCGTTTTCTTCCATTATCTGGACCGGTATTTTCATTGCTCGGAGGTCGCTTCCTTCTTTGAATGAAG
TTGGACTGACTTGTTTCCGTGATCTGGTTTATCAAGAAATATCTGGCAAAGCCAAGGATGCTGTTA
TAGCCCTGATTGATATAGAAAGAGAAGGTGGGCAGATTGACAGATCATTATTGAAAAATGTACTTG
ATATATATGTTGAAATTGGAATGGGACAAATGGATCACTATGAAAAAGACTTTGAAGCTCATATGC
TGGATGATACTGCTGCTTACTACTCGCGCAAAGCGTCTAGCTGGATTCTTGAGGACTCTTGTCCGG
AATACATGTTAAAGTCTGAGGAGTGTTTGAAGAAGGAGAAAGAGAGAGTGGCTAATTATTTACATT
CCAGCAGTGAGCCAAAGCTTCTGGAGAAAGTGCAAAACGAGTTGCTATTGGTTTATGAAAGCCAAT
TGCTTGAGAAGGAGAATTCGGGATGTCGTGCATTACTGAAAGATGACAAGGTGGATGATCTTTCCA
GGATGTACAGGCTTTACAGTAAGGTTACCAAAGGATTGGAACCCATTGGCAGTATCTTCAAACAGC
ATATAACTGATGAAGGAACAGCCTTAGTGTCAGCAGGCCGAAGATGCTGCTATCAGCAAGGCTGAAA
ATACTGGTGGTTCACATGAGCAGGTCTTCGTCAGGAAAGTAATAGAGTTGCATGACAAATTCATGA
CTTATGTCACCGATTGCTTCAACAGCCATACCATATTTTACAAGGCTCTTAAGGAGGCTTTTGAGG
TATTTTTGAACAAGGGTGTTGCTGGTAGCTCAAGTGCTGAGTTGCTAGCTACATTCTGTGATAACA
TTCTCAAGAAAGGTGGGAGCGAAAACTAAGCGATGAGGCTATTGAGGATTCATTGAGAAGGTGG
TGAAGCTTCTGGCCTATGTCAGTGATAAAGACCTGTTTGCTGAATTTTACAGAAAGAAGCTCTCTC
GCCGGCTACTCTTTGACAAGAGTGCTAATGATGATCATGAAAGAAGTATTTTAACCAAATTGAAGC
AGCAGTGTGGCGGACAATTCACATCAAAGATGGAGGGGATGGTGACAGACTTGACCTTGGCGAGGG
AGAATCAAACATAATTTTGAGGAATATCTTAGTCAGAATCCAGATGCCAGTCCTGGTCTTGATTGTA
CTGTGACTGTTCTGACAACTGGGTTCTGGCCAAGTTACAAATCTTCCGATCTTAACCTTCCCGCTG
AGATGGTGAGGTGTGTTGAAGTTTTTAAGCAGTTCTATTCAACTAAAACAAAGCACAGGAAGCTGA
CCTGGGTTTACTCATTGGGAAGCTGTAATATTAATGGCAAGTTTGGTCCAAAACTATTGAATTGG
TTGTCGGAACCTTATCAGGCTGCTGCTTTGATGCTCTTTAACACATCAGACCGACTGAGTTATTCAG
AGATAGCAACTCAACTAAATTTAGCTGATGAAGATCTGGTTAGAGTGCTTCAATCTTTATCCTGCG
CAAAGTATAAGATTCTTTTAAAGGAGCCAAACACGAAAACCGTGTCCCCGACTGATTGTTTTTCAT
TTAACTCTAGTTTCACTGACAGGATGAGGAGGATAAGAATTCCTCTTCCTCCGATGGATGAGAGGA
AAAAGGTGTTGAGGATGTTGACAAAGATAGAAGATATGCTATTGATGCCTCAATTGTACGCATAA
TGAAAAGTAGGAAGGTTTTGGGGTACCAGCAATTAATCACAGAGTGTGTGGAGCAGCTAAGCCGCA
TGTTCAAGCCTGATTTCAAGGCAATTAAGAAGAGGATCGAGGACTTAATAACCCGAGATTATATTG
AAAGAGACAAGGAGAACCCGCAGCTATTCCGATACTTGGCTTGA

Fig. 18

MTMGERKTIDLEQGWEFMQKGITKLKNILEGLPEPQFSSSEDYMMLYTT **[I]** YNMCTQKPPHDYSQQ
LYDKYRESFEEYITSMVLPSLREKHDEFMLRELVKRWTNHKVMVRWLSRFFHYLDRIYFIARRSLPP
LNEVGLTCFRELVIKELNSKVRDAVISLIDQEREQEQIDRALLKNVLDIFVEIGMGQMDYYENDFE
AAMLKDTAAYYSRKASNWILEDSCPDYMLKAECECLKREKDRVSHYLHSSSEPKLLEKVQHELLSVY
ATQLEKEHSGCHALLRDDKVEDLSRMFRLFSKIPKGLDPVSNIFKQHVTAEGTALVKQAEDAASN
KKAEEKDIVGLQEQVFVRKVIELHDKYLAYVNDCFQNHTLFHKALKEAFEVFCNKGVAGSSSAELL
ATFCDNILKKGSEKLSDEAIEETLEKVVKLLAYICDKDLFAEFYRKKLARLLFDKSANDDHRS
ILTKLKQQCGGQFTSKMEGMVTDLTARENQTSFEEYLSNNPQASPGIDLTVTVLTTGFWPSYKSF
DLNLPAEMVKCEVFREFYQTKTKHRKLTWIYSLGTCNISGKFEPKTMELIVTTYQASALLFNSS
DRLSYSEIMTQLNLSDDDVRLLHSLSCAKYKILNKEPNTKTISPNDHFEFNAKFSDKMRRIKIPL
PPVDEKKKVIEDVDKDRRYAIDASIVRIMKSRKVLGHQQLVMECQEQLGRMFKPDFKAIKKRIEDL
ITRDYLERDKDNPHLFRYLA

Fig. 19

MTMGERKTIDLEQGWEFMQKGITKLKNILEGLPEPQFSSSEDYMMLYTT **[I]** YNMCTQKPPHDYSQQ
LYDKYRESFEEYITSMVLPSLREKHDEFMLRELVKRWTNHKVMVRWLSRFFHYLDRIYFIARRSLPP
LNEVGLTCFRELVIKELNSKVRDAVISLIDQEREQEQIDRALLKNVLDIFVEIGMGQMDYYENDFE
AAMLKDTAAYYSRKASNWILEDSCPDYMLKAECECLKREKDRVSHYLHSSSEPKLLEKVQHELLSVY
ATQLEKEHSGCHALLRDDKVEDLSRMFRLFSKIPKGLDPVSNIFKQHVTAEGTALVKQAEDAASN
KKAEEKDIVGLQEQVFVRKVIELHDKYLAYVNDCFQNHTLFHKALKEAFEVFCNKGVAGSSSAELL
ATFCDNILKKGSEKLSDEAIEETLEKVVKLLAYICDKDLFAEFYRKKLARLLFDKSANDDHRS
ILTKLKQQCGGQFTSKMEGMVTDLTARENQTSFEEYLSNNPQASPGIDLTVTVLTTGFWPSYKSF
DLNLPAEMVKCEVFREFYQTKTKHRKLTWIYSLGTCNISGKFEPKTMELIVTTYQASALLFNSS
DRLSYSEIMTQLNLSDDDVRLLHSLSCAKYKILNKEPNTKTISPNDHFEFNAKFSDKMRRIKIPL
PPVDEKKKVIEDVDKDRRYAIDASIVRIMKSRKVLGHQQLVMECQEQLGRMFKPDFKAIKKRIEDL
ITRDYLERDKDNPHLFRYLA

Fig. 20

MTMGERKTIDLEQGWEFMQKGITKLKNILEGLPEPQFSSSEDYMMLYTT **[I]** YNMCTQKPPHDYSQQ
LYDKYRESFEEYISSMVLP SLREKHDEFMLRELVKRWTNHKVMVRWLSRFFHYLD RYFIARRSLPP
LNEVGLTCFREL VYKELNSKVRDAVISLIDQEREGEQIDRALLKNVLDIFVEIGMGQMDYYENDFE
AAMLKDTAAYYSRKASNWILEDSCPDYMLKAE ECLRREKDRVSHYLHSSSEP K LLEKVQH ELLSVY
ATQ LLEKEHSGCHALLRDDKVEDLSRMFRLFSKIPKGLDPVSNIFKQHVTAEGTALVKQAEDAASN
KKA EKKDIVGLQE QVFVRKVIELHDKYLAYVNDCFQNH TL FHKALKEAF EVFCNKG VAGSSSAELL
ATFCDNILK KGGSEKLSDEAIEETLEKVVKLLAYICDKDLFAEFYRKKLAR RLLFDKSANDDH ERS
ILTKLKQQCGGQFTSKMEGMVTDLT LARENQTSFEEYLSNNPQASPGIDLT VTVLTTGFWPSYKSF
DLNLPAEMVKC VEVFRE FYQTKTKHRKLTWIYSLGTCNISGKFEPKTMELIVTTYQASALLLFNSS
DKLSYSEIMTQLNLSDDD VVRL LHSLSCAKYKI LNKEPNTKTISPNDHFEFNAKFSDKMRRIKIPL
PPVDEKKKVIEDVDKDRRYAIDASIVRIMKSRKVLGHQQLVMECVEQLGRMF KPDFKAIKKRIEDL
ITRDYLERDKDNPHLFRYLA

Fig.21

MTMGERKTIDLEQGWEFMQKGITKLKNILEGLPEPQFSSSEDYMMLYTT **[I]** YNMCTQKPPHDYSQQ
LYDKYRESFEEYITSMVLP SLREKHDEFMLRELVKRWTNHKVMVRWLSRFFHYLD RYFIARRSLPP
LNEVGLTCFREL VYKELNSKVRDAVISLIDQEREGEQIDRALLKNVLDIFVEIGMGQMDYYENDFE
AAMLKDTAAYYSRKASNWILEDSCPDYMLKAE ECLKREKDRVSHYLHSSSEP K LLEKVQH ELLSVY
ATQ LLEKEHSGCHALLRDDKVEDLSRMFRLFSKIPKGLDPVSNIFKQHVTAEGTALVKQAEDAASN
KKA EKKDIVGLQE QVFVRKVIELHDKYLAYVNDCFQNH TL FHKALKEAF EVFCNKG VAGSSSAELL
ATFCDNILK KGGSEKLSDEAIEETLEKVVKLLAYICDKDLFAEFYRKKLAR RLLFDKSANDDH ERS
ILTKLKQQCGGQFTSKMEGMVTDLT LARENQTSFEEYLSNNPQASPGIDLT VTVLTTGFWPSYKSF
DLNLPAEMVKC VEVFRE FYQTKTKHRKLTWIYSLGTCNISGKFEPKTMELIVTTYQASALLLFNSS
DRLSYSEIMTQLNLSDDD VVRL LHSLSCAKYKI LNKEPNTKTISPNDHFEFNAKFSDKMRRIKIPL
PPVDEKKKVIEDVDKDRRYAIDASIVRIMKSRKVLGHQQLVMECVEQLGRMF KPDFKAIKKRIEDL
ITRDYLERDKDNPHLFRYLA

Fig. 22

MNQRSTIDLEHGWD FMQKGITKLKNILEGLPEPQFSS EYMMLYTT **[I]** YNMCTQKPPHDYSQQLY
DKYREAFEEYITTTVLP SLREKHDEFMLRELVKRWSNHKVMVRWLSRFFHYLD RYFIARRSLPGLN
EVGLTCFRDLVYQELNGKVRDAVISLIDQEREGEQIDRALLKNVLDIFVEIGMGSM DYYENDFEAA
MLKDTAAYYSRKASNWILEDSCPDYMLKAE ECLKREKDRVSHYLHSSSETKLLEKVQHELLSVYAN
QLLEKEHSGCHALLRDDKVDDL SRMYRLF SKIPRGLEPVANIFKQHVTAEGTALVKQAEDAASNKK
AEKRDVVGLQE QVFVRKVIELHDKYLAYVNNCFQNHTLFHKALKEAFELFCNKG VAGSSNAELLAT
FCDNILKKGGSEKLSDEAIEETLEKVVKLLAYISDKDLFAEFYRKKLAR RLLFDKSANDEHERSIL
TKLKQQCGGQFTSKMEGMVTDLT LARENQASFEEYLSNNPTANPGIDLT VTVLTTGFWPSYKSFDL
NLPAEMVRCVEVFKEFYQTKTKHRKLTWIIYSLGTCNINGKFEAKTIELVVT TYQASALLLFNASDR
LSYQEIMTQLNLSDDD VVRLHLSLSCAKYKI LNKEPSTKTISPTDVFEFNSKFTDKMRRIKIPLPP
VDEKKKVIEDVDKDRRYAIDASI VRIMKSRKVLGYQQLVMECVEQLGRMF KPDVKAIKKRIEDLIT
RDYLERDKDNP NLFKYLA

Fig. 23

MNQRSTIDLEHGWD FMQRGITKLKNILEGLPEPQFSS EYMMLYTT **[I]** YNMCTQKPPHDYSQQLY
DKYREAFEEYITTTVLP SLREKHDEFMLRELVKRWSNHKVMVRWLSRFFHYLD RYFIARRSLPGLN
EVGLTCFRDQVYQELNGKVRDAVISLIDQEREGEQIDRALLKNVLDIFVEIGMGLMDYYENDFEAA
MLKDTAAYYSRKASNWILEDSCPDYMLKAE ECLKREKDRVSHYLHSSSETKLLEKVQHELLSVYAT
QLLEKEHSGCHALLRDDKVEDLSRMYRLF SKISRGLDPVANIFKQHVTAEGTALVKQAEDAASNKK
AEKRDVVGLQE QVFVRKVIELHDKYLAYVNNCFQNHTLFHKALKEAFELFCNKG VAGSSSAELLAT
FCDNILKKGGSEKLSDEAIEETLEKVVKLLAYISDKDLFAEFYRKKLAR RLLFDKSANDEHERSIL
TKLKQQCGGQFTSKMEGMVTDLT LARENQASFEEYLSNNPIANPGIDLT VTVLTTGFWPSYKSFDL
NLPAEMVRCVEVFKEFYQTKTKHRKLTWIIYSLGTCNINGKFEPKTIELVVT TYQASALLLFNASDR
LSYQEIMTQLNLSDDD VVRLHLSLSCAKYKI LNKEPSTKTISPTDVFEFNSKFTDKMRRIKIPLPP
VDEKKKVIEDVDKDRRYAIDASI VRIMKSRKVLGYQQLVMECVEQLGRMF KPDVKAIKKRIEDLIT
RDYLERDKDNP NLFKYLA

Fig. 24

MNQRSTINLEHGWDFMQRGITKLKNILEGLPEPQFSSSEDYMMLYTT **[1]** YNMCTQKPPHDYSQQLY
 DKYREAFEEYITTTVLP SLREKHDEFMLRELVKRWSNHKVMVRWLSRFFHYLD RYFIARRSLPGLN
 EVGLTCFRDLVYQELNGKVRDAVISLIDQEREGEQIDRALLKNVLDIFVEIGMGSMDDYYENDFEAA
 MLKDTAAYYSRKASNWILEDSCPDYMLKAE ECLKREKDRVSHYLHLSSETKLLEKVQHELLSVYAT
 QLLEKEHSGCHALLRDDKVEDLSRMYRLF SKIPRGLDPVANIFKQHVTAEGTALVKQAEDAASNKK
 AEKRDVVGLQE QIFVRKVIELHDKY MAYVNNCFQNHTLFHKALKEAFELFCNKG VAGSSSAELLAT
 FCDN ILKKG GSEKLSDEAIEETLEKVVKLLAYISDKDLFAEFYRKKLARLLFDKSANDEHERSIL
 TKLKQQCGGQFTSKMEGMVTDLT LARENQASFE EYLSNNPAANPGIDLTVTVLTTGFWPSYKSFDL
 NLPAEMVRCVEVFKEFYQTKTKHRKLTW IYSLGTCNINGKFEPKTIELVVTTYQASALLFNASDR
 LSYQEIMTQLNLSDDD VVRLHLSLSCAKYKILNKEPSTKTISPTDVFEFNFKFTDKMRRIKIPLPP
 VDEKKK VIEDVDKDRRYAIDASIVRIMKSRKVLGYQQLVMECVEQLGRMFKPDVKAIKKRIEDLIT
 RDYLERDKDNP NLFKYLA

Fig. 25

MERKTIDLDQGDYMQTGITKLKRILEGLPEPQFDSEQYMMLYTT **[1]** YNMCTQKPPHDYSQQLYD
 KYREAFEEYIHSTVLPALREKHDEYMLRELVKRWSNHKVMVRWLSRFFYYLD RYFIARRSLPPLNE
 VGLTCFRDLVYNELH SKVKDAVIALVDKEREGEQIDRALLKNVLDIYVEIGMGQMERYEEDFESFM
 LLDSASYYSRKASSWIQEDSCPDYMLKSEECLKKERERVAHYLHSSSEPKLVEKVQHELLVVYANQ
 LLEKEHSGCRALLRDDKVDDLSRMYRLYHKIVKGLEP VANIFKQHVTAEGNALVQQAEDTATNHAA
 NTASVQE QVLIRKVIELHDKY MVYVVECFQNHTLFHKALKEAFEIFCNKTVAGSSSAELLATFCDN
 ILKKG GSEKLSDEAIEDTLEKVVKLLAYISDKDLFAEFYRKKLARLLFD RSANDDHERSILTCLK
 QQCGGQFTSKMEGMVTDLT LARENQNSFE EYLGNNPAANPGIDLTVTVLTTGFWPSYKSFDINLPA
 EMVKCVEVFKG FYETKTKHRKLTW IYSLGTCHLNGKFDVKPIELVVSTYQAAVLLLFNTTDKLSYT
 DILTQLNLSHEDLVRLHLSLSCARYKILLKEPSTKTVSQSDSFEFN SKFTDRMRRIKIPLPPVDER
 KKVVEDVDKDRRYAIDAAIVRIMKSRKVLGHQQLVSECVEQLSRMFKPD IKAIKKR MEDLITRDYL
 ERDKENANMFRYLA

Fig. 26

MMIERKTIDLEQGWD FMQKGITKLKNILEGFPEPQFSS EYMMLYTT [I] YNMCTQKPPHDYSQQL
YEKYREAIEEYITSTVLPSLREKHDEFMLRELVKRWSNHKVMVRWLSRFFHYLD RYFIARRSLPPL
HEVGLTCFRDLVYQEINGKVRDAVISLINQEREGEQIDRALLKNVLDIFVEVGMSQMDYYENDFEA
DMLKDTAAYYSRKASNWILEDSCPDYMLKAE ECLRREKDRVS NYLHSSSEP K LLEKVQHELLSHYA
TQ LLEKEHSGCHALLRDDKVADLSRMYRLFSKIPRGLDPVSNIFKQHVTAEGTALVKQAEDAASNK
KAEKRDVVGLQE QVFVRKIIELHDKYLT YVND CFTNHTLFHKALKEAFEIFCNKGVSGSSSAELLA
TFCDNILKKGGSEKLSDEAIEETLEKVVRL LAYISDKDLFAEFYRKKLAR RLLFDKSANDEHERSI
LTKLKQQCGGQFTSKMEGMVTDLT LAKENQSNFEEYLN NNSNVNPGIDLT VTVLTTGFWPSYKSFD
LNLPAEMVKCVEVFREFYQTKTKHRKLTW IYSLGTCNIIGKFDPKTMELIVTTYQASALLFNSSD
RLSYNEIMTQLNLSDDD VVRL LHSLSCAKYKILSKEPNTKTISPTDCFQFNSKFTDKMRRIKIPLP
PVDEKKKVIEDVDKDRRYAIDASIVRIMKSRKVLGYQQ LVM ECVEQLGRMFKPDVKA IKKRIEDLI
TRDYLERDKDNANLFRYLA

Fig. 27

MNERKTIDLDNGWEFMQKGITKLKKILEGQPEPQFSS EYMMLYTT [I] YNMCTQKPPHDYSQQLY
DKYREAFEEYITSTVLPSLREKHDEFMLREL VNRWTNHKVMVRWLSRFFHYLD RYFIARRSLPALH
EVGLTCFRDLVYQELKVVRDAVISLIDQEREGEQIDRALLKNVLDIFVEIGMSQMDQYENDFEEA
MLTDTAAYYSRKASNWILEDSCPDYMLKAE ECLRREKDRVSHYLHFSSEP K LLEKVQHELLSVYAT
Q LLEKEHSGCHALLRDDKVDDL SRMYRLFSKIPKGLDPVSYIFKQHV TNEGMA LVKQAEDAASNKK
AEKRDVVS LQE QVFVRKIIELHDKYLA YVND CFTNHTLFHKALKEAFEIFCNKGVAGSSNAELLAT
FCDNILKKGGSEKLSDEAIEETLEKVVKLLAYISDKDLFAEFYRKKLAR RLLFDKSANDEHERSIL
TKLKQQCGGQFTSKMEGMVTDLT LAKENQSSFEEYLGNNANVNPGIDLT VTVLTTGFWPSYKSFDL
NLPAEMVKCVEVFREFYQTKTKHRKLTW IYSLGTCNINGKFEPKTIELIVTTYQASALLFN TSDR
LSYQEIMTQLNLSDDD VVRL LHSLSCAKYKILTKEPN NKTISPTDYFEFNSKFTDKMRRIKIPLP
VDEKKKVIEDVDKDRRYAIDASIVRIMKSRKVLGYQQ LVM ECVEQLGRMFKPDVKA IKKRIEDLIT
RDYLERDKDNANLFRYLA

Fig. 28

MNERKTIDLEQGWDFMQKGITKLKNILEGLPEPQFSSSEDYMMLYTT **[I]** YNMCTQKPPHDYSQQLY
DKYRESFEEYITSTVLP SLREKHDEFMLRELVRWWSNHKVMVRWLSRFFHYLD RYFIARRSLPPLN
EVGLACFRDLVYQEVNGKVRDAVISLIDQEREGEQIDRALLKNVLDIFVEIGMGQMEYYENDFEAS
MLNDTAAYYSRKASNWILEDSCPDYMLKAE ECLKREKDRVSHYLHSSSEP K LLEKVQTELLSVYAT
Q LLEKEHSGCHALLRDDKVDDL SRMYRLF SKIQKGLDPVSSMF KQHVT AEGTTLVKQAEDA ASTKK
AEKRDVVGLQE QVFVRKVIELHDKYLAYVNDCFMNHTLFHKALKEAFEIFCNKGVAGSSSAELLAT
FCDNILKKGGSEKLSDEAIEDTLEKVVKLLAYISDKDLFAEFYRKKLAR RLLFDKSANDEHERSIL
TKLKQQCGGQFTSKMEGMVTDLT LAKENQSHFEEYLNNPNVSPGIDLTVTVLTTGFWPSYKSFDL
NLPAEMVKCVEVFREFYQTKTKHRKLTWIIYSLGTCNINGKFEPKTMELIVTTYQASALLFNSSDR
LSYQEIMTQLNLSDDD VVRL LHSLSCAKYKILLKEPN TKTISPTDFFEFNSKFTDKMRRIKIPLPP
VDEKKKVIEDVDKDRRYAIDASIVRIMKSRKVLGYQQLVMECVEQLGRMF KPDVKAIKKRIEDLIT
RDYLERDKENPNLFRYLA

Fig. 29

MNERKTIDLEQGWDFMQKGITKLKNILEGLPEPQFSSSEDYMMLYTT **[I]** YNMCTQKPPHDYSQQLY
DKYRESFEEYITSTVLP SLREKHDEFMLRELVRWWSNHKVMVRWLSRFFHYLD RYFIARRSLPPLN
EVGLACFRDLVYQEVNGKVRDAVISLIDQEREGEQIDRALLKNVLDIFVEIGMGQMEYYENDFEAS
MLNDTAAYYSRKASNWILEDSCPDYMLKAE ECLKREKDRVSHYLHSSSEP K LLEKVQTELLSVYAT
Q LLEKEHSGCHALLRDDKVDDL SRMYRLF SKIQKGLDPVSSMF KQHVT AEGTTLVKQAEDA ASTKK
AEKRDVVGLQE QVFVRKVIELHDKYLAYVNDCFMNHTLFHKALKEAFEIFCNKGVAGSSSAELLAT
FCDNILKKGGSEKLSDEAIEDTLEKVVKLLAYISDKDLFAEFYRKKLAR RLLFDKSANDEHERSIL
TKLKQQCGGQFTSKMEGMVTDLT LAKENQSHFEEYLNNPNVSPGIDLTVTVLTTGFWPSYKSFDL
NLPAEMVKCVEVFREFYQTKTKHRKLTWIIYSLGTCNINGKFEPKTMELIVTTYQASALLFNSSDR
LSYQEIMTQLNLSDDD VVRL LHSLSCAKYKILLKEPN TKTISPTDFFEFNSKFTDKMRRIKIPLPP
VDEKKKVIEDVDKDRRYAIDASIVRIMKSRKVLGYQQLVMECVEQLGRMF KPDVKAIKKRIEDLIT
RDYLERDKENPNLFRYLA

Fig. 30

MSLHERKTIDLEQGWAFMQKGITKLKNILDELNEPQFSSSEDYMMLYTT **[I]** YNMCTQKPPHDYSQE
 LYDKYRESFEEYITTTVLP SLREKHDEYMLRELVRWWSNHKIMVRWLSRFFHYLDRIYFIARRSLPA
 LNEVGLTCFRDLVYNEVHGKVKDAVISLIDQEREGEQIDRALLKNVLGIFVEIGLGSMECYENDFE
 TSMLNATAAYYSRKASNWILEDSCPDYMLKAECECLKHEKDRVAHYLHSSSEQKLEKVVQHELLFVY
 ASQLEKEHSGCHALLRDDKVGDL SRMYRLFCRITRGLDPVSQIFKQHVTAEGTALVKHAEDAASN
 KKAEEKDIVGLQEQQVFVRKVIELHDKYLAYVTDCFQNHSLFHKALKEAFEVFCNKG VAGSSSAELL
 AAFCDNILKKGGSEKLSDEAIEDTLEKVVKLLAYISDKDLFAEFYRKKLARLLFDKSANDDHRS
 ILTKLKQQCGGQFTSKMEGMVTDLT LARENQSSFDDYLSSNPKANSGIDLTVTVLTTGFWPSYKSF
 DLNLPDEMVKCVEIFKEFYETKTKHRKLTWIYSLGTCNINGKFETKTIELVVTTYQAAVLLLFNSA
 DKLSYSEIVQQNLNLSDDD VIRLLHSLSCAKYKILNKEPATKTITPNDHFEFNSKFTDRMRRIKIPL
 PPVDEKKKVIEDVDKDRRYAIDASIVRIMKSRKVLGHQQLVLEECVEQLGRMFKPDFKAIKKRIEDL
 IARDYLERDKDNP NLFKYLA

Fig. 31

MNERKTIDLEQGWDFMQKGITKLKNILEGLPEPQFSSSEDYMMLYTT **[I]** YNMCTQKPPHDYSQQLY
 DKYRESFEEYITSTVLP SLREKHDEFMLRELVRWWSNHKVMVRWLSRFFHYLDRIYFIARRSLPPLN
 EVGLACFRDLVYQEVNGKVRDAVISLIDQEREGEQIDRALLKNVLDIFVEIGMGQMEYYENDFEAS
 MLNDTAAYYSRKASNWILEDSCPDYMLKAECECLKREKDRVSHYLHSSSEPKLEKVVQNELLSVYAT
 QLEKEHSGCHALLRDDKVDDL SRMYRLFSKIPKGLDPVSSMFQHVTAEGTTLVKQAEDAAS TKK
 AEKRDVVGLQEQQVFVRKVIELHDKYLAYVNDCFMNHTLFHKALKEAFEIFCNKG VAGSSSAELLAT
 FCDNILKKGGSEKLSDEAIEDTLEKVVKLLAYISDKDLFAEFYRKKLARLLFDKSANDEHERSIL
 TKLKQQCGGQFTSKMEGMVTDLT LAKENQSHFEEYLNNPNVSPGIDLTVTVLTTGFWPSYKSFDL
 NLPAEMVKCVEVFREFYQTKTKHRKLTWIYSLGTCNINGKFEPKTMELIVTTYQASALLLFNLSDR
 LSYQEIMTQLNLSDDD VVRLHSLSCAKYKILLKEPNTKTISPTDYFEFNSKFTDKMRRIKIPLP
 VDEKKKVIEDVDKDRRYAIDASIVRIMKSRKVLGYQQLVMECVEQLGRMFKPDVKAIKKRIEDLIT
 RDYLERDKENPNLFRYLA

Fig. 32

MERKTIDLEQGWDYMQTGITKLKRILEGLPEPQFDSEQYMMLYTT [1] YNMCTQKPPHDYSQQLYD
KYREAFEEYIDSTVLPALKEKHDEYMLRELVKRWSNHKVMVRWLSRFFYYLDRYFIARRSLPPLNE
VGLTCFRDRVYKELHSHKVKDAVIALVDKEREGEQIDRALLKNVLDIYVEIGMGQMERYEVDFFESFM
LLDSASYYSRKASNWIQEDSCPDYMLKSEECLKKERERVAHYLHSSSEPKLVEKVQHELLVVYANQ
LLEKEHSGCRALLRDDKVDDL SRMYRLYHKIAKGLEPVANIFKQHVTAEGNALVQQAEDTATNQAA
NTASVQEQVLIRKVIELHDKYMVYVVECFQNHTLFHKALKEAFEIFCNKTVAGSSSAELLATFCDN
ILKKGSEKLSDEAIEDTLEKVVKLLAYISDKDLFAEFYRKKLARLLFDRSANDDHERSILTKLK
QQCGGQFTSKMEGMVTDLT LARENQTSFEEYLGNNPAANPGIDLT VTVLTTGFWPSYKSFDINLPS
EMVKCVEVFKGFYETKTKHRKLTWIIYSLGTCHLNGKFDHKPIELVVSTYQAAVLLLFNTTDKLSYN
DILTQLNLSHEDLVRL LHSLSCARYKILLKEPSTKTVTQTDSEFNAKFTDRMRRIKIPLPPVDER
KKVVEDVDKDRRYAIDAAIVRIMKSRKVLGHQQLVSECVEQLSRMFKPDIAIKKRMEDLITRDYL
ERDKENPNMFRYLA

Fig. 33

MNDRKVIELEQGWEFMGKGITKLKRILEGLPEPPFNSEDYMMLYTT [1] YNMCTQKPPHDYSQQLY
DNYKEAFVDYIHSTVLP SLGDKHDEFMLRELVKRWSNHKVMVRWLSRFFHYLDRYFIARRSLPSLN
DVGLTCFRDLVYQEISGKAKDAVIALIDEEREQIDRALLKNVLDIYVEIGMTQMDYYEKDFEAH
MLDDTAAYYSRKASSWILEDSCPEYMLKSEECLKKEKDRVAHYLHSSSEPKLLEKVQNELLLVYEN
QLLEKENSGCRALLKDDKVEDLSRMYRLYSKVTKGLEPIGSIFKQHITDEGTALVQQAEDAAISKA
ENAGGGSHEQVFVRKVIELHDKFMTYVTDCFNSHTIFHKALKEAFEVFLNKG VAGSSSAELLASFC
DNILKKGSEKLSDEAIEDSLEKVVKLLAYVSDKDLFAEFYRKKLSRLLFDKSANDDHERSILTK
LKQQCGGQFTSKMEGMVTDLT LARENQTNFEEYLGQNTDASPGLDLTVTVLTTGFWPSYKSSDLNL
PAEMVRCVEVFKQFYQTKTKHRKLTWVYSLGSCNINGKFGPKTIELVVGTYQAAALMLFNTSDRLS
YSEITTQLNLADEDLVRLVLSLSCAKYKILLKEPSTRNVISTDCFSFNSNFTDRMRRIKIPLPPMD
ERKKVVEDVDKDRRYAIDASIVRIMKSRKALGYQQLITECVEQLSRMFKPDFKAIAKKRIEDLITRD
YIERDKENPQLFRYLA

Fig. 34

MNDRKVIELEQGWEFMGKGITKLKRILEGLPEPPFNSEDYMMLYTT **[I]** YNMCTQKPPHDYSQQLY
DNYKQAFVDYINSTVLP SLREKHDEFMLRELVKRWANHKVMVRWLSRFFHYLDRYFIARRSLPSLN
EVGLTCFRDLVYQEISGKAKDAVIALIDIEREGGQIDRSLLKNVLDIYVEIGMGQMDHYEKDFEAH
MLDDTAAYYSRKASSWILEDSCPEYMLKSEECLKKEKERVANYLHSSSEPKLLEKVQNELLVYES
QLLEKENSGCRALLKDDKVDDLSRMYRLYSKVTKGLEPIGSIFKQHITDEGTALVQQAEDAAISKA
ENTGGSHEQVFVRKVIELHDKFMTYVTDCFNSTIFHKALKEAFEVFLNKG VAGSSSAELLATFCD
NILKKGSEKLSDEAIEDSLEKVVKLLAYVSDKDLFAEFYRKKLSRRLFLDKSANDDHRSILTKL
KQQCGGQFTSKMEGMVTDLT LARENQTNFEEYLSQNPDASPGLDLTVTVLTTGFWPSYKSSDLNLP
AEMVRCVEVFKQFYSTKTKHRKLTWVYSLGSCNINGKFGPKTIELVVGTYQAAALMLFNTSDRLSY
SEIATQLNLADEDLVRVLQSLSCAKYKILLKEPNTKTVSPTDCFSFNSSFTDRMRIRIRIPLPPMDE
RKKVVEDVDKDRRYAIDASIVRIMKSRKVLGYQQ LITECVEQLSRMFKPDFKAIAKKRIEDLITRDY
IERDKENPQLFRYLA

Fig. 35

ATGACAATGGGCGAGCGGAAGACTATTGACTTGGAGCAGGGATGGGAGTTTATGCAGAAGGGTATC
ACAAAGTTGAAGAACATTCTCGAGGGCTTGCCTGAGCCTCAGTTCAGCTCCGAGGACTACATGATG
CTTTACACTACCAT **[G]** TATAACATGTGCACCCAAAAGCCGCCGCATGATTACTCCCAGCAGCTGT
ATGATAAATATCGTGAATCTTTTGAAGAGTACATCACTTCTATGGTCTTACCATCCTTGAGGGAGA
AGCACGATGAGTTCATGTTGAGAGAACTAGTAAAAAGGTGGACAAACCATAAAGTCATGGTGAGGT
GGCTTTCTCGCTTCTTCCACTATCTTGATCGGTACTTCATCGCTCGAAGGTCACTTCCACCTCTAA
ATGAAGTTGGCCTCACATGCTTCCGCGAATTGGTGTACAAAGAGCTAAATAGTAAAGTGAGGGATG
CAGTAATTTTATTGATTGATCAAGAACGTGAAGGAGAACAGATTGACAGAGCTCTACTGAAGAATG
TACTAGATATATTTGTGGAAATTGGTATGGGGCAAATGGATTACTATGAAAATGACTTTGAAGCTG
CCATGCTTAAAGATACTGCTGCTTATTACTCTAGGAAGGCTTCCAATTGGATCCTAGAAGATTCTT
GTCCCGATTATATGCTTAAAGCAGAGGAGTGCTTGAAACGAGAAAAGGATAGGGTTTCCCCTATT
TGCACTCTAGTAGCGAGCCAAAGTTGTTGGAGAAAGTTCAACATGAACTATTATCTGTTTATGCTA
CTCAACTGCTGGAAAAAGAGCATTTCAGGATGCCATGCATTGCTTAGAGATGACAAGGTGGAAGATT
TGTCAAGGATGTTCCGTCTATTCTCCAAAATACCGAAGGGACTGGATCCAGTTTCCAACATATTTA
AGCAGCATGTAAGTCTGAAGGAACAGCACTGGTCAAACAGGCAGAAGATGCTGCAAGTAACAAGA
AGGCTGAGAAAAAGGACATAGTTGGTCTGCAGGAACAGGTTTTTTGTAAGAAAAGTGATTGAGCTTC
ACGACAAGTACTTGGCTTATGTGAATGATTGTTTCCAAAACCCACACACTTTTCCATAAGGCTCTCA
AGGAAGCTTTTGAAGTATTTTGAATAAGGGTGTTGCTGGAAGTTCTAGTGCAGAATTGCTTGCTA
CCTTTTGTGATAACATCCTTAAGAAAGGTGGGAGTGAGAAGTTGAGTGATGAAGCAATCGAGGAGA
CACTTGAGAAGGTTGTGAAGTTGTTGGCATAACATTTGCGACAAAGATCTGTTTGCTGAATTCTATA
GAAAAAACTTGCCCGAAGGCTTCTCTTTGACAAGAGCGCGAACGATGACCACGAGAGAAGTATAT
TGACCAAATTGAAGCAACAATGTGGTGGTCAGTTCACTTCTAAGATGGAGGGAATGGTTACTGATT
TGACTTTGGCAAGGGAGAACCAAACTAGTTTTGAGGAGTATCTGAGCAATAATCCACAAGCGAGTC
CTGGCATCGACCTGACTGTTACTGTTTTAACTACTGGATTTTGGCCAAGCTACAAGTCTTTTGACC
TCAACCTGCCGGCAGAGATGGTAAAGTGTGTTGAAGTTTTTCAGAGAGTTTTATCAAACAAAAACCA
AGCATCGAAAACCTTACATGGATTTACTCATTGGGTACTTGTAACATCAGTGGAAAATTTGAACCGA
AAACGATGGAGCTGATTGTGACAACTTATCAGGCTTCTGCCCTGTTGCTATTCAATTCTTCGGATA
GACTAAGTTACTCGGAAATCATGACACAATTAAATTTGAGTGACGATGATGTAGTTAGACTACTCC
ACTCGTTGTCATGTGCCAAGTATAAAAATTCTTAATAAGGAACCAAATACGAAAACCATCTCTCCGA
ACGATCATTTTGAAGTTCAATGCAAAATTCTCCGACAAAATGAGGAGAATAAAGATCCCTCTTCCGC
CTGTGGATGAGAAAAAGAAAGTCATTGAAGATGTTGACAAGGATCGAAGGTATGCTATTGACGCCT
CAATCGTGCGTATCATGAAGAGTCGGAAAGTTCTTGGTCATCAGCAACTAGTGATGGAGTGCGTCG
AGCAATTGGGCCGTATGTTCAAGCCCGATTTCAAGGCGATAAAGAAGAGAATTGAAGACCTGATCA
CTCGGGATTATCTAGAGAGAGACAAAGACAACCCCCACTTGTTTAGGTACTTGGCTTGA

Fig. 36

ATGACAATGGGCGAGCGGAAGACTATTGACTTGGAACAGGGATGGGAGTTTATGCAGAAGGGTATC
ACAAAGTTGAAGAACATTCTTGAGGGCTTGCTGAGCCCCAGTTCAGCTCCGAGGACTACATGATG
CTTTACACTACCAT **[G]** TATAACATGTGCACCCAAAAGCCGCCGCATGATTACTCCCAGCAGCTGT
ATGATAAATATCGTGAATCTTTTGAAGAGTACATCACTTCTATGGTCTTACCATCCTTGAGGGAGA
AGCATGACGAGTTCATGTTGAGAGAACTAGTCAAAAGGTGGACAAACCATAAAGTCATGGTGAGGT
GGCTTTCTCGCTTCTTCCACTATCTTGATCGGTACTTCATCGCTCGAAGGTCACTTCCACCTCTAA
ATGAAGTTGGCCTCACATGCTTCCGCGAATTGGTGTACAAAGAGCTAAACAGTAAAGTGAGGGATG
CAGTAATCTCATTGATTGATCAAGAACGTGAAGGAGAACAGATTGACAGAGCTCTACTGAAGAATG
TATTAGATATATTTGTGGAAATTGGTATGGGGCAAATGGATTACTATGAAAATGACTTTGAAGCTG
CCATGCTTAAAGATACTGCTGCTTATTACTCTAGGAAGGCTTCCAATTGGATCCTAGAAGATTCTT
GTCCCGATTATATGCTAAAAGCAGAGGAGTGCTTGAAGCGAGAAAAGGATAGGGTTTCCCCTATT
TGCACTCTAGTAGCGAGCCAAAGTTGTTGGAGAAAGTTCAACACGAACTGTTATCTGTGTATGCTA
CTCAACTGCTGGAAAAAGAGCATTTCAGGATGCCATGCATTGCTTAGAGATGACAAGGTGGAAGATT
TGTC AAGGATGTTCCGTCTCTTCTCCAAAATACCGAAGGGATTGGACCCAGTTTCCAACATATTTA
AGCAGCATGTA ACTGCTGAAGGAACAGCACTGGTCAAACAGGCAGAAGATGCTGCAAGTAACAAGA
AGGCCGAGAAAAAGGACATAGTTGGTCTGCAGGAACAGGTTTTTTGTAAGAAAAGTGATTGAGCTTC
ACGACAAGTACTTGGCTTATGTGAATGATTGTTTCCAAAACCACACACTTTTCCATAAGGCTCTCA
AGGAAGCTTTTGAAGTCTTTTGCAATAAGGGTGTTGCTGGAAGTTCTAGTGCAGAATTGCTTGCTA
CCTTCTGCGATAACATCCTTAAGAAAGGTGGGAGTGAGAAGTTGAGTGATGAAGCAATCGAAGAGA
CACTTGAGAAGGTTGTGAAGTTGTTGGCATAACATCTGCGACAAAGATCTGTTTGCTGAATTCTATA
GAAAAAAaCTTGCCCGAAGGCTTCTCTTTGATAAGAGCGCCAACGATGACCACGAGAGAAGTATAT
TGACCAAATTGAAGCAACAATGTGGTGGTCAGTTCACTTCTAAGATGGAGGGAATGGTTACTGATT
TGACTTTGGCAAGGGAGAACC AA ACTAGTTTCGAAGAGTATCTGAGCAATAATCCACAAGCTAGTC
CTGGAATCGACCTAACTGTTACTGTTTTGACTACTGGATTTTGGCCAAGCTACAAGTCTTTTGACC
TCAACCTGCCGGCGGAGATGGTAAAGTGTGTTGAAGTTTTTCAGAGAGTTTTATCAAACAAAACCA
AGCATAGAAA ACTTACATGGATTTACTCATTGGGTACTTGTAACATCAGTGGAAAATTTGAACCGA
AGACGATGGAGCTGATTGTGACAACATATCAGGCTTCTGCCCTGTTGCTATTCAATTCTTCGGACA
GACTAAGTTACTCCGAAATCATGACACAATTAAATTTGAGTGATGATGATGTTGTTAGACTGCTCC
ACTCATTGTCGTGTGCCAAGTATAAAATTCTTAATAAGGAGCCAAATACGAAAACCATCTCACCGA
ACGATCATTTTGAAGTTCAATGCAAAATTCTCCGACAAAATGAGGAGAATAAAGATCCCTCTTCGC
CTGTGGATGAGAAAAaGAAAGTCATTGAAGATGTTGACAAGGATCGAAGGTATGCTATTGACGCCT
CAATCGTGCGTATCATGAAGAGTCGAAAAGTTCTTGGTCATCAGCAACTAGTGATGGAGTGCGTGC
AGCAATTGGGTGCGTATGTTCAAGCCCGATTTCAAGGCGATAAAGAAGAGAATTGAAGACCTGATCA
CTCGGGACTATCTAGAGAGAGACAAAGACAACCCCCACTTGTTTAGGTACTTGGCTTGA

Fig. 37

ATGACAATGGGTGAGCGGAAGACTATTGACTTGGAGCAAGGATGGGAGTTTATGCAGAAGGGAATC
ACAAAATTGAAGAACATTCTGGAAGGATTGCCTGAGCCACAGTTCAGCTCCGAGGACTACATGATG
CTTTACACTACAAT **[G]** TATAACATGTGTACCCAGAAGCCACCGCATGATTACTCCCAGCAGCTGT
ATGATAAATACCGCGAATCGTTTGAGGAGTACATCAGTTCTATGGTTTTACCATCCTTGAGGGAGA
AGCATGACGAATTTATGTTGAGAGAACTGGTCAAAAGGTGGACCAACCATAAAGTCATGGTGAGGT
GGCTTTCTCGCTTCTTCCACTATCTTGATCGATACTTCATTGCTCGAAGGTCACTTCCACCTCTCA
ATGAAGTTGGCCTCACTTGCTTCCGTGAATTGGTGTACAAAGAGCTAAACAGTAAAGTGAGGGATG
CAGTAATTTTCATTGATCGATCAAGAACGTGAAGGAGAGCAGATTGACAGAGCTCTGTTGAAGAACG
TGTTGGATATATTTGTGGAGATTGGGATGGGGCAAATGGATTATTATGAAAATGACTTTGAAGCTG
CCATGCTTAAAGATACTGCTGCTTACTACTCTAGGAAGGCATCAAATTGGATCTTAGAAGATTCTT
GTCCTGATTATATGCTAAAAGCAGAGGAGTGCTTGAGACGAGAAAAGGACCGAGTTTCTCACTATC
TGCACTCTAGTAGCGAGCCAAAGTTATTGGAGAAAGTTCAACATGAACTATTGTCTGTTTATGCTA
CTCAACTGCTGGAGAAAGAGCATTTCAGGATGCCATGCATTGCTTAGAGATGACAAGGTGGAAGATT
TGTC AAGGATGTTCCGTCTCTTCTCCAAAATACCCAAGGGATTGGACCCAGTTTCCAACATATTTA
AGCAGCATGTC ACTGCTGAAGGAACAGCATTAGTCAAACAGGCAGAAGACGCTGCAAGTAACAAGA
AGGCCGAGAAAAAGGACATCGTTGGTCTGCAAGAACAGGTTTTTTGTTAGAAAAGTGATTGAGCTTC
ACGACAAGTACTTGGCATATGTGAATGATTGTTTCCAAAACCACACACTTTTTTCACAAGGCTCTCA
AGGAAGCTTTTTGAAGTCTTTTGCAATAAGGGTGTTGCTGGAAGTTCTAGTGCAGAATTACTTGCTA
CCTTTTGTGATAACATCCTTAAGAAAGGTGGGAGTGAGAAGTTGAGTGATGAAGCAATTGAGGAAA
CACTCGAGAAGGTCGTGAAATTGCTGGCGTATATCTGCGACAAAGATCTGTTTGCTGAATTCTATA
GAAAAAACTCGCCCGAAGGCTTCTCTTCGACAAGAGTGCGAATGATGACCACGAGAGAAGTATAC
TGACGAAATTGAAGCAACAATGTGGTGGTCAGTTTACCTCTAAGATGGAGGGAATGGTCACGGATT
TGACACTGGCAAGGGAGAACC AA ACTAGTTTTGAGGAATATCTGAGCAATAATCCACAAGCTAGTC
CTGGAATCGACTTGACCGTTACCGTTTTGACCACTGGTTTTTTGGCCAAGCTACAAGTCTTTTGACC
TCAACCTGCCGGCGGAGATGGTAAAGTGTGTTGAAGTTTTTCAGGGAATTTTATCAAACAAAACCA
AGCACAGAAA ACTTACGTGGATTTACTCGTTGGGTACCTGTAACATCAGCGGAAAATT CGAACCGA
AAACGATGGAGCTGATCGTGACAACCTATCAGGCTTCTGCCCTGCTGCTTTTCAATTCCTCGGATA
AACTAAGTTACTCCGAGATCATGACTCAATTAACTTGAGTGACGATGATGTTGTTAGACTGCTCC
ACTCGTTGTCGTGTGCGAAGTATAAAATTCTTAACAAGGAGCCAAATACGAAAACCATCTCTCCGA
ACGATCATTTTGAGTTCAACGCAA AATTCTCCGACAAAATGAGGAGAATAAAGATCCCTCTTCCGC
CTGTGGATGAGAAAAAGAAAGTAATAGAAGATGTTGACAAGGATCGAAGATATGCTATCGATGCCT
CGATCGTGCGTATCATGAAGAGTAGGAAAGTTCTGGGTCACCAGCAGTTAGTGATGGAGTGCGT CG
AGCAACTGGGTCGTATGTTCAAGCCTGATTTCAAGGCGATAAAGAAGAGAATCGAAGATCTGATCA
CTCGTGACTATTTAGAGAGAGACAAAGACAACCCCCACTTGTTTAGGTACTTGGCTTGA

Fig. 38

ATGACAATGGGCGAGCGGAAGACTATTGACTTGGAACAAGGATGGGAGTTTATGCAGAAGGGAATC
ACAAAGTTGAAGAACATTCTTGAGGGCTTGCCTGAGCCTCAGTTCAGCTCCGAGGACTACATGATG
CTTTATAACCACCAT **[G]** TACAACATGTGCACACAAAAGCCGCCACATGATTACTCCCAGCAGCTAT
ACGATAAATACCGTGAATCTTTTGAGGAGTATATCACTTCTATGGTCTTACCATCCTTGAGGGAGA
AGCATGACGAGTTCATGTTGAGAGAACTGGTCAAAAGGTGGACGAACCATAAAGTCATGGTGAGGT
GGCTTTCTCGCTTCTTCCACTATCTTGACCGATACTTCATTGCTCGAAGATCACTTCCACCTCTCA
ACGAAGTTGGCCTCACATGCTTCCGTGAATTGGTGTACAAAGAGCTAAACAGTAAAGTGAGGGATG
CAGTAATTTTCATTGATTGATCAAGAACGTGAAGGAGAGCAGATTGACAGAGCTCTACTGAAGAATG
TATTAGATATATTTGTGGAAATTGGGATGGGGCAAATGGATTACTATGAAAATGACTTTGAAGCTG
CCATGCTTAAAGATACTGCTGCTTATTACTCTAGGAAGGCTTCCAATTGGATCCTAGAAGATTCTT
GTCCCGATTATATGCTAAAAGCAGAGGAGTGCTTGAAACGAGAAAAGGATAGAGTTTCTCACTATT
TGCCTCTAGTAGCGAGCCAAAGTTATTAGAGAAAGTTCAACATGAACTGTTATCTGTGTATGCTA
CTCAACTGCTGGAAAAAGAGCATTTCAGGATGCCATGCATTGCTTAGAGATGACAAGGTGGAAGATT
TGTCAAGGATGTTCCGCCTCTTCTCCAAAATACCCAAGGGATTGGACCCAGTTTCCAACATATTTA
AGCAGCATGTCCTGCTGAAGGAACAGCATTGGTCAAACAGGCAGAAGATGCTGCAAGTAACAAGA
AGGCCGAGAAAAAGGACATAGTTGGTCTGCAGGAACAGGTTTTTTGTAAGAAAAGTGATTGAGCTTC
ACGACAAGTACTTGGCTTACGTGAATGATTGTTTCCAAAACCACACACTTTTTTCACAAGGCTCTCA
AGGAAGCTTTTGAAGTCTTTTGCAATAAGGGTGTTGCTGGAAGTTCTAGTGCAGAATTACTTGCTA
CCTTTTGTGATAACATCCTTAAGAAAGGTGGGAGCGAGAAGTTGAGTGATGAAGCAATTGAGGAGA
CACTTGAGAAGGTCGTGAAGTTGCTGGCATAACATCTGCGACAAAGATCTGTTTGCTGAATTCTATA
GAAAAAACTTGCCCGAAGGCTTCTCTTTGACAAGAGTGCCAACGATGACCATGAGAGAAGTATAT
TGACCAAATTGAAGCAACAATGTGGTGGCCAGTTCACCTCTAAGATGGAGGGGATGGTCACTGATT
TGACTTTGGCAAGGGAGAACCAACTAGTTTCGAGGAGTATCTGAGCAATAATCCACAAGCTAGTC
CTGGAATCGACTTGACTGTCACTGTTTTGACTACTGGCTTTTGGCCAAGCTACAAGTCTTTTGACC
TCAACCTGCCGGCAGAGATGGTAAAGTGTGTTGAAGTTTTTCAGAGAGTTCTATCAAACAAAAACAA
AGCATAGAAAACCTTACATGGATTTACTCATTGGGTACCTGTAACATCAGCGGAAAATTTGAACCGA
AAACGATGGAGCTGATTGTAACAACCTTATCAGGCTTCTGCCCTGCTGCTATTCAATTCCTCAGATA
GATTAAGTTATTCCGAGATCATGACACAATTAAATTTGAGTGACGATGATGTTGTTAGACTGCTCC
ACTCATTGTCATGTGCCAAGTATAAAATTCTTAATAAGGAGCCGAACACGAAAACCATCTCTCCGA
ATGATCATTTTGAAGTTCAATGCAAAATTCTCCGACAAAATGAGGAGAATAAAGATCCCTCTTCCGC
CTGTGGATGAGAAAAAGAAAGTCATTGAAGATGTTGACAAGGATCGAAGGTATGCTATTGATGCCT
CAATCGTGCGTATCATGAAGAGTCGGAAAGTTCTGGGTCATCAGCAGCTAGTGATGGAGTGCGTCG
AGCAATTGGGTTCGTATGTTCAAGCCCGACTTCAAAGCGATAAAGAAGAGAATCGAAGATCTGATCA
CTCGGGACTATTTAGAGAGAGACAAAGACAACCCCCACTTGTTTTAGGTACTTGGCTTGA

Fig. 39

ATGAACCAACGCAGCACAATCGATCTGGAACATGGATGGGATTTTCATGCAAAAGGGCATCACAAAG
CTGAAGAACATTCTAGAAGGGCTGCCTGAGCCTCAGTTCAGCTCAGAGGACTATATGATGCTGTAT
ACGACAAT **[G]** TACAACATGTGTACTCAGAAGCCCCCACATGATTATTCTCAACAGCTGTATGACA
AATATCGTGAAGCTTTTGAAGAATATATCACAACGACGGTATTACCTTCTTTGAGAGAAAAACATG
ACGAGTTCATGTTGCGAGAGTTGGTAAAAAGGTGGTCAAACCATAAGGTCATGGTTAGATGGTTAT
CGCGATTCTTCCATTATCTTGACCGTTATTTCAATTGCTCGGAGATCACTGCCAGGGCTTAATGAAG
TTGGACTAACTTGCTTCCGCGATCTGGTCTACCAAGAGTTGAATGGAAAAGTCAGGGATGCTGTTA
TATCTCTGATTGATCAAGAGCGTGAGGGAGAGCAAATTGACAGAGCTCTACTGAAGAATGTGCTAG
ATATATTTGTTGAAATTGGAATGGGGTCAATGGATTATTATGAGAATGATTTTGAAGCTGCAATGC
TCAAGGACACTGCGGCTTATTATTCTCGCAAAGCTTCTAACTGGATCCTCGAAGATTCATGTCCAG
ATTATATGCTGAAAGCTGAGGAGTGCTTGAAACGGGAGAAGGATAGGGTCTCCCATTATCTCCATT
CTAGCAGTGAGACAAAGTTGCTTGAGAAAGTGCAACATGAGTTGTTATCTGTGTATGCCAATCAAC
TTCTTGAGAAGGAGCACTCTGGATGCCATGCATTACTTAGAGATGATAAGGTCGATGATTTATCAA
GGATGTATAGACTCTTTTCTAAGATTCCTCGAGGCTTAGAGCCTGTGGCTAATATATTTAAGCAGC
ATGTTACTGCTGAAGGTACAGCTTTGGTGAAACAGGCTGAAGATGCTGCTAGCAACAAAAAGGCAG
AGAAGAGAGATGTGGTTGGTTTGCAGGAACAGGTTTTTGTTCGGAAAGTGATTGAGCTTCATGATA
AATATTTGGCGTATGTGAATAACTGTTTCCAAAACCACACACTTTTTTCACAAGGCACTTAAAGAAG
CTTTCGAACTTTTCTGCAACAAGGGTGTTGCTGGTAGCTCAAATGCTGAACCTTCTTGCCACATTCT
GCGACAACATTCTCAAAAAAGGCGGGAGTGAAAAATTGAGTGATGAAGCCATTGAAGAGACGCTGG
AGAAGGTGGTAAAGCTGCTGGCTTATATTAGTGATAAGGACTTGTTTGCAGAATTCTATAGGAAAA
AGCTCGCCCGGCGGTTGTTATTTGATAAGAGTGCCAATGATGAACATGAGAGAAGTATCCTAACAA
AGTTGAAGCAGCAGTGTGGAGGTCAGTTCACATCAAAGATGGAGGGAATGGTCACAGATTTGACAT
TGGCAAGGGAAAATCAAGCCAGCTTTGAGGAGTATTTGAGCAATAATCCAACAGCAAATCCAGGAA
TTGACTTGACGGTGACTGTCTTGACTACTGGCTTCTGGCCTAGCTACAAGTCTTTTGATCTCAACC
TCCCAGCAGAAATGGTTAGGTGTGTTGAAGTATTCAAGGAGTTTTATCAAACAAAAACGAAGCACA
GGAACTTACATGGATATACTCTTTGGGAACTTGCAACATAAATGGAAAATTTGAGGCAAAGACTA
TTGAGCTCGTTGTCACTACTTATCAGGCTTCTGCTCTGCTTCTCTTTAATGCATCAGATAGATTGA
GTTATCAGGAAATCATGACGCAATTAAACCTATCAGATGATGATGTTGTTTCGGCTTCTTCATTCCC
TTTCATGTGCGAAATACAAGATTCTCAACAAGGAGCCAAGCACCAAAACAATTTCTCCGACTGATG
TCTTTGAGTTCAACTCAAAGTTCACTGACAAAATGAGGAGGATCAAGATACCTCTCCCACCAGTTG
ATGAAAAGAAAAAGGTAATTGAAGACGTTGACAAGGATAGGCGGTATGCTATAGATGCCTCAATTG
TGCGTATTATGAAGAGTCGTAAAGTATTGGGCTACCAGCAACTGGTCATGGAGTGCGTTGAGCAGT
TGGGACGCATGTTCAAGCCTGATGTCAAAGCTATCAAGAAGAGAATTGAAGATCTGATAACTAGAG
ATTACCTAGAGAGGGACAAAGATAACCCAAACTTGTTCAAGTACTTGGCATGA

Fig. 40

ATGAACCAACGAAGCACAATCGATCTGGAACATGGATGGGACTTCATGCAAAGGGGCATTACAAAG
CTGAAGAACATTCTAGAAGGGCTGCCTGAGCCTCAATTCAGCTCAGAGGACTATATGATGCTATAT
ACGACAAT **[G]** TACAACATGTGTACTCAAAAGCCCCCACATGATTATTCTCAACAGCTGTATGACA
AATATCGTGAAGCTTTTGAAGAATATATCACAACAACGGTATTGCCTTCTTTGAGAGAAAAACATG
ACGAGTTTATGTTGCGAGAGTTGGTAAAAAGGTGGTCAAATCATAAAGTCATGGTCAGATGGTTGT
CAAGATTCTTCCATTACCTTGACCGGTATTTCAATTGCCCGGAGATCTCTGCCGGGGCTTAATGAAG
TTGGACTAACTTGCTTCCGCGATCAGGTCTACCAAGAGTTGAATGGAAAAGTCAGGGATGCTGTTA
TATCTCTGATTGATCAAGAGCGTGAGGGAGAGCAAATTGACAGAGCTCTACTTAAGAATGTGCTTG
ATATATTTGTCGAAATTGGAATGGGGTTAATGGATTATTATGAGAATGATTTTGAAGCTGCAATGC
TCAAGGACACAGCGGCTTATTATTCTCGCAAAGCTTCTAATTGGATCCTCGAAGATTCATGTCCGG
ATTATATGCTGAAAGCCGAGGAGTGCTTGAAACGGGAGAAGGATAGGGTCTCTCATTATCTCCATT
CAAGCAGCGAGACGAAGTTGCTTGAGAAAGTGCAACATGAGTTGTTGTCTGTGTATGCCACTCAAC
TTCTTGAGAAGGAGCACTCTGGATGCCATGCGTTACTGAGAGATGATAAGGTTGAAGATTTATCAA
GGATGTATAGGCTCTTTTCTAAGATTTCTCGAGGCTTAGACCCTGTGGCCAATATTTTTTAAGCAGC
ATGTTACTGCTGAAGGTACAGCTTTGGTAAAACAGGCTGAAGATGCTGCTAGCAATAAAAAGGCAG
AGAAGAGAGATGTGGTTGGTTTGCAGGAACAGGTTTTTGTTCGGAAAGTGATTGAACTTCATGATA
AATATTTGGCTTATGTGAATAACTGTTTCCAAAACCACACACTTTTTTCACAAGGCGCTTAAAGAAG
CTTTTGAGCTTTTTCTGCAACAAGGGTGTTGCTGGTAGCTCAAGCGCTGAACTTCTTGCCACCTTCT
GTGACAACATTCTCAAAAAAGGCGGGAGTGAGAAATTGAGTGATGAAGCTATTGAAGAAACGTTGG
AAAAGGTGGTAAAGCTACTAGCTTATATTAGTGATAAGGACTTGTTTGCAGAATTCTATAGGAAAA
AGCTAGCCCGGCGGTTGTTATTTGATAAGAGTGCCAATGATGAACATGAAAGAAGTATCCTAACAA
AGTTGAAGCAGCAGTGTGGGGGGCAGTTCACATCAAAGATGGAGGGAATGGTCACAGATTTGACAT
TGGCAAGGGAAAATCAAGCCAGCTTCGAGGAGTATTTGAGCAATAATCCAATAGCAAATCCAGGAA
TTGACTTGACGGTGACTGTCTTGACTACTGGCTTCTGGCCTAGCTACAAGTCTTTTGATCTCAACC
TCCCAGCAGAAATGGTTAGGTGCGTTGAAGTATTTAAGGAGTTCTATCAAACAAAAACAAAGCACA
GGAACTTACGTGGATATACTCTTTGGGAACTTGCAACATAAATGGAAAATTTGAGCCAAAAACTA
TTGAGCTCGTTGTCACTACTTATCAGGCTTCTGCTCTGCTGCTCTTTAATGCATCAGATAGATTGA
GTTATCAGGAAATCATGACGCAATTAAACCTATCAGATGATGATGTTGTTTCGGCTTCTTCATTCCC
TTTCATGTGCGAAGTACAAGATACTCAACAAGGAGCCAAGCACCAAACAATTTCTCCGACTGATG
TCTTTGAGTTCAACTCAAAGTTCACTGACAAAATGAGGAGGATCAAGATACCTCTCCCTCCTGTTG
ATGAGAAGAAAAAGGTAATTGAAGACGTTGACAAGGATAGGCGGTATGCTATAGATGCTTCAATTG
TGCGTATTATGAAGAGCCGTAAAGTATTGGGCTACCAGCAACTAGTCATGGAGTGCGTTGAGCAGT
TGGGGCGCATGTTCAAGCCTGATGTCAAAGCTATCAAGAAGAGAATCGAAGATTTGATAACTAGAG
ATTACCTAGAGAGGGACAAAGATAATCCAAACCTGTTCAAGTACTTGGCATGA

Fig. 41

ATGAACCAGCGTTCCACAATCAATCTAGAACATGGATGGGACTTCATGCAAAGGGGCATTACAAAG
CTGAAGAACATTCTAGAAGGGCTGCCCCGAGCCTCAGTTCAGCTCAGAGGACTATATGATGCTGTAT
ACGACAAT **[G]** TACAACATGTGTACTCAGAAGCCCCCACATGATTATTCTCAACAGCTGTATGACA
AATATCGTGAAGCTTTTGAAGAATATATCACAACAACGGTATTGCCTTCTTTGAGAGAAAAACATG
ACGAGTTCATGTTGCGAGAGCTGGTAAAAAGGTGGTCAAACCATAAGGTCATGGTCAGATGGTTAT
CGCGATTCTTCCATTATCTTGATCGCTATTTCAATTGCCCGGAGATCTCTACCGGGGCTTAATGAAG
TTGGACTAACTTGCTTCCGAGATCTGGTCTACCAAGAGTTGAATGGAAAAGTCAGGGATGCTGTTA
TATCTCTGATTGATCAAGAGCGTGAGGGAGAGCAAATTGACAGAGCTCTACTGAAGAATGTGCTAG
ATATATTTGTTGAAATTGGAATGGGGTCGATGGATTATTATGAGAATGATTTTGAAGCTGCAATGC
TCAAGGACACCGCAGCTTATTATTCTCGCAAAGCTTCTAACTGGATACTTGAAGATTCATGTCCAG
ATTATATGCTGAAAGCCGAGGAGTGCTTGAAACGGGAGAAAGATAGGGTCTCTCACTATCTTCATT
TAAGCAGTGAGACAAAGTTGCTTGAGAAAGTGCAACATGAGTTGTTGTCTGTGTATGCCACTCAAC
TTCTTGAGAAGGAGCACTCTGGGTGCCATGCGTTACTAAGAGATGATAAGGTTGAAGATTTATCAA
GGATGTATAGGCTCTTTTCTAAGATTCCTCGAGGCTTAGACCCTGTGGCTAATATATTTAAGCAGC
ATGTTACTGCTGAAGGTACAGCTTTGGTCAAACAGGCTGAAGATGCTGCTAGCAACAAAAAGGCAG
AGAAAAGAGATGTGGTTGGTTTGCAGGAACAGATTTTTGTTTCGGAAAGTGATTGAGCTTCATGATA
AGTATATGGCATATGTGAATAACTGTTTCCAAAACCACACACTTTTTTCACAAGGCGCTTAAAGAAG
CTTTCGAACTTTTTCTGCAACAAGGGTGTTGCTGGTAGCTCAAGTGCTGAACTTCTTGCCACATTCT
GCGACAATATTCTCAAGAAAGGCGGGAGTGAGAAATTGAGTGATGAAGCCATTGAAGAGACGCTGG
AGAAGGTTGTAAAGCTGCTAGCATATATTAGTGACAAGGACTTGTTTGCAGAATTCTATAGGAAAA
AGCTAGCCCGGCGGTTGTTATTTGATAAGAGTGCCAATGATGAACACGAGAGAAGTATCCTTACAA
AGTTGAAGCAGCAGTGTGGGGGCCAGTTCACATCAAAGATGGAGGGAATGGTGACAGATTTGACAT
TGGCAAGGGAAAATCAAGCCAGCTTTGAGGAGTATTTGAGCAACAATCCAGCAGCAAATCCAGGAA
TTGACTTGACGGTGACTGTCTTGACTACTGGCTTCTGGCCTAGCTACAAGTCTTTTGATCTCAACC
TCCCAGCAGAAATGGTTAGGTGCGTTGAAGTATTCAAGGAGTTTTATCAAACAAAAACGAAGCACA
GGAACTTACGTGGATATACTCTTTGGGAACTTGCAATATAAATGGAAAATTTGAGCCAAAGACTA
TTGAGCTCGTTGTCACTACTTATCAGGCTTCTGCTCTGCTGCTCTTTAATGCATCGGATAGATTGA
GTTATCAGGAAATCATGACGCAACTAAACCTATCAGATGATGATGTTGTTTCGGCTTCTTCATTCCC
TTTCATGTGCGAAGTACAAGATTCTCAACAAGGAGCCAAGCACCAAACAATTTCTCCGACTGATG
TCTTTGAGTTCAATTTTAAGTTCACTGACAAAATGAGGAGGATCAAGATACCTCTCCCTCCTGTTG
ATGAGAAGAAAAAGGTAATTGAAGATGTTGACAAAGATAGGCGGTACGCTATAGATGCTTCAATTG
TGCGTATTATGAAGAGTCGTAAAGTATTGGGCTACCAGCAACTGGTCATGGAGTGTGTTGAGCAGT
TGGGACGTATGTTCAAGCCTGATGTCAAAGCTATCAAGAAGAGAATTGAAGATTTGATAACTAGAG
ATTACCTAGAGAGGGACAAAGATAATCCGAACCTTGTTCAAGTACTTGGCATGA

Fig. 42

ATGGAGCGCAAGACGATTGACTTGGACCAAGGATGGGACTATATGCAGACTGGTATCACTAAGCTG
AAACGGATTCTTGAGGGGCTGCCTGAGCCGCAGTTTGACTCTGAGCAATACATGATGCTCTATACG
ACTAT **[G]** TACAACATGTGCACTCAGAAACCTCCTCATGATTACTCACAGCAGCTTTATGACAAGT
ATCGTGAAGCATTGAGGAGTATATTCACCTCAACTGTTTTGCCTGCTCTAAGGGAGAAGCATGATG
AGTACATGCTGAGGGAGCTGGTTAAGAGATGGTCTAACCATAAAGTTATGGTTTCGATGGCTATCCC
GCTTCTTCTACTATCTTGACCGTTACTTCATTGCTCGGAGGTCACTTCCACCCCTGAATGAAGTTG
GCCTGACTTGCTTCCGTGACCTGGTTTATAACGAGTTGCATTCCAAGGTCAAAGATGCTGTAATAG
CACTTGTTGATAAAGAACGGGAGGGTGAGCAGATTGACAGGGCTCTATTGAAAAACGTATTAGACA
TTTATGTAGAGATTGGAATGGGACAGATGGAAAGATACGAGGAGGATTTTGAAAGCTTCATGCTTT
TAGATTCAGCATCTTACTATTCTCGCAAGGCGTCAAGCTGGATCCAAGAAGATTCTTGCCCTGATT
ACATGCTGAAGTCTGAAGAATGTCTTAAGAAGGAGAGGGAGAGAGTGGCTCACTACCTTCACTCAA
GCAGCGAGCCAAAGCTGGTTGAGAAAGTACAACATGAGCTGTTGGTAGTGTATGCAAATCAGCTTC
TAGAAAAAGAGCATTTCAGGGTGCCGTGCATTGCTGAGAGATGACAAGGTTGATGACCTCTCCAGGA
TGTACAGGCTTTATCATAAAATTGTGAAAGGTTTGGAACCTGTTGCAAACATATTTAAGCAGCATG
TCACAGCAGAGGGTAACGCACCTTGTTCCAACAGGCCGAAGACACGGCCACTAATCATGCTGCAAATA
CTGCTAGCGTGCAGGAACAGGTTCTTATCAGAAAAGTGATTGAACTACATGATAAATACATGGTCT
ATGTTGTTGAGTGTTTCCAGAACCACACCCTCTTCCACAAGGCATTGAAAGAGGCATTTGAGATAT
TCTGTAACAAAACAGTCGCTGGAAGTTCTAGTGCTGAATTGCTTGCAACATTTTGCGACAATATTC
TCAAGAAGGGGGGAAGTGAAAAGCTGAGCGATGAAGCTATTGAAGATACCCTTGAGAAGGTGGTCA
AATTGCTTGCTTATATAAGTGACAAGGATCTTTTCGCCGAGTTCTACAGGAAGAAGCTGGCCCGTA
GGCTCTTATTTGATCGCAGTGCTAATGATGATCATGAGAGAAGTATCCTGACAAAGCTCAAGCAAC
AATGTGGTGGGCAGTTTACTTCGAAGATGGAGGGCATGGTGACTGATTTGACATTGGCAAGGGAAA
ACCAAAACAGCTTCGAGGAGTATCTTGGCAATAACCCCGCTGCAAACCCAGGGATTGATTTGACCG
TAACTGTTCTTACCACTGGTTTTTTGGCCAAGTTACAAATCATTTGACATAAATCTACCCGCTGAAA
TGGTCAAGTGTGTTGAAGTTTTTCAAAGGGTTTTATGAAACAAAGACAAAACATAGGAACTTACCT
GGATCTACTCACTAGGAACCTTGCCACCTCAATGGGAAGTTTGATGTCAAGCCCATTGAGTTAGTTG
TGTCTACATAACCAGGCTGCTGTGCTTCTGCTGTTCAACACAACAGACAAATTGAGCTACACTGATA
TCCTAACTCAGCTGAACCTGAGCCACGAAGATCTAGTGAGGTTGCTTCATTCCTTGTCATGTGCTA
GATACAAGATTCTTCTCAAGGAGCCAAGCACAAAGACTGTTTCCCAGTCTGATTCTTTTGAATTCA
ACTCCAAATTCACCGACAGAATGCGGAGAATAAAGATCCCTCTCCCACCTGTTGATGAGAGGAAGA
AAGTTGTGGAAGACGTGGACAAAGACAGACGCTATGCGATTGATGCTGCCATTGTGAGGATCATGA
AGAGCAGGAAAGTATTGGGACATCAACAACCTTGTTTCTGAGTGCGTTGAGCAACTTAGCCGAATGT
TCAAGCCTGATATCAAGGCAATCAAGAAGCGCATGGAGGATTTGATAACGAGAGATTATCTGGAGA
GGGACAAGGAGAACGCTAACATGTTTAGGTACTTGGCTTAG

Fig. 43

ATGATGATTGAGCGGAAACTATAGACCTGGAGCAGGGATGGGACTTTATGCAAAGGGAATCACA
AAGCTAAAGAATATTTTAGAAGGCTTTCCGGAGCCGCAATTCAGCTCGGAGGATTATATGATGCTT
TATACAACCTAT **[G]** TATAACATGTGTACACAGAAACCTCCACATGATTACTCTCAGCAGCTGTATG
AAAAGTATCGTGAAGCTATTGAGGAGTACATTACTTCTACAGTATTGCCTTCATTGAGAGAGAAGC
ATGATGAATTCATGCTTAGAGAACTTGTGAAGAGATGGTCTAATCATAAGGTCATGGTCAGGTGGC
TTTCTCGATTCTTTCACCTATCTTGATCGCTATTTTATTGCTCGGAGGTCACTTCCACCACTTCATG
AAGTTGGACTCACTTGCTTTCGGGACCTGGTTTACCAGGAGATAAATGGGAAAGTAAGGGATGCTG
TAATATCATTGATTAATCAAGAGCGCGAGGGAGAGCAAATTGACCGAGCTTTGTTGAAGAATGTTT
TAGATATATTTGTTGAAGTTGGAATGAGTCAAATGGATTATTATGAGAATGACTTTGAAGCAGACA
TGCTCAAAGATACAGCAGCATACTATTCTCGAAAGGCTTCCAACCTGGATCTTAGAAGATTCTTGTC
CAGATTATATGCTCAAAGCGGAAGAGTGTTTGAGACGGGAAAAGGACAGGGTCTCTAACTACCTTC
ATTCTAGTAGTGAACCCAAGTTGCTTGAGAAAGTTCAACATGAGTTACTATCACACTATGCAACTC
AGCTGCTTGAGAAAGAACACTCTGGGTGTCATGCATTGCTTAGGGATGACAAGGTGGCAGATTTAT
CAAGGATGTATAGGCTCTTCTCTAAAATACCTCGAGGCCTAGATCCCGTGTCTAATATTTTCAAGC
AGCATGTTACTGCTGAAGGTACAGCTTTGGTCAAACAAGCAGAAGATGCAGCTAGCAACAAGAAGG
CAGAGAAGAGAGATGTAGTAGGTTTACAAGAACAGGTTTTTGTGAGGAAAATAATTGAATTGCATG
ACAAATACCTTACATACGTAAATGACTGTTTTACAAACCACACTCTCTTCCATAAGGCGCTTAAGG
AGGCTTTTGAAATCTTCTGCAATAAGGGTGTCTCTGGAAGCTCTAGTGCAGAATTACTTGCCACAT
TCTGTGATAATATTCTCAAGAAAGGTGGAAGCGAGAAGTTAAGTGATGAAGCCATTGAGGAAACAC
TTGAGAAGGTTGTAAGGTTGCTTGCTTATATAAGTGACAAAGACTTATTTGCTGAATTTTATAGGA
AAAAGCTTGACGCGCTCTCTTATTCGACAAGAGTGCCAATGATGAGCATGAGAGAAGTATATTGA
CTAAGCTGAAGCAACAATGTGGGGGTCAATTTACATCAAAGATGGAAGGAATGGTCACTGACTTGA
CGTTGGCAAAGGAAAATCAGTCCAACCTTCGAGGAGTACCTCAATAATAATTCAAACGTAAATCCTG
GAATTGACTTGACAGTTACTGTTCTAACCCTGGGTTTTGGCCAAGTTACAAATCTTTTCGATCTCA
ACCTCCCAGCAGAGATGGTCAAATGTGTTGAAGTTTTTAGAGAATTCTACCAAACAAAAACAAAGC
ACAGAAAACCTGACATGGATATACTCTTTGGGTACTTGTAACATCATTGGAAAATTTGATCCAAAA
CCATGGAGCTTATTGTGACAACATAACCAGGCCTCTGCTCTGCTGCTATTTAACTCTTCTGATAGAC
TTAGTTATAATGAAATAATGACTCAGTTGAACTTGTCGGATGATGATGTTGTCAGACTACTTCATT
CTCTTTCGTGTGCAAAGTACAAGATTCTATCTAAAGAGCCGAACACCAAACTATATCTCCAACCTG
ATTGCTTTCAGTTCAATTCCAAATTTACTGATAAAATGAGGAGGATTAAGATTCCACTTCCCCCAG
TGGATGAGAAGAAAAAGGTAATTGAAGATGTTGATAAAGACAGGCGATATGCTATAGATGCTTCAA
TTGTCCGTATCATGAAGAGCCGCAAAGTTTTGGGTATCAGCAGCTAGTAATGGAGTGCGTTGAAC
AATTGGGTTCGCATGTTTAAGCCTGATGTCAAAGCAATCAAGAAGAGAATCGAAGATTTAATAACTC
GGGATTATCTGGAAAGAGACAAGGACAATGCCAACTTGTTTCAGGTATCTGGCATGA

Fig. 44

ATGAACGAGCGGAAGACTATCGATTTGGATAATGGATGGGAATTTATGCAGAAAGGGATCACTAAG
TTGAAGAAGATTCTCGAAGGTCAACCTGAGCCTCAGTTTAGCTCCGAGGACTATATGATGCTTTAC
ACAACATAT [G] TATAATATGTGTACGCAGAAGCCTCCACATGATTATTCTCAACAGCTGTATGACA
AGTACCGTGAGGCCTTTGAGGAGTACATAACTTCAACTGTCCTGCCTTCTTTACGAGAGAAGCATG
ATGAGTTTATGTTGAGAGAGCTCGTGAATAGATGGACAAACCATAAAGTCATGGTCAGGTGGCTTT
CTCGATTCTTTCACTATCTTGATCGGTACTTCATTGCGAGGAGGTCACTTCCTGCACTTCATGAAG
TTGGACTCACGTGCTTCCGGGATCTGGTCTATCAGGAGCTGAAAGTTAAAGTGAGGGATGCTGTAA
TATCTCTGATCGATCAAGAGCGTGAGGGGGAACAGATTGACCGAGCTTTATTAAAGAACGTGTTAG
ATATATTTGTTGAAATCGGAATGAGTCAAATGGATCAATATGAGAATGACTTTGAAGAAGCCATGC
TCACTGATACTGCTGCTTACTATTCTCGAAAAGCTTCAAACCTGGATCCTTGAAGATTCTTGTCCTG
ATTATATGTTAAAGGCAGAAGAATGTTTTCGACGAGAGAAGGACAGGGTTTCCCACTACCTACATT
TTAGTAGCGAGCCAAAGTTGCTTGAGAAAGTGCAACATGAGCTGCTATCTGTGTATGCAACCCAAT
TACTCGAGAAGGAACATTCTGGTTGTCATGCATTGCTTAGGGATGACAAGGTGGATGATTTGTCTA
GGATGTACAGACTCTTCTCGAAAATACCTAAAGGCCTGGATCCAGTTTCTTATATTTTTTAAGCAGC
ATGTTACAAATGAAGGGATGGCATTGGTTAAACAAGCAGAAGATGCAGCAAGCAACAAGAAGGCAG
AAAAGAGAGACGTGGTTAGTTTACAGGAGCAGGTTTTTGTTAGAAAAATTATTGAATTACATGACA
AATACCTCGCCTATGTGAATGACTGCTTTACAAACCATACTCTTTTCCATAAGGCTCTCAAGGAGG
CTTTTGAAATCTTTTGCAACAAGGGTGTTGCTGGAAGCTCTAATGCTGAACTACTTGCTACTTTCT
GTGATAACATCCTCAAAAAGGGTGGGAGTGAGAAATTAAGTGATGAGGCTATTGAAGAAACACTTG
AGAAGGTAGTAAAATTGTTAGCTTACATTAGCGATAAAGACTTGTTTCGCTGAATTTTACAGAAAAA
AGCTTGCACGGAGACTTCTCTTTGATAAGAGTGCAAATGACGAGCATGAACGAAGTATTTTGACTA
AACTAAAGCAACAGTGCGGTGGTCAGTTCACATCGAAAATGGAGGGGATGGTCACAGATTTGACTT
TGGCTAAAGAAAATCAATCCAGCTTTGAGGAGTATCTGGGAAATAATGCCAATGTGAATCCTGGCA
TTGACTTGACGGTTACTGTTCTGACCACTGGCTTCTGGCCTAGTTATAAATCCTTTGATCTCAACC
TTCCTGCTGAGATGGTCAAGTGCGTTGAAGTATTTAGAGAATTTTATCAAACAAAAACGAAGCATA
GAAAGCTCACATGGATATATTCTCTGGGTACTTGTAATATCAATGGAAAATTTGAACCCAAAACCA
TTGAGCTGATTGTGACAACCTACCAGGCCTCTGCTCTCCTGTTATTTAATACTTCTGATAGGTTGA
GTTATCAAGAAATCATGACTCAGTTAAATTTGTTCGGATGATGATGTTGTTTCGCCTGCTTCATTCCC
TTTCATGTGCCAAGTATAAAATTCTTACTAAAGAGCCGAACAACAAAACAATTTCCCCTACGGATT
ACTTTGAGTTCAACTCCAAGTTCACTGACAAAATGAGGAGAATTAAGATTCCACTACCTCCAGTTG
ATGAGAAGAAAAAGGTAATTGAAGATGTTGACAAGGACCGGCGATATGCCATTGATGCATCTATTG
TCCGCATTATGAAGAGCCGTAAAGTTTTTGGGCTACCAACAATTGGTTATGGAATGTGTTGAGCAAT
TGGGACGCATGTTTAAAGCCTGATGTCAAAGCAATTAAGAAGAGAATCGAAGATTTAATAACGCGTG
ATTATCTGGAAAGAGACAAGGATAATGCCAACCTTTTCAGATATTTGGCATGA

Fig. 45

ATGAATGAAAGAAAAACAATAGACTTAGAACAAGGATGGGACTTCATGCAGAAAGGCATAACAAAG
TTGAAGAACATTCTAGAAGGTCTTCCCGAGCCACAATTCAGCTCGGAAGATTACATGATGCTCTAC
ACAACCAT [G] TACAATATGTGCACACAAAAACCGCCACATGATTACTCTCAACAATTGTATGACA
AATACCGCGAGTCTTTTGAAGAGTACATTACTTCAACGGTGTTACCTTCTTTAAGAGAGAAGCATG
ATGAGTTTATGCTTAGAGAGCTTGTTAGAAGATGGTCAAATCATAAAGTGATGGTTAGGTGGCTTT
CTAGATTCTTCCATTATCTTGATCGATACTTCATTGCCCGAAGATCTCTTCCACCATTAAATGAAG
TTGGACTTGCGTGTTTTTCGTGATCTGGTATACCAAGAGGTGAATGGGAAAGTGAGAGATGCTGTAA
TATCTTTGATTGATCAAGAGCGTGAAGGCGAGCAAATTGACCGAGCATTACTCAAGAATGTTCTAG
ATATATTTGTTGAAATAGGAATGGGACAAATGGAATATTATGAGAATGATTTTGAAGCATCCATGC
TTAATGATACAGCAGCATATTATTCACGCAAAGCTTCCAATTGGATTCTAGAAGATTCTTGTCCAG
ATTATATGCTCAAAGCTGAGGAGTGCTTAAAAAGAGAAAAGGACAGAGTTTCTCATTATCTTCATT
CCAGCAGTGAACCAAAGCTTCTTGAGAAAGTTCAAACAGAGTTATTATCTGTTTATGCAACTCAAT
TGCTTGAAAAGGAGCACTCCGGTTGTCATGCATTACTTAGGGATGACAAGGTTGATGATTTATCAA
GAATGTACAGACTCTTTTCAAAGATACAAAAAGGGCTGGATCCTGTTTCTAGTATGTTTAAAGCAGC
ATGTCACTGCTGAAGGCACAACATTGGTTAAACAGGCAGAAGATGCAGCAAGTACTAAGAAGGCTG
AAAAGAGAGACGTGGTTGGCTTACAAGAACAGGTTTTTGTTAGAAAAGTTATCGAGCTTCATGACA
AGTACCTTGCAATATGTAAATGACTGTTTTATGAATCATACCCTGTTTCACAAGGCTCTTAAAGAGG
CATTTGAAATATTCTGCAACAAGGGCGTTGCTGGAAGTTCAAGTGCAGAATTACTTGCTACATTTT
GTGATAATATTCTTAAAAAAGGTGGAAGTGAAAAATTGAGTGATGAAGCCATTGAGGACACACTTG
AGAAGGTGGTAAAGTTGCTTGCTTACATCAGCGATAAAGATCTATTTGCAGAGTTTTTATAGGAAAA
AACTGGCTAGACGGCTTTTATTTGACAAAAGTGCAAATGATGAGCACGAAAGAAGTATTTTGACAA
AATTGAAACAACAATGTGGCGGTCAATTTACATCAAAAATGGAAGGAATGGTTACAGATTTGACAT
TGGCAAAAGAAAATCAATCACATTTTGAGGAGTATTTGAATAATAATCCCAATGTTAGCCCTGGCA
TTGACTTGACCGTGACTGTGTTGACCACTGGTTTTTGGCCTAGTTACAAATCTTTTGACCTAAATC
TCCCTGCAGAAATGGTCAAATGCGTTGAAGTTTTTCAGAGAATTTTATCAAACAAAAACAAAACACA
GAAAACCTCACATGGATATATTTCATTGGGCACCTGCAATATAAACGGAAAATTCTGAACCAAAAACCA
TGGAGCTAATCGTTACAACCTACCAGGCATCTGCTTTATTACTGTTCAACTCATCAGATCGATTGA
GTTATCAAGAAATCATGACTCAATTAACTTATCAGATGATGATGTTGTTAGACTACTCCATTCAT
TATCATGTGCAAAATATAAAATTTTATTAAAAGAACCAAATACAAAACAATCTCTCCAACCTGATT
TCTTTGAATTCAACTCAAAGTTTACAGATAAAATGAGAAGGATCAAGATTCCTCTACCTCCTGTTG
ATGAAAAGAAAAAAGTAATTGAAGATGTTGACAAAGACCGACGTTATGCAATTGATGCTTCAATTG
TACGGATAATGAAAAGCAGAAAAGTTCTTGGATACCAACAATTGGTCATGGAATGTGTTGAACAAT
TAGGCCGTATGTTTAAAGCCTGATGTAAAAGCAATCAAGAAACGTATTGAAGATCTCATAACTCGTG
ATTATCTTGAAAGAGACAAAGAAAATCCAAATTTGTTTCGGTACTTGGCATGA

Fig. 46

ATGAATGAAAGAAAAACAATAGACTTAGAACAAGGATGGGACTTCATGCAAAAAGGCATAACAAAG
TTGAAGAACATTCTAGAAGGTCTTCCCGAGCCACAATTCAGCTCAGAGGATTACATGATGCTCTAC
ACAACCAT [G] TACAATATGTGCACACAAAAACCGCCACATGATTACTCTCAACAATTATATGACA
AATACCGCGAGTCTTTTGAAGAGTACATAACTTCAACGGTGTTACCTTCTTTAAGAGAGAAGCATG
ATGAGTTTATGCTTAGAGAGCTTGTTAGAAGGTGGTCAAATCATAAAGTGATGGTTAGGTGGCTTT
CTAGATTCTTCCATTATCTTGATCGATACTTTATTGCAAGAAGATCTCTTCCACCATTAAATGAAG
TTGGACTTGCGTGTTTTTCGTGATCTGGTATACCAAGAGGTGAATGGAAAAGTGAGAGATGCTGTAA
TATCTTTGATTGATCAAGAGCGTGAAGGCGAGCAAATTGACCGAGCATTACTGAAGAATGTTCTAG
ATATATTTGTTGAAATAGGAATGGGACAAATGGAATATTATGAGAATGATTTTGAAGCATCTATGC
TTAATGATACAGCAGCATATTATTCACGCAAAGCTTCCAACCTGGATTCTAGAAGATTCTTGTCCAG
ATTATATGCTCAAAGCTGAGGAGTGCTTAAAAAGAGAAAAGGACAGAGTTTCTCATTATCTTCATT
CAAGTAGTGAACCAAAGCTTCTTGAGAAAGTTCAAACAGAGTTATTATCTGTTTTATGCAACTCAAT
TGCTCGAAAAGGAACACTCAGGTTGTCATGCATTACTTAGAGATGACAAGGTTGATGATTTATCAA
GAATGTACAGACTCTTTTCAAAGATACAAAAAGGACTGGATCCTGTTTTCCAGTATGTTTAAGCAGC
ATGTCACTGCTGAAGGCACAACATTAGTAAAACAAGCAGAAGATGCAGCAAGTACTAAGAAGGCTG
AAAAGAGAGACGTGGTTGGCTTACAGGAACAGGTTTTTGTTAGAAAAGTAATCGAGCTTCATGACA
AGTACCTCGCATATGTAAACGACTGTTTTATGAATCACACATTGTTCCACAAGGCTCTTAAAGAGG
CATTTGAAATATTCTGCAACAAGGGCGTTGCTGGAAGTTCAAGTGCAGAATTACTTGCCACATTTT
GTGATAATATTCTTAAAAAAGGTGGAAGTGAAAAATTGAGTGATGAAGCCATTGAAGACACACTTG
AGAAGGTAGTAAAGTTGCTTGCTTACATCAGCGATAAAGATCTATTTGCAGAGTTTTTATAGGAAAA
AACTGGCTAGAAGGCTTTTATTTGACAAAAGTGCAAATGATGAGCATGAAAGAAGTATTTTAACAA
AGTTGAAGCAACAATGTGGTGGTCAGTTTACATCAAAGATGGAAGGAATGGTTACAGATTTAACAC
TGGCAAAAGAAAATCAATCACATTTTGAAGGAGTATTTGAATAATAATCCCAATGTTAGCCCTGGCA
TTGACTTGACCGTGACTGTGTTGACCACGGGATTTTGGCCTAGTTACAAATCTTTTGACCTAAATC
TTCCTGCAGAAATGGTCAAATGCGTTGAAGTTTTTCAGAGAATTTTATCAAACAAAAACAAAACACA
GAAAACCTCACATGGATTTTATTCATTGGGCACCTGCAATATTAACGGAAAATTCTGAACCAAAAACCA
TGGAGCTAATCGTTACAACCTACCAGGCATCTGCTTTATTGTTATTCAACTCATCAGATCGATTAA
GTTATCAAGAAATCATGACTCAATTAAATTTATCAGATGATGATGTTGTTAGACTACTACATTCAT
TATCATGTGCAAAATATAAAATTTTATTAAAGAACCAAATACCAAACAATATCTCCAACCGATT
TCTTTGAATTCAACTCAAAGTTTACAGATAAAATGAGAAGGATCAAGATTCCTCTACCTCCTGTTG
ATGAAAAGAAAAAAGTAATTGAAGATGTTGACAAAGATAGAAGGTATGCAATTGATGCTTCAATTG
TACGAATAATGAAAAGCAGAAAAGTTCTTGGATACCAACAATTGGTTATGGAGTGTGTTGAACAAT
TAGGCCGTATGTTTAAGCCTGATGTAAAAGCAATCAAGAAGCGTATTGAAGATTTGATAACGCGTG
ATTATCTTGAAAGAGACAAAGAAAATCCAAATTTGTTTCGGTACTTGGCATGA

Fig. 47

ATGTCGTTGCACGAAAGGAAAACCATTTGATTTGGAGCAGGGATGGGCTTTTATGCAGAAAGGGATC
ACCAAACCTGAAGAATATTCTTGATGAGTTGAATGAACCTCAGTTCAGCTCAGAGGATTACATGATG
CTCTATACGACTAT **[G]** TATAATATGTGTACTCAGAAGCCGCCACATGATTATTCTCAGGAGTTGT
ATGATAAGTACCGAGAGTCCCTTTGAAGAGTATATCACTACCACTGTGCTTCCTTCATTGAGAGAAA
AGCATGATGAATACATGTTAAGGGAGCTCGTGAGAAGGTGGTCAAATCATAAAATAATGGTTAGAT
GGCTTTCACGCTTTTTTCCATTATCTTGATCGCTACTTTATAGCACGAAGATCATTGCCTGCTCTTA
ATGAAGTCGGTCTCACTTGTTTCCGTGATCTGGTGTACAACGAAGTCCATGGGAAAGTTAAAGATG
CCGTGATCTCATTGATTGACCAAGAGAGGGGAAGGGGAGCAAATTGACAGAGCTTTATTAAAGAATG
TTTTGGGTATTTTTGTAGAGATTGGTTTGGGAAGCATGGAATGTTATGAGAATGATTTTGAAACAT
CAATGCTTAATGCTACAGCAGCCTATTATTACGAAAAGCTTCAAATTGGATTCTAGAAGATTCAT
GTCCAGATTATATGCTAAAAGCCGAGGAGTGCTTAAAACATGAGAAAGATAGAGTTGCTCATTATT
TGCATTCAAGCAGTGAACAGAAGCTGTTAGAGAAAGTGCAACATGAGTTACTTTTCGTATATGCAA
GTCAACTTCTCGAGAAAGAACATTCCGGATGTCATGCATTGCTTCGCGATGACAAGGTGGGAGATC
TTTCACGCATGTATCGGCTGTTCTGTAGAATTACACGTGGTTTGGACCCTGTGTCTCAAATATTTA
AGCAGCATGTGACTGCAGAAGGTACTGCTTTGGTCAAACATGCCGAAGATGCTGCAAGTAACAAGA
AGGCCGAGAAAAAAGACATTGTTGGTTTGAAGAGCAGGTCTTCGTTAGGAAAGTAATTGAGCTGC
ATGATAAATACTTGGCCTATGTGACTGACTGCTTTCAAATCACTCTCTATTTTACAAGGCACTTA
AAGAGGCATTCGAGGTATTCTGCAATAAAGGTGTTGCAGGTAGCTCAAGCGCTGAACTTCTGGCTG
CTTTTTGTGACAATATATTGAAGAAGGGTGGAAGCGAGAACTAAGCGATGAGGCCATAGAGGATA
CTCTTGAGAAGGTTGTAAAACCTATTGGCATATATTAGCGATAAAGATCTGTTTGCTGAATTTTACA
GGAAGAAGCTTGCACGAAGATTACTCTTTGACAAAAGTGCTAATGATGACCATGAGAGGAGCATCC
TTACAAAGCTGAAACAGCAATGTGGAGGGCAGTTCACCTCTAAAATGGAAGGCATGGTAACCGATC
TGACACTTGCACGAGAAAATCAATCAAGTTTTGACGATTACCTTAGCAGCAATCCTAAAGCAAATT
CTGGAATTGACTTGACTGTTACAGTCTTAACAACCTGGCTTCTGGCCCAGTTACAAGTCTTTTGATC
TCAATCTTCCTGATGAGATGGTAAAATGCGTTGAAATTTTTTAAAGAGTTTTTACGAGACAAAAACCA
AACACAGAAAACCTTACATGGATTTATTCGTTGGGCACTTGCAACATCAATGGCAAGTTCGAAACCA
AGACAATAGAGTTGGTTGTTACAACCTATCAGGCTGCAGTGTTGCTTCTATTCAACTCTGCAGATA
AATTAAGTTATTCTGAGATTGTGCAGCAGCTAACTTATCTGATGATGATGTAATCAGATTACTTC
ACTCTCTTTCATGCGCTAAATACAAAATTCTCAATAAAGAACCCGCTACCAAGACTATTACCCCGA
ATGATCATTTTGAGTTCAATTCTAAATTCAGTATAGAATGAGAAGGATCAAGATTCCCCTGCCTC
CTGTGGATGAGAAGAAAAAAGTAATTGAAGATGTTGACAAAGACAGAAGATATGCAATTGACGCAT
CCATAGTTCGAATAATGAAAAGTAGAAAAGTTCTTGGTCATCAGCAGCTTGTTTTGGAATGTGTTG
AGCAATTAGGCCGCATGTTTAAGCCTGACTTTAAGGCCATCAAGAAAAGGATTGAAGATCTGATCG
CTAGAGATTATTTGGAGAGGGACAAGGACAATCCAAACCTCTTTAAATATTTGGCCTAA

Fig. 48

ATGAACGAAAGAAAAACAATAGACTTAGAGCAAGGATGGGACTTCATGCAGAAAGGAATAACAAAG
TTGAAGAATATTCTAGAAGGTCTTCCCGAGCCACAATTCAGCTCGGAGGATTACATGATGCTCTAC
ACAACCAT **[G]** TACAACATGTGTACACAGAAACCACCACATGATTACTCCCAACAGTTGTATGACA
AATATCGTGAGTCTTTTGAAGAGTATATTACTTCAACTGTGTTACCTTCTTTAAGAGAGAAGCATG
ATGAGTTCATGCTGAGAGAGCTTGTTAGAAGGTGGTCAAATCATAAAGTCATGGTGCGGTGGCTTT
CTAGATTCTTCCATTATCTTGACCGATATTTTCATTGCCCGAAGATCTCTTCCGCCACTAAATGAAG
TTGGACTTGCCTGTTTTTCGTGATCTGGTATACCAAGAGGTGAATGGTAAAGTGAGAGATGCTGTAA
TATCTTTGATTGATCAAGAGCGTGAAGGGGAGCAGATTGATCGAGCTTTACTGAAGAATGTTCTAG
ATATATTTGTTGAGATAGGAATGGGACAAATGGAGTATTATGAGAATGATTTTGAAGCATCCATGC
TTAATGATACAGCAGCATATTATTCACGCAAGGCTTCCAACCTGGATTCTAGAAGATTCTTGTCCAG
ATTATATGCTCAAAGCAGAGGAGTGCTTAAAAAGAGAAAAGGACAGAGTGTCTCATTATCTTCATT
CCAGCAGTGAGCCAAAGCTTCTTGAGAAAGTTCAAAATGAGTTATTGTCTGTTTTATGCAACTCAAT
TGCTTGAGAAAGAGCACTCAGGTTGTCATGCATTGCTCAGGGATGACAAGGTTGATGATTTATCAA
GAATGTACAGACTCTTTTCAAAGATACCAAAGGATTGGATCCTGTTTTCTAGTATGTTTAAAGCAGC
ATGTCACTGCTGAAGGCACAACATTGGTTAAACAAGCAGAAGATGCAGCAAGTACCAAGAAGGCTG
AAAAGAGAGATGTGGTTGGGTTCAGGAACAGGTTTTTGTAGAAAAGTTATTGAGCTCCATGACA
AGTACCTGGCATATGTAAATGACTGTTTCATGAACCATACTCTTTTCCACAAGGCTCTTAAAGAGG
CATTTGAAATATTCTGCAACAAGGGTGTTGCTGGAAGTTCAAGTGCAGAGTTACTTGCCACATTTT
GTGATAATATTCTTAAAAAAGGTGGAAGTGAGAACTGAGCGATGAAGCCATTGAGGACACCCTTG
AGAAGGTAGTAAAGTTGCTTGCCCTACATCAGTGATAAAGATCTATTTGCTGAATTTTACAGGAAAA
AACTTGCTAGGAGGCTTTTGTGTTGACAAGAGTGCAAACGATGAGCATGAGAGAAGTATTCTCACAA
AGCTGAAGCAACAGTGTGGTGGTCAGTTCACATCAAAGATGGAAGGGATGGTTACAGATTTGACAT
TGGCAAAGGAAAACCAATCCCATTTTGAAGAGTATTTGAACAATAATCCCAATGTCAGCCCTGGAA
TTGACTTGACTGTCACTGTGTTGACTACCGGCTTCTGGCCCAGCTACAAATCTTTTGACCTAAATC
TCCCTGCCGAAATGGTTAAATGCGTTGAAGTTTTTCAGAGAATTTTATCAAACAAAAACAAAGCACA
GGAAGCTTACATGGATATATTCATTGGGTACCTGCAATATAAACGGGAAATTTGAACCCAAAACAA
TGGAGCTCATAGTCACAACCTACCAGGCATCTGCTTTATTACTGTTCAACTTATCGGATCGATTGA
GTTATCAAGAAATCATGACTCAGTTGAACTTGTCAGATGATGATGTTGTTAGGCTGCTCCATTCTT
TGTCATGTGCAAAATACAAAATTCTTTTAAAGGAGCCTAATACCAAACAATCTCTCCAACCGATT
ACTTCGAATTCAACTCCAAGTTTACAGATAAAATGAGGAGGATCAAGATTCCTCTACCTCCTGTGG
ATGAGAAGAAAAAGGTGATTGAGGATGTTGACAAAGACAGACGTTATGCCATTGATGCTTCCATTG
TAAGGATAATGAAGAGCAGAAAGGTGCTTGGATAACCAGCAGTTGGTTATGGAGTGTGTTGAACAGT
TGGGACGCATGTTTAAAGCCTGATGTAAAAGCAATCAAGAAGCGGATTGAAGATCTGATAACTCGTG
ATTATCTTGAAAGAGACAAAGAGAACCCCAACTTGTTCCGATACTTGGCATGA

Fig. 49

ATGGAGCGGAAGACGATTGATCTGGAACAAGGATGGGACTATATGCAGACTGGGATCACTAAGCTG
AAACGGATTCTTGAAGGATTGCCTGAGCCGCAATTCGACTCTGAGCAGTACATGATGCTTTATACG
ACTAT **[G]** TACAACATGTGCACCCAGAAACCTCCTCATGATTACTCTCAGCAGCTTTATGACAAGT
ATCGCGAAGCTTTTGAGGAGTACATTGACTCTACTGTTTTGCCTGCTTTGAAGGAGAAGCATGATG
AATACATGCTACGGGAGCTGGTTAAGAGATGGTCTAACCATAAAGTTATGGTTAGATGGCTATCCC
GATTCTTCTACTATCTTGACCGTTACTTCATTGCTCGGAGATCGCTGCCACCGCTTAATGAAGTTG
GGCTCACATGCTTCCGTGACCGGGTGTATAAGGAGTTGCATTCCAAGGTCAAAGATGCTGTAATAG
CACTTGTTGATAAAGAACGGGAAGGCGAGCAGATTGACAGGGCTCTTCTGAAAAACGTATTAGATA
TCTATGTAGAGATTGGAATGGGACAGATGGAAAGATACGAAGTGGATTTTGAAAGCTTCATGCTTT
TGGATTCAGCATCTTACTATTCTCGCAAAGCATCAAACCTGGATCCAGGAAGATTCTTGCCCTGATT
ACATGCTGAAGTCTGAAGAATGCCTTAAGAAGGAGAGGGAGAGGGTTGCTCACTACCTTCATTCAA
GCAGCGAGCCAAAGCTGGTTGAGAAAGTACAACATGAGCTGTTGGTTGTCTATGCAAATCAGCTTC
TTGAAAAGGAGCACTCAGGGTGCCGTGCATTGCTGAGAGACGACAAGGTTGACGATCTCTCCAGGA
TGTACAGGCTCTATCATAAAATTGCTAAAGGTTTAGAACCTGTTGCAAACATATTTAAGCAGCATG
TCACAGCCGAGGGTAACGCACTTGTCCAACAGGCCGAAGACACAGCCACTAATCAGGCTGCAAATA
CTGCTAGCGTGCAGGAACAGGTTCTCATCAGAAAAGTGATTGAGCTACATGATAAGTACATGGTCT
ATGTCGTGGAGTGCTTCCAGAACCACACCCTCTTCCACAAGGCTCTGAAAGAGGCATTTGAGATAT
TCTGTAACAAAACAGTCGCTGGAAGTTCAAGTGCAGAACTGCTTGCAACATTCTGCGACAACATCC
TCAAGAAGGGGGGTAGTGAGAAGCTGAGTGACGAAGCTATTGAAGATACGCTTGAGAAGGTTGTCA
AATTGCTTGCTTATATAAGCGACAAGGATCTTTTCGCCGAGTTCTACAGGAAGAAGCTGGCACGTA
GGCTCTTATTTGATCGCAGTGCGAATGATGATCATGAGAGAAGCATCCTTACAAAGCTCAAGCAAC
AATGTGGTGGGCAGTTCACCTTAAGATGGAGGGCATGGTAACGGACTTGACATTGGCAAGAGAGA
ACCAAACCAGTTTCGAGGAGTATCTAGGCAATAACCCCGCTGCAAACCCAGGGATTGATTTGACCG
TCACTGTTCTTACCACTGGTTTCTGGCCAAGTTACAAATCATTGACATAAATCTACCAAGTGAAA
TGGTCAAGTGTGTTGAAGTTTTCAAAGGGTTTTATGAGACGAAAACATAAGGAACTTACAT
GGATCTACTCACTAGGAACCTTGTCACCTCAACGGAAAGTTTGATCACAAGCCCATTGAGTTAGTTG
TGTCTACTTACCAGGCTGCTGTGCTTCTGCTGTTCAACACAACAGACAAATTGAGCTACAACGATA
TCCTAACTCAACTGAACCTAAGCCACGAAGATTTAGTGAGGTTGCTTCATTCCCTGTCATGTGCTA
GGTACAAGATCCTTCTCAAGGAGCCAAGCACGAAGACTGTTACACAGACTGATTCATTTGAATTCA
ATGCCAAATTCACGGACAGAATGCGCAGAATCAAGATCCCTCTCCCTCCTGTTGATGAAAGGAAGA
AGGTTGTGGAAGATGTGGACAAAGACAGACGCTATGCGATTGATGCTGCCATTGTTAGGATCATGA
AGAGCAGGAAAGTGTTGGGACATCAACAACCTCGTCTCTGAGTGCGTTGAGCAACTTAGCCGAATGT
TCAAGCCTGATATCAAAGCGATCAAGAAGCGTATGGAGGATCTAATTACGAGGGATTATTTGGAGA
GGGACAAGGAGAACCCTAACATGTTTAGGTACTTGGCTTAG

Fig. 50

ATGAACGATCGTAAAGTTATCGAACTAGAGCAAGGATGGGAGTTCATGGGGAAGGGGATTACGAAG
TTGAAAAGGATTTTGGGAAGGATTACCAGAGCCGCCTTTTAATTCGGAAGACTACATGATGCTGTAC
ACGACAAT **[G]** TACAACATGTGTACACAGAAACCCCTCATGATTACTCTCAACAACTCTATGACA
ATTACAAAGAGGCATTTGTGGATTACATACATTCAACGGTTTTACCTTCTTTGGGGGACAAACATG
ATGAGTTTATGCTGAGAGAGCTTGTGAAGAGATGGTCAAATCATAAAGTAATGGTGAGGTGGTTGT
CTCGCTTCTTCCATTATCTGGATCGGTACTTCATCGCTCGGAGATCGCTTCCTTCTTTGAATGATG
TTGGATTGACGTGCTTCCGTGATCTGGTTTATCAAGAAATATCTGGCAAAGCCAAGGATGCTGTTA
TTGCTCTGATTGATGAAGAAAGAGAGGGTGGGCAAATTGACAGAGCCTTATTGAAGAATGTACTTG
ATATATACGTTGAAATTGGAATGACACAAATGGATTACTACGAAAAGGACTTTGAAGCTCATATGC
TGGATGATACTGCTGCTTATTACTCACGCAAGGCCTCAAGCTGGATTCTGGAGGACTCATGTCCGG
AATACATGTTGAAGTCGGAGGAGTGTTTGAAGAAAGAGAAAGATAGAGTGGCTCATTATCTACATT
CCAGCAGTGAGCCAAAGCTTCTGGAGAAAGTACAAAATGAGTTGCTACTGGTTTACGAAAATCAGT
TGCTTGAGAAGGAGAATTCTGGATGTCGTGCATTGTTGAAAGATGACAAGGTGGAAGATCTTTCCA
GGATGTACAGGCTTTATAGCAAGGTTACCAAAGGGTTGGAACCCATTGGCAGTATCTTCAAACAGC
ATATAACCGATGAAGGAACAGCCCTGGTGCAGCAGGCCGAAGACGCTGCAATTAGCAAGGCTGAAA
ATGCTGGCGGTGGTTCACATGAGCAGGTCTTCGTCAGGAAAGTGATTGAGTTGCATGACAAATTTA
TGACCTATGTTACAGATTGCTTCAACAGCCATACCATCTTTCACAAGGCTCTCAAGGAAGCTTTTG
AGGTATTCTTAAACAAGGGTGTTGCTGGTAGTTCAAGTGCTGAACTTCTAGCTTCATTTTGTGATA
ATATTCTCAAGAAAGGTGGTAGTGAAAAATTAAGTGATGAGGCTATTGAGGATTCAGTGGAGAAGG
TGGTGAAGCTTCTCGCATATGTCAGTGATAAAGACCTGTTTGCTGAATTTTACAGAAAGAAGCTCT
CTCGCCGGCTACTCTTTGACAAAAGTGCTAATGATGATCATGAGAGGAGTATTTTAAACAAAATTGA
AGCAGCAGTGTGGGGGACAGTTCACATCAAAGATGGAGGGGATGGTGACAGACTTGACATTGGCGA
GGGAGAATCAAACATAATTTTGAGGAATATCTTGGACAAAATACAGATGCCAGTCCTGGTCTTGATT
TGACTGTGACAGTTTTGACCACTGGGTTCTGGCCAAGTTACAAATCTTCTGATCTTAACCTTCCTG
CTGAGATGGTGAGGTGTGTTGAAGTTTTTAAGCAATTTTATCAAACAAAGACAAAACACAGGAAGC
TCACCTGGGTATATTTCGTTGGGAAGTTGTAACATTAATGGCAAGTTTGGTCCGAAAACAATTGAAT
TGGTTGTTGGAACCTATCAGGCTGCTGCGCTGATGCTCTTTAACACATCAGATCGACTGAGTTATT
CAGAAATAACGACCCAACTAAATCTAGCTGACGAAGACTTGGTTAGAGTGCTTCAATCTCTATCTT
GCGCAAAGTATAAGATTCTTCTAAAAGAGCCAAGCACAAGAAACGTGATCTCAACTGATTGTTTTT
CATTCAACTCTAATTTTACTGACAGAATGAGGAGGATTAGGATTCCTCTTCCTCCAATGGATGAGA
GGAAAAAGGTTGTTGAAGATGTTGACAAAGATAGAAGATATGCTATTGATGCCTCAATTGTACGCA
TAATGAAAAGTAGGAAGGCTTTGGGATATCAACAATTAATCACGGAGTGTGTGGAGCAGCTAAGCC
GCATGTTCAAGCCTGATTTCAAAGCAATTAAGAAGAGGATCGAGGACTTGATAACCAGAGATTATA
TTGAAAGAGACAAGGAAAACCCTCAGCTATTCCGGTACTTGGCTTGA

Fig. 51

ATGAATGATCGTAAAGTTATTGAACTAGAGCAAGGATGGGAGTTCATGGGGAAGGGGATTACAAAG
TTGAAGAGGATTCTGGAAGGATTGCCAGAGCCACCATTTAATTCTGAAGACTACATGATGTTGTAC
ACGACGAT [G] TACAATATGTGTACTCAGAAACCCCCACATGATTACTCTCAACAGCTCTATGACA
ATTACAAACAGGCTTTTTGTGGATTACATCAACTCGACGGTTTTACCTTCTTTGCGGGAGAAGCATG
ATGAGTTTATGTTAAGAGAACTTGTGAAAAGATGGGCAAATCATAAAGTAATGGTCAGGTGGTTGT
CTCGTTTCTTCCATTATCTGGACCGGTATTTTCATTGCTCGGAGGTCGCTTCCTTCTTTGAATGAAG
TTGGACTGACTTGTTTCCGTGATCTGGTTTATCAAGAAATATCTGGCAAAGCCAAGGATGCTGTTA
TAGCCCTGATTGATATAGAAAGAGAAGGTGGGCAGATTGACAGATCATTATTGAAAAATGTACTTG
ATATATATGTTGAAATTGGAATGGGACAAATGGATCACTATGAAAAAGACTTTGAAGCTCATATGC
TGGATGATACTGCTGCTTACTACTCGCGCAAAGCGTCTAGCTGGATTCTTGAGGACTCTTGTCCGG
AATACATGTTAAAGTCTGAGGAGTGTTTGAAGAAGGAGAAAGAGAGAGTGGCTAATTATTTACATT
CCAGCAGTGAGCCAAAGCTTCTGGAGAAAGTGCAAAACGAGTTGCTATTGGTTTATGAAAGCCAAT
TGCTTGAGAAGGAGAATTCGGGATGTCGTGCATTACTGAAAGATGACAAGGTGGATGATCTTTCCA
GGATGTACAGGCTTTACAGTAAGGTTACCAAAGGATTGGAACCCATTGGCAGTATCTTCAAACAGC
ATATAACTGATGAAGGAACAGCCTTAGTGACAGCAGGCCGAAGATGCTGCTATCAGCAAGGCTGAAA
ATACTGGTGGTTCACATGAGCAGGTCTTCGTCAGGAAAGTAATAGAGTTGCATGACAAATTCATGA
CTTATGTCACCGATTGCTTCAACAGCCATACCATATTTTACAAGGCTCTTAAGGAGGCTTTTGAGG
TATTTTTGAACAAGGGTGTTGCTGGTAGCTCAAGTGCTGAGTTGCTAGCTACATTCTGTGATAACA
TTCTCAAGAAAGGTGGGAGCGAAAACTAAGCGATGAGGCTATTGAGGATTCATTGAGAAGGTGG
TGAAGCTTCTGGCCTATGTCAGTGATAAAGACCTGTTTGCTGAATTTTACAGAAAGAAGCTCTCTC
GCCGGCTACTCTTTGACAAGAGTGCTAATGATGATCATGAAAGAAGTATTTTAACCAAATTGAAGC
AGCAGTGTGGCGGACAATTCACATCAAAGATGGAGGGGATGGTGACAGACTTGACCTTGGCGAGGG
AGAATCAAACATAATTTTGAGGAATATCTTAGTCAGAATCCAGATGCCAGTCCTGGTCTTGATTTGA
CTGTGACTGTTCTGACAACCTGGGTTCTGGCCAAGTTACAAATCTTCCGATCTTAACCTTCCCGCTG
AGATGGTGAGGTGTGTTGAAGTTTTTAAGCAGTTCTATTCAACTAAAACAAAGCACAGGAAGCTGA
CCTGGGTTTACTCATTGGGAAGCTGTAATATTAATGGCAAGTTTGGTCCAAAACTATTGAATTGG
TTGTCGGAACCTTATCAGGCTGCTGCTTTGATGCTCTTTAACACATCAGACCGACTGAGTTATTCAG
AGATAGCAACTCAACTAAATTTAGCTGATGAAGATCTGGTTAGAGTGCTTCAATCTTTATCCTGCG
CAAAGTATAAGATTCTTTTAAAGGAGCCAAACACGAAAACCGTGTCCCCGACTGATTGTTTTTCAT
TTAACTCTAGTTTCACTGACAGGATGAGGAGGATAAGAATTCCTCTTCCTCCGATGGATGAGAGGA
AAAAGGTTGTTGAGGATGTTGACAAAGATAGAAGATATGCTATTGATGCCTCAATTGTACGCATAA
TGAAAAGTAGGAAGGTTTTGGGGTACCAGCAATTAATCACAGAGTGTGTGGAGCAGCTAAGCCGCA
TGTTCAAGCCTGATTTCAAGGCAATTAAGAAGAGGATCGAGGACTTAATAACCCGAGATTATATTG
AAAGAGACAAGGAGAACCCGCAGCTATTCCGATACTTGGCTTGA

Fig. 52

MTMGERKTIDLEQGWEFMQKGITKLKNILEGLPEPQFSSSEDYMMLYTT **[M]** YNMCTQKPPHDYSQQ
LYDKYRESFEEYITSMVLPSLREKHDEFMLRELVKRWTNHKVMVRWLSRFFHYLDRIYFIARRSLPP
LNEVGLTCFRELVIKELNSKVRDAVISLIDQEREQEQIDRALLKNVLDIFVEIGMGQMDYYENDFE
AAMLKDTAAYYSRKASNWILEDSCPDYMLKAEELCKREKDRVSHYLHSSSEPKLLEKVQHELLSVY
ATQLEKEHSGCHALLRDDKVEDLSRMFRLFSKIPKGLDPVSNIFKQHVTAEGTALVKQAEDAASN
KKAEEKDIVGLQEQVFVRKVIELHDKYLAYVNDCFQNHTLFHKALKEAFEVFCNKGVAGSSSAELL
ATFCDNILKKGSEKLSDEAIEETLEKVVKLLAYICDKDLFAEFYRKKLARLLFDKSANDDHRS
ILTKLKQQCGGQFTSKMEGMVTDLTARENQTSFEEYLSNNPQASPGIDLTVTVLTTGFWPSYKSF
DLNLPAEMVKCVEVFREFYQTKTKHRKLTWIYSLGTCNISGKFEPKTMELIVTTYQASALLFNSS
DRLSYSEIMTQLNLSDDDVRLLHSLSCAKYKIILNKEPNTKTISPNDHFEFNAKFSDKMRRIKIPL
PPVDEKKKVIEDVDKDRRYAIDASIVRIMKSRKVLGHQQLVMECQEQLGRMFKPDFKAIKKRIEDL
ITRDYLERDKDNPHLFRYLA

Fig. 53

MTMGERKTIDLEQGWEFMQKGITKLKNILEGLPEPQFSSSEDYMMLYTT **[M]** YNMCTQKPPHDYSQQ
LYDKYRESFEEYITSMVLPSLREKHDEFMLRELVKRWTNHKVMVRWLSRFFHYLDRIYFIARRSLPP
LNEVGLTCFRELVIKELNSKVRDAVISLIDQEREQEQIDRALLKNVLDIFVEIGMGQMDYYENDFE
AAMLKDTAAYYSRKASNWILEDSCPDYMLKAEELCKREKDRVSHYLHSSSEPKLLEKVQHELLSVY
ATQLEKEHSGCHALLRDDKVEDLSRMFRLFSKIPKGLDPVSNIFKQHVTAEGTALVKQAEDAASN
KKAEEKDIVGLQEQVFVRKVIELHDKYLAYVNDCFQNHTLFHKALKEAFEVFCNKGVAGSSSAELL
ATFCDNILKKGSEKLSDEAIEETLEKVVKLLAYICDKDLFAEFYRKKLARLLFDKSANDDHRS
ILTKLKQQCGGQFTSKMEGMVTDLTARENQTSFEEYLSNNPQASPGIDLTVTVLTTGFWPSYKSF
DLNLPAEMVKCVEVFREFYQTKTKHRKLTWIYSLGTCNISGKFEPKTMELIVTTYQASALLFNSS
DRLSYSEIMTQLNLSDDDVRLLHSLSCAKYKIILNKEPNTKTISPNDHFEFNAKFSDKMRRIKIPL
PPVDEKKKVIEDVDKDRRYAIDASIVRIMKSRKVLGHQQLVMECQEQLGRMFKPDFKAIKKRIEDL
ITRDYLERDKDNPHLFRYLA

Fig. 54

MTMGERKTIDLEQGWEFMQKGITKLKNILEGLPEPQFSSSEDYMMLYTT **[M]** YNMCTQKPPHDYSQQ
LYDKYRESFEEYISSMVLP SLREKHDEFMLRELVKRWTNHKVMVRWLSRFFHYLDRIYFIARRSLPP
LNEVGLTCFRELVIKELNSKVRDAVISLIDQEREQEQIDRALLKNVLDIFVEIGMGQMDYYENDFE
AAMLKDTAAYYSRKASNWILEDSCPDYMLKAEELRREKDRVSHYLHSSSEPKLLEKVQHELLSVY
ATQLEKEHSGCHALLRDDKVEDLSRMFRLFSKIPKGLDPVSNIFKQHVTAEGTALVKQAEDAASN
KKAEEKDIVGLQEQVFVRKVIELHDKYLAYVNDCFQNHTLFHKALKEAFEVFCNKG VAGSSSAELL
ATFCDNILKKGSEKLSDEAIEETLEKVVKLLAYICDKDLFAEFYRKKLARLLFDKSANDDHRS
ILTKLKQQCGGQFTSKMEGMVTDLT LARENQTSFEEYLSNNPQASPGIDLT VTVLTTGFWPSYKSF
DLNLPAEMVKCVEVFREFYQTKTKHRKLTWIYSLGTCNISGKFEPKTMELIVTTYQASALLFNSS
DKLSYSEIMTQLNLSDDD VVRL LHSLSCAKYKILNKEPNTKTISPNDHFEFNAKFS DKMRRIKIPL
PPVDEKKKVIEDVDKDRRYAIDASIVRIMKSRKVLGHQQLVMECQEQLGRMFKPDFKAIKKRIEDL
ITRDYLERDKDNPHLFRYLA

Fig. 55

MTMGERKTIDLEQGWEFMQKGITKLKNILEGLPEPQFSSSEDYMMLYTT **[M]** YNMCTQKPPHDYSQQ
LYDKYRESFEEYITSMVLP SLREKHDEFMLRELVKRWTNHKVMVRWLSRFFHYLDRIYFIARRSLPP
LNEVGLTCFRELVIKELNSKVRDAVISLIDQEREQEQIDRALLKNVLDIFVEIGMGQMDYYENDFE
AAMLKDTAAYYSRKASNWILEDSCPDYMLKAEELRREKDRVSHYLHSSSEPKLLEKVQHELLSVY
ATQLEKEHSGCHALLRDDKVEDLSRMFRLFSKIPKGLDPVSNIFKQHVTAEGTALVKQAEDAASN
KKAEEKDIVGLQEQVFVRKVIELHDKYLAYVNDCFQNHTLFHKALKEAFEVFCNKG VAGSSSAELL
ATFCDNILKKGSEKLSDEAIEETLEKVVKLLAYICDKDLFAEFYRKKLARLLFDKSANDDHRS
ILTKLKQQCGGQFTSKMEGMVTDLT LARENQTSFEEYLSNNPQASPGIDLT VTVLTTGFWPSYKSF
DLNLPAEMVKCVEVFREFYQTKTKHRKLTWIYSLGTCNISGKFEPKTMELIVTTYQASALLFNSS
DRLSYSEIMTQLNLSDDD VVRL LHSLSCAKYKILNKEPNTKTISPNDHFEFNAKFS DKMRRIKIPL
PPVDEKKKVIEDVDKDRRYAIDASIVRIMKSRKVLGHQQLVMECQEQLGRMFKPDFKAIKKRIEDL
ITRDYLERDKDNPHLFRYLA

Fig. 56

MNQRSTIDLEHGWDFMQKGITKLKNILEGLPEPQFSSSEDYMMLYTT **[M]** YNMCTQKPPHDYSQQLY
DKYREAFEEYITTTVLPSLREKHDEFMLRELVKRWSNHKVMVRWLSRFFHYLDRIYFIARRSLPGLN
EVGLTCFRDLVYQELNGKVRDAVISLIDQEREQEQIDRALLKNVLDIFVEIGMGSMDDYYENDFEAA
MLKDTAAYYSRKASNWILEDSCPDYMLKAECECLKREKDRVSHYLHSSSETKLLEKVQHELLSVYAN
QLLEKEHSGCHALLRDDKVDDLSRMYRLFSKIPRGLEPVANIFKQHVTAEGTALVKQAEDAASNKK
AEKRDVVGLQEQVFVRKVIELHDKYLAYVNNCFQNHTLFHKALKEAFELFCNKGVAGSSNAELLAT
FCDNILKKGGSEKLSDEAIEETLEKVVKLLAYISDKDLFAEFYRKKLARRLLFDKSANDEHERSIL
TKLKQQCGGQFTSKMEGMVTDLTARENQASFEEYLSNNPTANPGIDLTVTVLTTGFWPSYKSFDL
NLPAEMVRCVEVFKEFYQTKTKHRKLTWIYSLGTCNINGKFEAKTIELVVTTYQASALLFNASDR
LSYQEIMTQLNLSDDDVRLLHSLSCAKYKILNKEPSTKTISPTDVFEFNSKFTDKMRRIKIPLPP
VDEKKKVIEDVDKDRRYAIDASIVRIMKSRKVLGYQQLVMECVEQLGRMFKPDVKAIAKKRIEDLIT
RDYLERDKDNPNFLFKYLA

Fig. 57

MNQRSTIDLEHGWDFMQRGITKLKNILEGLPEPQFSSSEDYMMLYTT **[M]** YNMCTQKPPHDYSQQLY
DKYREAFEEYITTTVLPSLREKHDEFMLRELVKRWSNHKVMVRWLSRFFHYLDRIYFIARRSLPGLN
EVGLTCFRDQVYQELNGKVRDAVISLIDQEREQEQIDRALLKNVLDIFVEIGMGLMDYYENDFEAA
MLKDTAAYYSRKASNWILEDSCPDYMLKAECECLKREKDRVSHYLHSSSETKLLEKVQHELLSVYAT
QLLEKEHSGCHALLRDDKVEDLSRMYRLFSKISRGLDPVANIFKQHVTAEGTALVKQAEDAASNKK
AEKRDVVGLQEQVFVRKVIELHDKYLAYVNNCFQNHTLFHKALKEAFELFCNKGVAGSSSAELLAT
FCDNILKKGGSEKLSDEAIEETLEKVVKLLAYISDKDLFAEFYRKKLARRLLFDKSANDEHERSIL
TKLKQQCGGQFTSKMEGMVTDLTARENQASFEEYLSNNPIANPGIDLTVTVLTTGFWPSYKSFDL
NLPAEMVRCVEVFKEFYQTKTKHRKLTWIYSLGTCNINGKFEPKTIELVVTTYQASALLFNASDR
LSYQEIMTQLNLSDDDVRLLHSLSCAKYKILNKEPSTKTISPTDVFEFNSKFTDKMRRIKIPLPP
VDEKKKVIEDVDKDRRYAIDASIVRIMKSRKVLGYQQLVMECVEQLGRMFKPDVKAIAKKRIEDLIT
RDYLERDKDNPNFLFKYLA

Fig. 58

MNQRSTINLEHGWDFMQRGITKLKNILEGLPEPQFSSSEDYMMLYTT **[M]** YNMCTQKPPHDYSQQLY
 DKYREAFEEYITTTVLP SLREKHDEFMLRELVKRWSNHKVMVRWLSRFFHYLD RYFIARRSLPGLN
 EVGLTCFRDLVYQELNGKVRDAVISLIDQEREGEQIDRALLKNVLDIFVEIGMGSM DYYENDFEAA
 MLKDTAAYYSRKASNWILEDSCPDYMLKAE ECLKREKDRVSHYLHLSSETKLLEKVQH ELLSVYAT
 QLLEKEHSGCHALLRDDKVEDLSRMYRLF SKIPRGLDPVANIFKQHVTAEGTALVKQAEDAASNKK
 AEKRDVVGLQE QIFVRKVIELHDKY MAYVNNCFQNHTLFHKALKEAFELFCNKG VAGSSSAELLAT
 FCDNILKKGGSEKLSDEAIEETLEKVVKLLAYISDKDLFAEFYRKKLARLLFDKSANDEHERSIL
 TKLKQQCGGQFTSKMEGMVTDLT LARENQASFE EYLSNNPAANPGIDLTVTVLTTGFWPSYKSFDL
 NLPAEMVRCVEVFKEFYQTKTKHRKLTW IYSLGTCNINGKFEPKTIELVVTTYQASALLFNASDR
 LSYQEIMTQLNLSDDDVRLLHSLSCAKYKI LNKEPSTKTISPTDVFEFNFKFTDKMRRIKIPLPP
 VDEKKKVIEDVDKDRRYAIDASIVRIMKSRKVLGYQQLVMECVEQLGRMFKPDVKAIKKRIEDLIT
 RDYLERDKDNP NLFKYLA

Fig. 59

MERKTIDLDQGDYMQTGITKLKRILEGLPEPQFDSEQYMMLYTT **[M]** YNMCTQKPPHDYSQQLYD
 KYREAFEEYIHSTVLPALREKHDEYMLRELVKRWSNHKVMVRWLSRFFYYLD RYFIARRSLPPLNE
 VGLTCFRDLVYNELH SKVKDAVIALVDKEREGEQIDRALLKNVLDIYVEIGMGQMERYEEDFESFM
 LLDSASYYSRKASSWIQEDSCPDYMLKSEECLKKERERVAHYLHSSSEPKLVEKVQH ELLVVYANQ
 LLEKEHSGCRALLRDDKVDDLSRMYRLYHKIVKGLEP VANIFKQHVTAEGNALVQQAEDTATNHAA
 NTASVQE QVLIRKVIELHDKY MVYVVECFQNHTLFHKALKEAFEIFCNKTVAGSSSAELLATFCDN
 ILKKGGSEKLSDEAIEDTLEKVVKLLAYISDKDLFAEFYRKKLARLLFD RSANDDHERSILTCLK
 QQCGGQFTSKMEGMVTDLT LARENQNSFE EYLGNNPAANPGIDLTVTVLTTGFWPSYKSFDINLPA
 EMVKCVEVFKG FYETKTKHRKLTW IYSLGTCHLNGKFDVKPIELVVSTYQAAVLLLFNTTDKLSYT
 DILTQLNLSHEDLV RLLHSLSCARYKILLKEPSTKTVSQSDSFEFN SKFTDRMRRIKIPLPPVDER
 KKVVEDVDKDRRYAIDAAIVRIMKSRKVLGHQQLVSECVEQLSRMFKPDIKAIKKRMEDLITRDYL
 ERDKENANMFRYLA

Fig. 60

MMIERKTIDLEQGWDFMQKGITKLKNILEGFPEPQFSSSEDYMMLYTT **[M]** YNMCTQKPPHDYSQQL
 YEKYREAIEEYITSTVLPSLREKHDEFMLRELVKRWSNHKVMVRWLSRFFHYLDYFIARRSLPPL
 HEVGLTCFRDLVYQEINGKVRDAVISLINQEREQIDRALLKNVLDIFVEVGMSQMDYYENDFEA
 DMLKDTAAYYSRKASNWILEDSCPDYMLKAEELRREKDRVSNYLHSSSEPKLLEKVQHELLSHYA
 TQLEKEHSGCHALLRDDKVADLSRMYRLFSKIPRGLDPVSNIFKQHVTAEGTALVKQAEDAASNK
 KAEKRDVVGLQEQVFVRKIIELHDKYLTIVNDCFTNHTLFHKALKEAFEIFCNKGVSGSSSAELLA
 TFCDNILKKGGSEKLSDEAIEETLEKVVRLLAYISDKDLFAEFYRKKLARRLLFDKSANDEHERSI
 LTKLKQQCGGQFTSKMEGMVTDLTAKENQSNFEEYLNNNNSNVNPGIDLTVTVLTTGFWPSYKSFD
 LNLPAEMVKCVEVFREFYQTKTKHRKLTWIYSLGTCNIIGKFDPKTMELIVTTYQASALLFNSSD
 RLSYNEIMTQLNLSDDDVRLLHSLSCAKYKILSKEPNTKTISPTDCFQFNSKFTDKMRRIKIPLP
 PVDEKKKVIEDVDKDRRYAIDASIVRIMKSRKVLGYQQQLVMECVEQLGRMFKPDVKAIAKKRIEDLI
 TRDYLERDKDNANLFRYLA

Fig. 61

MNERKTIDLDNGWEFMQKGITKLKKILEGQPEPQFSSSEDYMMLYTT **[M]** YNMCTQKPPHDYSQQLY
 DKYREAFEEYITSTVLPSLREKHDEFMLRELVNRWTNHKVMVRWLSRFFHYLDYFIARRSLPALH
 EVGLTCFRDLVYQELKVVRDAVISLIDQEREQIDRALLKNVLDIFVEIGMSQMDQYENDFEEA
 MLTDTAAYYSRKASNWILEDSCPDYMLKAEELRREKDRVSHYLHFSSEPKLLEKVQHELLSVYAT
 QLLEKEHSGCHALLRDDKVDDLSRMYRLFSKIPKGLDPVSYIFKQHVITNEGMALVKQAEDAASNKK
 AEKRDVVSLEQEQVFVRKIIELHDKYLAYVNDCFTNHTLFHKALKEAFEIFCNKGVAGSSNAELLAT
 FCDNILKKGGSEKLSDEAIEETLEKVVKLLAYISDKDLFAEFYRKKLARRLLFDKSANDEHERSIL
 TKLKQQCGGQFTSKMEGMVTDLTAKENQSSFEEYLGNNANVNPGIDLTVTVLTTGFWPSYKSFDL
 NLPAEMVKCVEVFREFYQTKTKHRKLTWIYSLGTCNINGKFEPKTIELIVTTYQASALLFNNTSDR
 LSYQEIMTQLNLSDDDVRLLHSLSCAKYKILTKEPNNTKTISPTDYFEFNSKFTDKMRRIKIPLPP
 VDEKKKVIEDVDKDRRYAIDASIVRIMKSRKVLGYQQQLVMECVEQLGRMFKPDVKAIAKKRIEDLIT
 RDYLERDKDNANLFRYLA

Fig. 62

MNERKTIDLEQGWDFMQKGITKLKNILEGLPEPQFSSSEDYMMLYTT **[M]** YNMCTQKPPHDYSQQLY
DKYRESFEEYITSTVLPSLREKHDEFMLRELVRWWSNHKVMVRWLSRFFHYLDRIYFIARRSLPPLN
EVGLACFRDLVYQEVNGKVRDAVISLIDQEREQEQIDRALLKNVLDIFVEIGMGQMEYYENDFEAS
MLNDTAAYYSRKASNWILEDSCPDYMLKAECECLKREKDRVSHYLHSSSEPKLLEKVQTELLSVYAT
QLLEKEHSGCHALLRDDKVDDLSRMYRLF SKIQKGLDPVSSMFKQHVTAEGTTLVKQAEDAASSTKK
AEKRDVVGLQEQQVFVRKVIELHDKYLAYVNDCFMNHTLFHKALKEAFEIFCNKGVAGSSSAELLAT
FCDNILKKGGSEKLSDEAIEDTLEKVVKLLAYISDKDLFAEFYRKKLARRLLFDKSANDEHERSIL
TKLKQQCGGQFTSKMEGMVTDLT LAKENQSHFEEYLNNPNVSPGIDLTVTVLTTGFWPSYKSFDL
NLPAEMVKCVEVFREFYQTKTKHRKLTWIYSLGTCNINGKFEPKTMELIVTTYQASALLLFNSSDR
LSYQEIMTQLNLSDDDVRLLHSLSCAKYKILLKEPNTKTISPTDFFEFNSKFTDKMRRIKIPLPP
VDEKKKVIEDVDKDRRYAIDASIVRIMKSRKVLGYQQQLVMECVEQLGRMFKPDVKAIAKKRIEDLIT
RDYLERDKENPNLFRYLA

Fig. 63

MNERKTIDLEQGWDFMQKGITKLKNILEGLPEPQFSSSEDYMMLYTT **[M]** YNMCTQKPPHDYSQQLY
DKYRESFEEYITSTVLPSLREKHDEFMLRELVRWWSNHKVMVRWLSRFFHYLDRIYFIARRSLPPLN
EVGLACFRDLVYQEVNGKVRDAVISLIDQEREQEQIDRALLKNVLDIFVEIGMGQMEYYENDFEAS
MLNDTAAYYSRKASNWILEDSCPDYMLKAECECLKREKDRVSHYLHSSSEPKLLEKVQTELLSVYAT
QLLEKEHSGCHALLRDDKVDDLSRMYRLF SKIQKGLDPVSSMFKQHVTAEGTTLVKQAEDAASSTKK
AEKRDVVGLQEQQVFVRKVIELHDKYLAYVNDCFMNHTLFHKALKEAFEIFCNKGVAGSSSAELLAT
FCDNILKKGGSEKLSDEAIEDTLEKVVKLLAYISDKDLFAEFYRKKLARRLLFDKSANDEHERSIL
TKLKQQCGGQFTSKMEGMVTDLT LAKENQSHFEEYLNNPNVSPGIDLTVTVLTTGFWPSYKSFDL
NLPAEMVKCVEVFREFYQTKTKHRKLTWIYSLGTCNINGKFEPKTMELIVTTYQASALLLFNSSDR
LSYQEIMTQLNLSDDDVRLLHSLSCAKYKILLKEPNTKTISPTDFFEFNSKFTDKMRRIKIPLPP
VDEKKKVIEDVDKDRRYAIDASIVRIMKSRKVLGYQQQLVMECVEQLGRMFKPDVKAIAKKRIEDLIT
RDYLERDKENPNLFRYLA

Fig. 64

MSLHERKTIDLEQGWAFMQGITKLKNILDELNEPQFSSSEDYMMLYTT **[M]** YNMCTQKPPHDYSQE
 LYDKYRESFEEYITTTVLP SLREKHDEYMLRELVRWWSNHKIMVRWLSRFFHYLDRIYFIARRSLPA
 LNEVGLTCFRDLVYNEVHGKVKDAVISLIDQEREQEQIDRALLKNVLGIFVEIGLGSMECYENDFE
 TSMLNATAAYYSRKASNWILEDSCPDYMLKAECECLKHEKDRVAHYLHSSSEQKLEKVVQHELLFVY
 ASQLEKEHSGCHALLRDDKVGDL SRMYRLFCRITRGLDPVSQIFKQHVTAEGTALVKHAEDAASN
 KKAEEKDIVGLQEQQVFVRKVIELHDKYLAYVTDCFQNHSLFHKALKEAFEVFCNKG VAGSSSAELL
 AAFCDNILKKGGSEKLSDEAIEDTLEKVVKLLAYISDKDLFAEFYRKKLARLLFDKSANDDHRS
 ILTKLKQQCGGQFTSKMEGMVTDLT LARENQSSFDDYLSSNPKANSGIDLT VTVLTTGFWPSYKSF
 DLNLPDEMVKCVEIFKEFYETKTKHRKLTWIYSLGTCNINGKFETKTIELVVTTYQAAVLLLFNSA
 DKLSYSEIVQQNLNLSDDD VIRLLHSLSCAKYKILNKEPATKTITPNDHFEFNSKFTDRMRRIKIPL
 PPVDEKKKVIEDVDKDRRYAIDASIVRIMKSRKVLGHQQLVLECEQLGRMFKPDFKAIKKRIEDL
 IARDYLERDKDNP NLFKYLA

Fig. 65

MNERKTIDLEQGWDFMQGITKLKNILEGLPEPQFSSSEDYMMLYTT **[M]** YNMCTQKPPHDYSQQLY
 DKYRESFEEYITSTVLP SLREKHDEFMLRELVRWWSNHKVMVRWLSRFFHYLDRIYFIARRSLPPLN
 EVGLACFRDLVYQEVNGKVRDAVISLIDQEREQEQIDRALLKNVLDIFVEIGMGQMEYYENDFEAS
 MLNDTAAYYSRKASNWILEDSCPDYMLKAECECLKREKDRVSHYLHSSSEPKLEKVVQNELLSVYAT
 QLEKEHSGCHALLRDDKVDDL SRMYRLFSKIPKGLDPVSSMFKQHVTAEGTTLVKQAEDAAS TKK
 AEKRDVVGLQEQQVFVRKVIELHDKYLAYVNDCFMNHTLFHKALKEAFEIFCNKG VAGSSSAELLAT
 FCDNILKKGGSEKLSDEAIEDTLEKVVKLLAYISDKDLFAEFYRKKLARLLFDKSANDEHERSIL
 TKLKQQCGGQFTSKMEGMVTDLT LAKENQSHFEEYLNNPNVSPGIDLT VTVLTTGFWPSYKSFDL
 NLPAEMVKCVEVFREFYQTKTKHRKLTWIYSLGTCNINGKFEPKTMELIVTTYQASALLLFNLSDR
 LSYQEIMTQLNLSDDD VVRLHSLSCAKYKILLKEPNTKTISPTDYFEFNSKFTDKMRRIKIPLPP
 VDEKKKVIEDVDKDRRYAIDASIVRIMKSRKVLGYQQLVMECEQLGRMFKPDVKAIKKRIEDLIT
 RDYLERDKENPNLFRYLA

Fig. 66

MERKTIDLEQGWDYMQTGITKLKRILEGLPEPQFDSEQYMMLYTT **[M]** YNMCTQKPPHDYSQQLYD
 KYREAFEEYIDSTVLPALKEKHDEYMLRELVKRWSNHKVMVRWLSRFFYYLDYFIARRSLPPLNE
 VGLTCFRDRVYKELHSHKVKDAVIALVDKEREQIDRALLKNVLDIYVEIGMGQMERYEVDFFESFM
 LLDSASYYSRKASNWIQEDSCPDYMLKSEECLKKERERVAHYLHSSSEPKLVEKVQHELLVVYANQ
 LLEKEHSGCRALLRDDKVDDLSRMYRLYHKIAKGLEPVANIFKQHVTAEGNALVQQAEDTATNQAA
 NTASVQEQVLIRKVIELHDKYMVYVVECFQNHTLFHKALKEAFEIFCNKTVAGSSSAELLATFCDN
 ILKKGSEKLSDEAIEDTLEKVVKLLAYISDKDLFAEFYRKKLARLLFDRSANDDHERSILTKLK
 QQCGGQFTSKMEGMVTDLTARENQTSFEEYLGNNPAANPGIDLTVTVLTTGFWPSYKSFDINLPS
 EMVKCVEVFVKGFYETKTKHRKLTWIIYSLGTCHLNGKFDHKPIELVVSTYQAAVLLLFNTTDKLSYN
 DILTQLNLSHEDLVRLHLSLSCARYKILLKEPSTKTVTQTDSEFNAKFTDRMRRIKIPLPPVDER
 KKVVEDVDKDRRYAIDAAIVRIMKSRKVLGHQQLVSECVEQLSRMFKPDIAIKKRMEDLITRDYL
 ERDKENPNMFRYLA

Fig. 67

MNDRKVIELEQGWEFMGKGITKLKRILEGLPEPPFNSDYMMLYTT **[M]** YNMCTQKPPHDYSQQLY
 DNYKEAFVDYIHSTVLPVSLGDKHDEFMLRELVKRWSNHKVMVRWLSRFFHYLDYFIARRSLPSLN
 DVGLTCFRDLVYQEISGKAKDAVIALIDEEREQIDRALLKNVLDIYVEIGMTQMDYYEKDFEAH
 MLDDTAAYYSRKASSWILEDSCPEYMLKSEECLKKEKDRVAHYLHSSSEPKLLEKVQNEALLVYEN
 QLLEKENSGCRALLKDDKVEDLSRMYRLYSKVTKGLEPIGSIFKQHITDEGTALVQQAEDAAISKA
 ENAGGGSHEQVFVRKVIELHDKFMTYVTDCFNSHTIFHKALKEAFEVFLNKGVAGSSSAELLASFC
 DNILKKGSEKLSDEAIEDSLEKVVKLLAYVSDKDLFAEFYRKKLSRLLFDKSSANDDHERSILTK
 LKQQCGGQFTSKMEGMVTDLTARENQTNFEEYLGQNTDASPGLDLTVTVLTTGFWPSYKSSDLNL
 PAEMVRCVEVFVKQFYQTKTKHRKLTWVYSLGSCNINGKFGPKTIELVVGTYQAAALMLFNTSDRLS
 YSEITTQLNLADEDLVRLVQLSLSCAKYKILLKEPSTRNVISTDCFSFNSNFTDRMRRIKIPLPPMD
 ERKKVVEDVDKDRRYAIDASIVRIMKSRKALGYQQQLITECVEQLSRMFKPDFKAIKKRIEDLITRD
 YIERDKENPQLFRYLA

Fig. 68

MNDRKVIELEQGWEFMGKGITKLKRILEGLPEPPFNSEDYMMLYTT **[M]** YNMCTQKPPHDYSQQLY
DNYKQAFVDYINSTVLPSLREKHDEFMLRELVKRWANHKVMVRWLSRFFHYLDRYFIARRSLPSLN
EVGLTCFRDLVYQEISGKAKDAVIALIDI EREGGQIDRSLLKNVLDIYVEIGMGQMDHYEKDFEAH
MLDDTAAYYSRKASSWILEDSCPEYMLKSEECLKKEKERVANYLHSSSEPKLLEKVQNELLLVYES
QLLEKENSGCRALLKDDKVDDLSRMYRLYSKVTKGLEPIGSIFKQHITDEGTALVQQAEDAAISKA
ENTGGSHEQVFVRKVIELHDKFMTYVTDCFNSHTIFHKALKEAFEVFLNKG VAGSSSAELLATFCD
NILKKGSEKLSDEAIEDSLEKVVKLLAYVSDKDLFAEFYRKKLSRRLFLDKSANDDHRSILTKL
KQQCGGQFTSKMEGMVTDLT LARENQTNFEEYLSQNPDASPGLDLTVTVLTTGFWPSYKSSDLNLP
AEMVRCVEVFKQFYSTKTKHRKLTWVYSLGSCNINGKFGPKTIELVVGTYQAAALMLFNTSDRLSY
SEIATQLNLADEDLVRVLQSLSCAKYKILLKEPNTKTVSPTDCFSFNSSFTDRMRRI RIPLPPMDE
RKKVVEDVDKDRRYAIDASIVRIMKSRKVLGYQQ LITECVEQLSRMFKPDFKAIAKKRIEDLITRDY
IERDKENPQLFRYLA

Fig. 69-1

Brassica_Cull_Cds	-----ATGGAGCGCAAGACGATTGACTTGGACCAAGGATGGGACTATATGCAGACT
Radish_Cull_Cds	-----ATGGAGCGGAAGACGATTGATCTGGAACAAGGATGGGACTATATGCAGACT
Beet_Cull_Cds	----ATGAATGATCGTAAAGTTATTGAACTAGAGCAAGGATGGGAGTTCATGGGGAAG
Spinach_Cull_Cds	----ATGAACGATCGTAAAGTTATCGAACTAGAGCAAGGATGGGAGTTCATGGGGAAG
Leek_Cull_Cds	ATGTCGTTGCACGAAAGGAAAACCATTTGATTTGGAGCAGGGATGGGCTTTTATGCAGAAA
Squash_Cull_Cds	ATGACAATGGGTGAGCGGAAGACTATTGACTTGGAGCAAGGATGGGAGTTTATGCAGAAG
WaterMelon_Cull_Cds	ATGACAATGGGCGAGCGGAAGACTATTGACTTGGAAACAAGGATGGGAGTTTATGCAGAAG
Cucumber_Cull_Cds	ATGACAATGGGCGAGCGGAAGACTATTGACTTGGAGCAGGGATGGGAGTTTATGCAGAAG
Melon_Cull_Cds	ATGACAATGGGCGAGCGGAAGACTATTGACTTGGAACAGGGATGGGAGTTTATGCAGAAG
Tomato_Cull_Cds	----ATGAACCAACGAAGCACAAATCGATCTGGAACATGGATGGGACTTCATGCAAAGG
Eggplant_Cull_Cds	----ATGAACCAACGCAGCACAAATCGATCTGGAACATGGATGGGATTTTCATGCAAAAAG
Pepper_Cull_Cds	----ATGAACCAGCGTTCCACAATCAATCTAGAACATGGATGGGACTTCATGCAAAGG
Lettuce_Cull_Cds	----ATGAACGAAAGAAAAACAATAGACTTAGAGCAAGGATGGGACTTCATGCAGAAA
Chicory_Cull_Cds	----ATGAATGAAAGAAAAACAATAGACTTAGAACAAGGATGGGACTTCATGCAGAAA
Endive_Cull_Cds	----ATGAATGAAAGAAAAACAATAGACTTAGAACAAGGATGGGACTTCATGCAAAAA
Carrot_Cull_Cds	-ATGATGATTGAGCGGAAAACCTATAGACCTGGAGCAGGGATGGGACTTTATGCAAAAAG
Celery_Cull_Cds	----ATGAACGAGCGGAAGACTATCGATTTGGATAATGGATGGGAATTTATGCAGAAA
Brassica_Cull_Cds	GGTATCACTAAGCTGAAACGGATTCTTGAGGGGCTGCCTGAGCCGCAGTTTGA
Radish_Cull_Cds	GGGATCACTAAGCTGAAACGGATTCTTGAAGGATTGCCTGAGCCGCAATTCG
Beet_Cull_Cds	GGGATTACAAAGTTGAAGAGGATTCTGGAAGGATTGCCAGAGCCACCATTTA
Spinach_Cull_Cds	GGGATTACGAAGTTGAAAAGGATTTTGGAAGGATTACCAGAGCCGCCTTTTA
Leek_Cull_Cds	GGGATCACCAAAGTGAAGAATATTCTTGATGAGTTGAATGAACCTCAGTTCAG
Squash_Cull_Cds	GGAATCACAAAATTGAAGAACATTCTGGAAGGATTGCCTGAGCCACAGTTCAG
WaterMelon_Cull_Cds	GGAATCACAAAGTTGAAGAACATTCTTGAGGGCTTGCTGAGCCTCAGTTCAG
CuCumber_Cull_Cds	GGTATCACAAAGTTGAAGAACATTCTCGAGGGCTTGCTGAGCCTCAGTTCAG
Melon_Cull_Cds	GGTATCACAAAGTTGAAGAACATTCTTGAGGGCTTGCTGAGCCCCAGTTCAG
Tomato_Cull_Cds	GGCATTACAAAGCTGAAGAACATTCTAGAAGGGCTGCCTGAGCCTCAATTCAG
Eggplant_Cull_Cds	GGCATCACAAAGCTGAAGAACATTCTAGAAGGGCTGCCTGAGCCTCAGTTCAG
Pepper_Cull_Cds	GGCATTACAAAGCTGAAGAACATTCTAGAAGGGCTGCCCCGAGCCTCAGTTCAG
Lettuce_Cull_Cds	GGAATAACAAAGTTGAAGAATATTCTAGAAGGTCTTCCCGAGCCACAATTCAG
Chicory_Cull_Cds	GGCATAACAAAGTTGAAGAACATTCTAGAAGGTCTTCCCGAGCCACAATTCAG
Endive_Cull_Cds	GGCATAACAAAGTTGAAGAACATTCTAGAAGGTCTTCCCGAGCCACAATTCAG
Carrot_Cull_Cds	GGAATCACAAAGCTAAAGAATATTTTAGAAGGCTTTCCGGAGCCGCAATTCAG
Celery_Cull_Cds	GGGATCACTAAGTTGAAGAAGATTCTCGAAGGTCAACCTGAGCCTCAGTTTAG

Fig. 69-2

Brassica_Cull_Cds	CAATACATGATGCTCTATACGACTAT [C] TACAACATGTGCACTCAGAAACCTCCTCATGAT
Radish_Cull_Cds	CAGTACATGATGCTTTATACGACTAT [C] TACAACATGTGCACCCAGAAACCTCCTCATGAT
Beet_Cull_Cds	GACTACATGATGTTGTACACGACGAT [A] TACAATATGTGTACTCAGAAACCCCCACATGAT
Spinach_Cull_Cds	GACTACATGATGCTGTACACGACAAT [A] TACAACATGTGTACACAGAAACCCCTCATGAT
Leek_Cull_Cds	GATTACATGATGCTCTATACGACTAT [C] TATAATATGTGTACTCAGAAGCCGCCACATGAT
Squash_Cull_Cds	GACTACATGATGCTTTACACTACAAT [A] TATAACATGTGTACCCAGAAGCCACCGCATGAT
WaterMelon_Cull_Cds	GACTACATGATGCTTTATACCACCAT [A] TACAACATGTGCACACAAAAGCCGCCACATGAT
CuCumber_Cull_Cds	GACTACATGATGCTTTACACTACCAT [A] TATAACATGTGCACCCAAAAGCCGCCGCATGAT
Melon_Cull_Cds	GACTACATGATGCTTTACACTACCAT [A] TATAACATGTGCACCCAAAAGCCGCCGCATGAT
Tomato_Cull_Cds	GACTATATGATGCTATATACGACAAT [T] TACAACATGTGTACTCAAAAGCCCCCACATGAT
Eggplant_Cull_Cds	GACTATATGATGCTGTATACGACAAT [T] TACAACATGTGTACTCAGAAGCCCCCACATGAT
Pepper_Cull_Cds	GACTATATGATGCTGTATACGACAAT [T] TACAACATGTGTACTCAGAAGCCCCCACATGAT
Lettuce_Cull_Cds	GATTACATGATGCTCTACACAACCAT [C] TACAACATGTGTACACAGAAACCACCACATGAT
Chicory_Cull_Cds	GATTACATGATGCTCTACACAACCAT [C] TACAATATGTGCACACAAAAACCGCCACATGAT
Endive_Cull_Cds	GATTACATGATGCTCTACACAACCAT [C] TACAATATGTGCACACAAAAACCGCCACATGAT
Carrot_Cull_Cds	GATTATATGATGCTTTATACAACAT [C] TATAACATGTGTACACAGAAACCTCCACATGAT
Celery_Cull_Cds	GACTATATGATGCTTTACACAACAT [C] TATAATATGTGTACGCAGAAGCCTCCACATGAT

Brassica_Cull_Cds	TACTCACAGCAGCTTTATGACAAGTATCGTGAAGCATTTGAGGAGTATATTTCACTCAACT
Radish_Cull_Cds	TACTCTCAGCAGCTTTATGACAAGTATCGCGAAGCTTTTGAGGAGTACATTGACTCTACT
Beet_Cull_Cds	TACTCTCAACAGCTCTATGACAATTACAAACAGGCTTTTGTGGATTACATCAACTCGACG
Spinach_Cull_Cds	TACTCTCAACAACTCTATGACAATTACAAAGAGGCATTTGTGGATTACATACATTCAACG
Leek_Cull_Cds	TATTCTCAGGAGTTGTATGATAAGTACCGAGAGTCCTTTGAAGAGTATATCACTACCACT
Squash_Cull_Cds	TACTCCCAGCAGCTGTATGATAAAATACCGCGAATCGTTTGAGGAGTACATCAGTTCTATG
WaterMelon_Cull_Cds	TACTCCCAGCAGCTATACGATAAAATACCGTGAATCTTTTGAGGAGTATATCACTTCTATG
CuCumber_Cull_Cds	TACTCCCAGCAGCTGTATGATAAAATATCGTGAATCTTTTGAGAGTACATCACTTCTATG
Melon_Cull_Cds	TACTCCCAGCAGCTGTATGATAAAATATCGTGAATCTTTTGAGAGTACATCACTTCTATG
Tomato_Cull_Cds	TATTCTCAACAGCTGTATGACAAATATCGTGAAGCTTTTGAGAATATATCACAAACAACG
Eggplant_Cull_Cds	TATTCTCAACAGCTGTATGACAAATATCGTGAAGCTTTTGAGAATATATCACAAACGACG
Pepper_Cull_Cds	TATTCTCAACAGCTGTATGACAAATATCGTGAAGCTTTTGAGAATATATCACAAACAACG
Lettuce_Cull_Cds	TACTCCCAACAGTTGTATGACAAATATCGTGAGTCTTTTGAGAGTATATTACTTCAACT
Chicory_Cull_Cds	TACTCTCAACAATTGTATGACAAATACCGCGAGTCTTTTGAGAGTACATTACTTCAACG
Endive_Cull_Cds	TACTCTCAACAATTATATGACAAATACCGCGAGTCTTTTGAGAGTACATAACTTCAACG
Carrot_Cull_Cds	TACTCTCAGCAGCTGTATGAAAAGTATCGTGAAGCTATTGAGGAGTACATTACTTCTACA
Celery_Cull_Cds	TATTCTCAACAGCTGTATGACAAGTACCGTGAGGCCTTTGAGGAGTACATAACTTCAACT

Fig. 69-3

Brassica_Cull_Cds	GTTTTGCCTGCTCTAAGGGAGAAGCATGATGAGTACATGCTGAGGGAGCTGGTTAAGAGA
Radish_Cull_Cds	GTTTTGCCTGCTTTGAAGGAGAAGCATGATGAATACATGCTACGGGAGCTGGTTAAGAGA
Beet_Cull_Cds	GTTTTACCTTCTTTGCGGGAGAAGCATGATGAGTTTATGTTAAGAGAACTTGTGAAAAGA
Spinach_Cull_Cds	GTTTTACCTTCTTTGGGGGACAAACATGATGAGTTTATGCTGAGAGAGCTTGTGAAGAGA
Leek_Cull_Cds	GTGCTTCCTTCATTGAGAGAAAAGCATGATGAATACATGTTAAGGGAGCTCGTGAGAAGG
Squash_Cull_Cds	GTTTTACCATCCTTGAGGGAGAAGCATGACGAATTTATGTTGAGAGAACTGGTCAAAAAGG
WaterMelon_Cull_Cds	GTCTTACCATCCTTGAGGGAGAAGCATGACGAGTTCATGTTGAGAGAACTGGTCAAAAAGG
CuCumber_Cull_Cds	GTCTTACCATCCTTGAGGGAGAAGCACGATGAGTTCATGTTGAGAGAACTAGTAAAAAGG
Melon_Cull_Cds	GTCTTACCATCCTTGAGGGAGAAGCATGACGAGTTCATGTTGAGAGAACTAGTCAAAAAGG
Tomato_Cull_Cds	GTATTGCCTTCTTTGAGAGAAAAACATGACGAGTTTATGTTGCGAGAGTTGGTAAAAAGG
Eggplant_Cull_Cds	GTATTACCTTCTTTGAGAGAAAAACATGACGAGTTCATGTTGCGAGAGTTGGTAAAAAGG
Pepper_Cull_Cds	GTATTGCCTTCTTTGAGAGAAAAACATGACGAGTTCATGTTGCGAGAGCTGGTAAAAAGG
Lettuce_Cull_Cds	GTGTTACCTTCTTTAAGAGAGAAGCATGATGAGTTCATGCTGAGAGAGCTTGTTAGAAGG
Chicory_Cull_Cds	GTGTTACCTTCTTTAAGAGAGAAGCATGATGAGTTTATGCTTAGAGAGCTTGTTAGAAGA
Endive_Cull_Cds	GTGTTACCTTCTTTAAGAGAGAAGCATGATGAGTTTATGCTTAGAGAGCTTGTTAGAAGG
Carrot_Cull_Cds	GTATTGCCTTCATTGAGAGAGAAGCATGATGAATTCATGCTTAGAGAACTTGTGAAGAGA
Celery_Cull_Cds	GTCCTGCCTTCTTTACGAGAGAAGCATGATGAGTTTATGTTGAGAGAGCTCGTGAATAGA
Brassica_Cull_Cds	TGGTCTAACCATAAAGTTATGGTTTCGATGGCTATCCCGCTTCTTCTACTATCTTGACCGT
Radish_Cull_Cds	TGGTCTAACCATAAAGTTATGGTTAGATGGCTATCCCGATTCTTCTACTATCTTGACCGT
Beet_Cull_Cds	TGGGCAAAATCATAAAGTAATGGTCAGGTGGTTGTCTCGTTTCTTCCATTATCTGGACCGG
Spinach_Cull_Cds	TGGTCAAAATCATAAAGTAATGGTGAGGTGGTTGTCTCGCTTCTTCCATTATCTGGATCGG
Leek_Cull_Cds	TGGTCAAAATCATAAAATAATGGTTAGATGGCTTTTCACGCTTTTCCATTATCTTGATCGC
Squash_Cull_Cds	TGGACCAACCATAAAGTCATGGTGAGGTGGCTTTCTCGCTTCTTCCACTATCTTGATCGA
WaterMelon_Cull_Cds	TGGACGAACCATAAAGTCATGGTGAGGTGGCTTTCTCGCTTCTTCCACTATCTTGACCGA
CuCumber_Cull_Cds	TGGACAAACCATAAAGTCATGGTGAGGTGGCTTTCTCGCTTCTTCCACTATCTTGATCGG
Melon_Cull_Cds	TGGACAAACCATAAAGTCATGGTGAGGTGGCTTTCTCGCTTCTTCCACTATCTTGATCGG
Tomato_Cull_Cds	TGGTCAAAATCATAAAGTCATGGTCAGATGGTTGTCAAGATTCTTCCATTACCTTGACCGG
Eggplant_Cull_Cds	TGGTCAAACCATAAGGTCATGGTTAGATGGTTATCGCGATTCTTCCATTATCTTGACCGT
Pepper_Cull_Cds	TGGTCAAACCATAAGGTCATGGTCAGATGGTTATCGCGATTCTTCCATTATCTTGATCGC
Lettuce_Cull_Cds	TGGTCAAAATCATAAAGTCATGGTGCGGTGGCTTTCTAGATTCTTCCATTATCTTGACCGA
Chicory_Cull_Cds	TGGTCAAAATCATAAAGTGATGGTTAGGTGGCTTTCTAGATTCTTCCATTATCTTGATCGA
Endive_Cull_Cds	TGGTCAAAATCATAAAGTGATGGTTAGGTGGCTTTCTAGATTCTTCCATTATCTTGATCGA
Carrot_Cull_Cds	TGGTCTAATCATAAGGTCATGGTCAGGTGGCTTTCTCGATTCTTTCACTATCTTGATCGC
Celery_Cull_Cds	TGGACAAACCATAAAGTCATGGTCAGGTGGCTTTCTCGATTCTTTCACTATCTTGATCGG

Fig. 69-4

Brassica_Cull_Cds	TACTTCATTGCTCGGAGGTCAC TTCCACCCCTGAATGAAGTTGGCCTGACTTGCTTCCGT
Radish_Cull_Cds	TACTTCATTGCTCGGAGATCGCTGCCACCGCTTAATGAAGTTGGGCTCACATGCTTCCGT
Beet_Cull_Cds	TATTTCAATTGCTCGGAGGTCGCTTCCTTCTTTGAATGAAGTTGGACTGACTTGTTTCCGT
Spinach_Cull_Cds	TACTTCATCGCTCGGAGATCGCTTCCTTCTTTGAATGATGTTGGATTGACGTGCTTCCGT
Leek_Cull_Cds	TACTTTATAGCACGAAGATCATTGCCTGCTCTTAATGAAGTCGGTCTCACTTGTTTCCGT
Squash_Cull_Cds	TACTTCATTGCTCGAAGGTCAC TTCCACCTCTCAATGAAGTTGGCCTCACTTGCTTCCGT
WaterMelon_Cull_Cds	TACTTCATTGCTCGAAGATCAC TTCCACCTCTCAACGAAGTTGGCCTCACATGCTTCCGT
CuCumber_Cull_Cds	TACTTCATCGCTCGAAGGTCAC TTCCACCTCTAAATGAAGTTGGCCTCACATGCTTCCGC
Melon_Cull_Cds	TACTTCATCGCTCGAAGGTCAC TTCCACCTCTAAATGAAGTTGGCCTCACATGCTTCCGC
Tomato_Cull_Cds	TATTTCAATTGCCCGGAGATCTCTGCCGGGGCTTAATGAAGTTGGACTAACTTGCTTCCGC
Eggplant_Cull_Cds	TATTTCAATTGCTCGGAGATCACTGCCAGGGCTTAATGAAGTTGGACTAACTTGCTTCCGC
Pepper_Cull_Cds	TATTTCAATTGCCCGGAGATCTCTACCGGGGCTTAATGAAGTTGGACTAACTTGCTTCCGA
Lettuce_Cull_Cds	TATTTCAATTGCCCCGAAGATCTCTTCCGCCACTAAATGAAGTTGGACTTGCTGTTTTCGT
Chicory_Cull_Cds	TACTTCATTGCCCCGAAGATCTCTTCCACCATTAAATGAAGTTGGACTTGCGTGTTTTCGT
Endive_Cull_Cds	TACTTTATTGCAAGAAGATCTCTTCCACCATTAAATGAAGTTGGACTTGCGTGTTTTCGT
Carrot_Cull_Cds	TATTTTATTGCTCGGAGGTCAC TTCCACCAC TTCATGAAGTTGGACTCACTTGCTTTCGG
Celery_Cull_Cds	TACTTCATTGCGAGGAGGTCAC TTCTGCAC TTCATGAAGTTGGACTCACGTGCTTCCGG
Brassica_Cull_Cds	GACCTGGTTTTATAACGAGTTGCATTCCAAGGTCAAAGATGCTGTAATAGCACTTGTTGAT
Radish_Cull_Cds	GACCGGGTGTATAAGGAGTTGCATTCCAAGGTCAAAGATGCTGTAATAGCACTTGTTGAT
Beet_Cull_Cds	GATCTGGTTTTATCAAGAAATATCTGGCAAAGCCAAGGATGCTGTTATAGCCCTGATTGAT
Spinach_Cull_Cds	GATCTGGTTTTATCAAGAAATATCTGGCAAAGCCAAGGATGCTGTTATTGCTCTGATTGAT
Leek_Cull_Cds	GATCTGGTGTACAACGAAGTCCATGGGAAAGTTAAAGATGCCGTGATCTCATTGATTGAC
Squash_Cull_Cds	GAATTGGTGTACAAAGAGCTAAACAGTAAAGTGAGGGATGCAGTAATTTCAATTGATCGAT
WaterMelon_Cull_Cds	GAATTGGTGTACAAAGAGCTAAACAGTAAAGTGAGGGATGCAGTAATTTCAATTGATTGAT
CuCumber_Cull_Cds	GAATTGGTGTACAAAGAGCTAAATAGTAAAGTGAGGGATGCAGTAATTTCAATTGATTGAT
Melon_Cull_Cds	GAATTGGTGTACAAAGAGCTAAACAGTAAAGTGAGGGATGCAGTAATCTCATTGATTGAT
Tomato_Cull_Cds	GATCAGGTCTACCAAGAGTTGAATGGAAAAGTCAGGGATGCTGTTATATCTCTGATTGAT
Eggplant_Cull_Cds	GATCTGGTCTACCAAGAGTTGAATGGAAAAGTCAGGGATGCTGTTATATCTCTGATTGAT
Pepper_Cull_Cds	GATCTGGTCTACCAAGAGTTGAATGGAAAAGTCAGGGATGCTGTTATATCTCTGATTGAT
Lettuce_Cull_Cds	GATCTGGTATACCAAGAGGTGAATGGTAAAGTGAGAGATGCTGTAATATCTTTGATTGAT
Chicory_Cull_Cds	GATCTGGTATACCAAGAGGTGAATGGGAAAGTGAGAGATGCTGTAATATCTTTGATTGAT
Endive_Cull_Cds	GATCTGGTATACCAAGAGGTGAATGGAAAAGTGAGAGATGCTGTAATATCTTTGATTGAT
Carrot_Cull_Cds	GACCTGGTTTTACCAGGAGATAAAATGGGAAAGTAAGGGATGCTGTAATATCATTGATTAAT
Celery_Cull_Cds	GATCTGGTCTATCAGGAGCTGAAAGTTAAAGTGAGGGATGCTGTAATATCTCTGATCGAT

Fig. 69-5

Brassica_Cull_Cds	AAAGAACGGGAGGGTGAGCAGATTGACAGGGCTCTATTGAAAAACGTATTAGACATTTAT
Radish_Cull_Cds	AAAGAACGGGAAGGCGAGCAGATTGACAGGGCTCTTCTGAAAAACGTATTAGATATCTAT
Beet_Cull_Cds	ATAGAAAGAGAAGGTGGGCAGATTGACAGATCATTATTGAAAAATGTACTTGATATATAT
Spinach_Cull_Cds	GAAGAAAGAGAGGGTGGGCAAATTGACAGAGCCTTATTGAAGAATGTACTTGATATATAC
Leek_Cull_Cds	CAAGAGAGGGAAGGGGAGCAAATTGACAGAGCTTTATTAAAGAATGTTTTGGGTATTTTT
Squash_Cull_Cds	CAAGAACGTGAAGGAGAGCAGATTGACAGAGCTCTGTTGAAGAACGTGTTGGATATATTT
WaterMelon_Cull_Cds	CAAGAACGTGAAGGAGAGCAGATTGACAGAGCTCTACTGAAGAATGTATTAGATATATTT
CuCumber_Cull_Cds	CAAGAACGTGAAGGAGAACAGATTGACAGAGCTCTACTGAAGAATGTACTAGATATATTT
Melon_Cull_Cds	CAAGAACGTGAAGGAGAACAGATTGACAGAGCTCTACTGAAGAATGTATTAGATATATTT
Tomato_Cull_Cds	CAAGAGCGTGAGGGAGAGCAAATTGACAGAGCTCTACTTAAGAATGTGCTTGATATATTT
Eggplant_Cull_Cds	CAAGAGCGTGAGGGAGAGCAAATTGACAGAGCTCTACTGAAGAATGTGCTAGATATATTT
Pepper_Cull_Cds	CAAGAGCGTGAGGGAGAGCAAATTGACAGAGCTCTACTGAAGAATGTGCTAGATATATTT
Lettuce_Cull_Cds	CAAGAGCGTGAAAGGGAGCAGATTGATCGAGCTTTACTGAAGAATGTTCTAGATATATTT
Chicory_Cull_Cds	CAAGAGCGTGAAAGGCGAGCAAATTGACCGAGCATTACTCAAGAATGTTCTAGATATATTT
Endive_Cull_Cds	CAAGAGCGTGAAAGGCGAGCAAATTGACCGAGCATTACTGAAGAATGTTCTAGATATATTT
Carrot_Cull_Cds	CAAGAGCGCGAGGGAGAGCAAATTGACCGAGCTTTGTTGAAGAATGTTCTAGATATATTT
Celery_Cull_Cds	CAAGAGCGTGAGGGGGAACAGATTGACCGAGCTTTATTAAAGAACGTGTTAGATATATTT
Brassica_Cull_Cds	GTAGAGATTGGAATGGGACAGATGGAAAGATACGAGGAGGATTTTGAAAGCTTCATGCTT
Radish_Cull_Cds	GTAGAGATTGGAATGGGACAGATGGAAAGATACGAAGTGGATTTTGAAAGCTTCATGCTT
Beet_Cull_Cds	GTTGAAATTGGAATGGGACAAATGGATCACTATGAAAAAGACTTTGAAGCTCATATGCTG
Spinach_Cull_Cds	GTTGAAATTGGAATGACACAAATGGATTACTACGAAAAGGACTTTGAAGCTCATATGCTG
Leek_Cull_Cds	GTAGAGATTGGTTTGGGAAGCATGGAATGTTATGAGAATGATTTTGAAACATCAATGCTT
Squash_Cull_Cds	GTGGAGATTGGGATGGGGCAAATGGATTATTATGAAAATGACTTTGAAGCTGCCATGCTT
WaterMelon_Cull_Cds	GTGGAAATTGGGATGGGGCAAATGGATTACTATGAAAATGACTTTGAAGCTGCCATGCTT
CuCumber_Cull_Cds	GTGGAAATTGGTATGGGGCAAATGGATTACTATGAAAATGACTTTGAAGCTGCCATGCTT
Melon_Cull_Cds	GTGGAAATTGGTATGGGGCAAATGGATTACTATGAAAATGACTTTGAAGCTGCCATGCTT
Tomato_Cull_Cds	GTCGAAATTGGAATGGGGTTAATGGATTATTATGAGAATGATTTTGAAAGCTGCAATGCTC
Eggplant_Cull_Cds	GTTGAAATTGGAATGGGGTCAATGGATTATTATGAGAATGATTTTGAAAGCTGCAATGCTC
Pepper_Cull_Cds	GTTGAAATTGGAATGGGGTCGATGGATTATTATGAGAATGATTTTGAAAGCTGCAATGCTC
Lettuce_Cull_Cds	GTTGAGATAGGAATGGGACAAATGGAGTATTATGAGAATGATTTTGAAAGCATCCATGCTT
Chicory_Cull_Cds	GTTGAAATAGGAATGGGACAAATGGAATATTATGAGAATGATTTTGAAAGCATCCATGCTT
Endive_Cull_Cds	GTTGAAATAGGAATGGGACAAATGGAATATTATGAGAATGATTTTGAAAGCATCTATGCTT
Carrot_Cull_Cds	GTTGAAGTTGGAATGAGTCAAATGGATTATTATGAGAATGACTTTGAAGCAGACATGCTC
Celery_Cull_Cds	GTTGAAATCGGAATGAGTCAAATGGATCAATATGAGAATGACTTTGAAGAAGCCATGCTC

Fig. 69-6

Brassica_Cull_Cds	TTAGATTGAGCATCTTACTATTCTCGCAAAGGCGTCAAGCTGGATCCAAGAAGATTCTTGC
Radish_Cull_Cds	TTGGATTGAGCATCTTACTATTCTCGCAAAGCATCAAAGCTGGATCCAGGAAGATTCTTGC
Beet_Cull_Cds	GATGATACTGCTGCTTACTACTCGCGCAAAGCGTCTAGCTGGATTCTTGAGGACTCTTGT
Spinach_Cull_Cds	GATGATACTGCTGCTTATTACTCACGCAAAGGCTTCAAGCTGGATTCTGGAGGACTCATGT
Leek_Cull_Cds	AATGCTACAGCAGCCTATTATTACGAAAAGCTTCAAATTGGATTCTAGAAGATTTCATGT
Squash_Cull_Cds	AAAGATACTGCTGCTTACTACTCTAGGAAGGCATCAAATTGGATCTTAGAAGATTCTTGT
WaterMelon_Cull_Cds	AAAGATACTGCTGCTTATTACTCTAGGAAGGCTTCCAATTGGATCCTAGAAGATTCTTGT
CuCumber_Cull_Cds	AAAGATACTGCTGCTTATTACTCTAGGAAGGCTTCCAATTGGATCCTAGAAGATTCTTGT
Melon_Cull_Cds	AAAGATACTGCTGCTTATTACTCTAGGAAGGCTTCCAATTGGATCCTAGAAGATTCTTGT
Tomato_Cull_Cds	AAGGACACAGCGGCTTATTATTCTCGCAAAGCTTCTAATTGGATCCTCGAAGATTTCATGT
Eggplant_Cull_Cds	AAGGACACTGCGGCTTATTATTCTCGCAAAGCTTCTAACTGGATCCTCGAAGATTTCATGT
Pepper_Cull_Cds	AAGGACACCGCAGCTTATTATTCTCGCAAAGCTTCTAACTGGATACTTGAAGATTTCATGT
Lettuce_Cull_Cds	AATGATACAGCAGCATATTATTACGCAAAGGCTTCCAAGCTGGATTCTAGAAGATTCTTGT
Chicory_Cull_Cds	AATGATACAGCAGCATATTATTACGCAAAGCTTCCAATTGGATTCTAGAAGATTCTTGT
Endive_Cull_Cds	AATGATACAGCAGCATATTATTACGCAAAGCTTCCAAGCTGGATTCTAGAAGATTCTTGT
Carrot_Cull_Cds	AAAGATACAGCAGCATACTATTCTCGAAAGGCTTCCAAGCTGGATCTTAGAAGATTCTTGT
Celery_Cull_Cds	ACTGATACTGCTGCTTACTATTCTCGAAAAGCTTCAAAGCTGGATCCTTGAAGATTCTTGT
Brassica_Cull_Cds	CCTGATTACATGCTGAAGTCTGAAGAATGTCTTAAGAAGGAGAGGGAGAGAGTGGCTCAC
Radish_Cull_Cds	CCTGATTACATGCTGAAGTCTGAAGAATGCCTTAAGAAGGAGAGGGAGAGGGTTGCTCAC
Beet_Cull_Cds	CCGGAATACATGTTAAAGTCTGAGGAGTGTTTGAAGAAGGAGAAAGAGAGAGTGGCTAAT
Spinach_Cull_Cds	CCGGAATACATGTTGAAGTCGGAGGAGTGTTTGAAGAAAGAGAAAGATAGAGTGGCTCAT
Leek_Cull_Cds	CCAGATTATATGCTAAAAGCCGAGGAGTGCTTAAAACATGAGAAAGATAGAGTTGCTCAT
Squash_Cull_Cds	CCTGATTATATGCTAAAAGCAGAGGAGTGCTTGAGACGAGAAAAGGACCGAGTTTCTCAC
WaterMelon_Cull_Cds	CCCGATTATATGCTAAAAGCAGAGGAGTGCTTGAAACGAGAAAAGGATAGAGTTTCTCAC
CuCumber_Cull_Cds	CCCGATTATATGCTTAAAGCAGAGGAGTGCTTGAAACGAGAAAAGGATAGGGTTTCCCAC
Melon_Cull_Cds	CCCGATTATATGCTAAAAGCAGAGGAGTGCTTGAAACGAGAAAAGGATAGGGTTTCCCAC
Tomato_Cull_Cds	CCGGATTATATGCTGAAAGCCGAGGAGTGCTTGAAACGGGAGAAGGATAGGGTCTCTCAT
Eggplant_Cull_Cds	CCAGATTATATGCTGAAAGCTGAGGAGTGCTTGAAACGGGAGAAGGATAGGGTCTCCCAT
Pepper_Cull_Cds	CCAGATTATATGCTGAAAGCCGAGGAGTGCTTGAAACGGGAGAAAGATAGGGTCTCTCAC
Lettuce_Cull_Cds	CCAGATTATATGCTCAAAGCAGAGGAGTGCTTAAAAAGAGAAAAGGACAGAGTGTCTCAT
Chicory_Cull_Cds	CCAGATTATATGCTCAAAGCTGAGGAGTGCTTAAAAAGAGAAAAGGACAGAGTTTCTCAT
Endive_Cull_Cds	CCAGATTATATGCTCAAAGCTGAGGAGTGCTTAAAAAGAGAAAAGGACAGAGTTTCTCAT
Carrot_Cull_Cds	CCAGATTATATGCTCAAAGCGGAAGAGTGTTTGAGACGGGAAAAGGACAGGGTCTCTAAC
Celery_Cull_Cds	CCTGATTATATGTTAAAGGCAGAAGAATGTTTGCGACGAGAGAAGGACAGGGTTTCCCAC

Fig. 69-7

Brassica_Cull_Cds	TACCTTCACTCAAGCAGCGAGCCAAAGCTGGTTGAGAAAGTACAACATGAGCTGTTGGTA
Radish_Cull_Cds	TACCTTCATTCAAGCAGCGAGCCAAAGCTGGTTGAGAAAGTACAACATGAGCTGTTGGTT
Beet_Cull_Cds	TATTTACATTCCAGCAGTGAGCCAAAGCTTCTGGAGAAAGTGCAAAACGAGTTGCTATTG
Spinach_Cull_Cds	TATCTACATTCCAGCAGTGAGCCAAAGCTTCTGGAGAAAGTACAAAATGAGTTGCTACTG
Leek_Cull_Cds	TATTTGCATTCAAGCAGTGAACAGAAGCTGTTAGAGAAAGTGCAACATGAGTTACTTTTC
Squash_Cull_Cds	TATCTGCACTCTAGTAGCGAGCCAAAGTTATTGGAGAAAGTTCAACATGAACTATTGTCT
WaterMelon_Cull_Cds	TATTTGCACTCTAGTAGCGAGCCAAAGTTATTAGAGAAAGTTCAACATGAACTGTTATCT
CuCumber_Cull_Cds	TATTTGCACTCTAGTAGCGAGCCAAAGTTGTTGGAGAAAGTTCAACATGAACTATTATCT
Melon_Cull_Cds	TATTTGCACTCTAGTAGCGAGCCAAAGTTGTTGGAGAAAGTTCAACACGAACTGTTATCT
Tomato_Cull_Cds	TATCTCCATTCAAGCAGCGAGACGAAGTTGCTTGAGAAAGTGCAACATGAGTTGTTGTCT
Eggplant_Cull_Cds	TATCTCCATTCTAGCAGTGAGACAAAGTTGCTTGAGAAAGTGCAACATGAGTTGTTATCT
Pepper_Cull_Cds	TATCTTCATTTAAGCAGTGAGACAAAGTTGCTTGAGAAAGTGCAACATGAGTTGTTGTCT
Lettuce_Cull_Cds	TATCTTCATTCCAGCAGTGAGCCAAAGCTTCTTGAGAAAGTTCAAAAATGAGTTATTGTCT
Chicory_Cull_Cds	TATCTTCATTCCAGCAGTGAACCAAAGCTTCTTGAGAAAGTTCAAACAGAGTTATTATCT
Endive_Cull_Cds	TATCTTCATTCAAGTAGTGAACCAAAGCTTCTTGAGAAAGTTCAAACAGAGTTATTATCT
Carrot_Cull_Cds	TACCTTCATTCTAGTAGTGAACCCAAGTTGCTTGAGAAAGTTCAACATGAGTTACTATCA
Celery_Cull_Cds	TACCTACATTTTAGTAGCGAGCCAAAGTTGCTTGAGAAAGTGCAACATGAGCTGCTATCT
Brassica_Cull_Cds	GTGTATGCAAATCAGCTTCTAGAAAAAGAGCATTCAGGGTGCCGTGCATTGCTGAGAGAT
Radish_Cull_Cds	GTCTATGCAAATCAGCTTCTTGAAAAGGAGCACTCAGGGTGCCGTGCATTGCTGAGAGAC
Beet_Cull_Cds	GTTTATGAAAGCCAATTGCTTGAGAAGGAGAATTCGGGATGTCGTGCATTACTGAAAGAT
Spinach_Cull_Cds	GTTTACGAAAATCAGTTGCTTGAGAAGGAGAATTCGGATGTCGTGCATTGTTGAAAGAT
Leek_Cull_Cds	GTATATGCAAGTCAACTTCTCGAGAAAAGAACATTCCGGATGTCATGCATTGCTTCGCGAT
Squash_Cull_Cds	GTTTATGCTACTCAACTGCTGGAGAAAAGAGCATTCAGGATGCCATGCATTGCTTAGAGAT
WaterMelon_Cull_Cds	GTGTATGCTACTCAACTGCTGGAAAAAGAGCATTCAGGATGCCATGCATTGCTTAGAGAT
CuCumber_Cull_Cds	GTTTATGCTACTCAACTGCTGGAAAAAGAGCATTCAGGATGCCATGCATTGCTTAGAGAT
Melon_Cull_Cds	GTGTATGCTACTCAACTGCTGGAAAAAGAGCATTCAGGATGCCATGCATTGCTTAGAGAT
Tomato_Cull_Cds	GTGTATGCCACTCAACTTCTTGAGAAGGAGCACTCTGGATGCCATGCGTTACTGAGAGAT
Eggplant_Cull_Cds	GTGTATGCCAATCAACTTCTTGAGAAGGAGCACTCTGGATGCCATGCATTACTTAGAGAT
Pepper_Cull_Cds	GTGTATGCCACTCAACTTCTTGAGAAGGAGCACTCTGGGTGCCATGCGTTACTAAGAGAT
Lettuce_Cull_Cds	GTTTATGCAACTCAATTGCTTGAGAAAGAGCACTCAGGTTGTCATGCATTGCTCAGGGAT
Chicory_Cull_Cds	GTTTATGCAACTCAATTGCTTGAAAAGGAGCACTCCGGTTGTCATGCATTACTTAGGGAT
Endive_Cull_Cds	GTTTATGCAACTCAATTGCTCGAAAAGGAACACTCAGGTTGTCATGCATTACTTAGAGAT
Carrot_Cull_Cds	CACTATGCAACTCAGCTGCTTGAGAAAAGAACACTCTGGGTGTCATGCATTGCTTAGGGAT
Celery_Cull_Cds	GTGTATGCAACCCAATTACTCGAGAAGGAACATTCTGGTTGTCATGCATTGCTTAGGGAT

Fig. 69-8

Brassica_Cull_Cds	GACAAGGTTGATGACCTCTCCAGGATGTACAGGCTTTATCATAAAATTGTGAAAGGTTTG
Radish_Cull_Cds	GACAAGGTTGACGATCTCTCCAGGATGTACAGGCTCTATCATAAAATTGCTAAAGGTTTA
Beet_Cull_Cds	GACAAGGTGGATGATCTTTCCAGGATGTACAGGCTTTACAGTAAGGTTACCAAAGGATTG
Spinach_Cull_Cds	GACAAGGTGGAAGATCTTTCCAGGATGTACAGGCTTTATAGCAAGGTTACCAAAGGGTTG
Leek_Cull_Cds	GACAAGGTGGGAGATCTTTACGCATGTATCGGCTGTTCTGTAGAATTACACGTGGTTTG
Squash_Cull_Cds	GACAAGGTGGAAGATTTGTCAAGGATGTTCCGTCTCTTCTCCAAAATACCCAAGGGATTG
WaterMelon_Cull_Cds	GACAAGGTGGAAGATTTGTCAAGGATGTTCCGCCTCTTCTCCAAAATACCCAAGGGATTG
CuCumber_Cull_Cds	GACAAGGTGGAAGATTTGTCAAGGATGTTCCGTCTATTCTCCAAAATACCGAAGGGACTG
Melon_Cull_Cds	GACAAGGTGGAAGATTTGTCAAGGATGTTCCGTCTCTTCTCCAAAATACCGAAGGGATTG
Tomato_Cull_Cds	GATAAGGTTGAAGATTTATCAAGGATGTATAGGCTCTTTTCTAAGATTTCTCGAGGCTTA
Eggplant_Cull_Cds	GATAAGGTCGATGATTTATCAAGGATGTATAGACTCTTTTCTAAGATTCCTCGAGGCTTA
Pepper_Cull_Cds	GATAAGGTTGAAGATTTATCAAGGATGTATAGGCTCTTTTCTAAGATTCCTCGAGGCTTA
Lettuce_Cull_Cds	GACAAGGTTGATGATTTATCAAGAATGTACAGACTCTTTTCAAAGATACCAAAGGATTG
Chicory_Cull_Cds	GACAAGGTTGATGATTTATCAAGAATGTACAGACTCTTTTCAAAGATACAAAAGGGCTG
Endive_Cull_Cds	GACAAGGTTGATGATTTATCAAGAATGTACAGACTCTTTTCAAAGATACAAAAGGACTG
Carrot_Cull_Cds	GACAAGGTGGCAGATTTATCAAGGATGTATAGGCTCTTCTCTAAAATACCTCGAGGCCTA
Celery_Cull_Cds	GACAAGGTGGATGATTTGTCTAGGATGTACAGACTCTTCTCGAAAATACCTAAAGGCCTG
Brassica_Cull_Cds	GAACCTGTTGCAAACATATTTAAGCAGCATGTCACAGCAGAGGGTAACGCACTTGTCCAA
Radish_Cull_Cds	GAACCTGTTGCAAACATATTTAAGCAGCATGTCACAGCCGAGGGTAACGCACTTGTCCAA
Beet_Cull_Cds	GAACCCATTGGCAGTATCTTCAAACAGCATATAACTGATGAAGGAACAGCCTTAGTGCA
Spinach_Cull_Cds	GAACCCATTGGCAGTATCTTCAAACAGCATATAACCGATGAAGGAACAGCCCTGGTGCA
Leek_Cull_Cds	GACCCTGTGTCTCAAATATTTAAGCAGCATGTGACTGCAGAAGGTACTGCTTTGGTCAAA
Squash_Cull_Cds	GACCCAGTTTCCAACATATTTAAGCAGCATGTCACTGCTGAAGGAACAGCATTAGTCAAA
WaterMelon_Cull_Cds	GACCCAGTTTCCAACATATTTAAGCAGCATGTCACTGCTGAAGGAACAGCATTGGTCAAA
CuCumber_Cull_Cds	GATCCAGTTTCCAACATATTTAAGCAGCATGTAAGTCTGAAGGAACAGCACTGGTCAAA
Melon_Cull_Cds	GACCCAGTTTCCAACATATTTAAGCAGCATGTAAGTCTGAAGGAACAGCACTGGTCAAA
Tomato_Cull_Cds	GACCCTGTGGCCAATATTTTTAAGCAGCATGTTACTGCTGAAGGTACAGCTTTGGTAAAA
Eggplant_Cull_Cds	GAGCCTGTGGCTAATATATTTAAGCAGCATGTTACTGCTGAAGGTACAGCTTTGGTGAAA
Pepper_Cull_Cds	GACCCTGTGGCTAATATATTTAAGCAGCATGTTACTGCTGAAGGTACAGCTTTGGTCAAA
Lettuce_Cull_Cds	GATCCTGTTTCTAGTATGTTTAAAGCAGCATGTCACTGCTGAAGGCACAACATTGGTTAAA
Chicory_Cull_Cds	GATCCTGTTTCTAGTATGTTTAAAGCAGCATGTCACTGCTGAAGGCACAACATTGGTTAAA
Endive_Cull_Cds	GATCCTGTTTCCAGTATGTTTAAAGCAGCATGTCACTGCTGAAGGCACAACATTAGTAAAA
Carrot_Cull_Cds	GATCCCGTGTCTAATATTTTTCAAGCAGCATGTTACTGCTGAAGGTACAGCTTTGGTCAAA
Celery_Cull_Cds	GATCCAGTTTCTTATATTTTTAAGCAGCATGTTACAAATGAAGGGATGGCATTGGTTAAA

Fig. 69-9

Brassica_Cull_Cds	CAGGCCGAAGACACGGCCACTAATCATGCTGCA-----AATACTGCTAGCGTGCAG
Radish_Cull_Cds	CAGGCCGAAGACACAGCCACTAATCAGGCTGCA-----AATACTGCTAGCGTGCAG
Beet_Cull_Cds	CAGGCCGAAGATGCTGCTATCAGCAAGGCTGAA-----AATACT-GGTGGTTCACAT
Spinach_Cull_Cds	CAGGCCGAAGACGCTGCAATTAGCAAGGCTGAA----AATGCTGGCGGTGGTTCACAT
Leek_Cull_Cds	CATGCCGAAGATGCTGCAAGTAACAAGAAGGCCGAGAAAAAAGACATTGTTGGTTTGCAA
Squash_Cull_Cds	CAGGCAGAAGACGCTGCAAGTAACAAGAAGGCCGAGAAAAAGGACATCGTTGGTCTGCAA
WaterMelon_Cull_Cds	CAGGCAGAAGATGCTGCAAGTAACAAGAAGGCCGAGAAAAAGGACATAGTTGGTCTGCAG
CuCumber_Cull_Cds	CAGGCAGAAGATGCTGCAAGTAACAAGAAGGCTGAGAAAAAGGACATAGTTGGTCTGCAG
Melon_Cull_Cds	CAGGCAGAAGATGCTGCAAGTAACAAGAAGGCCGAGAAAAAGGACATAGTTGGTCTGCAG
Tomato_Cull_Cds	CAGGCTGAAGATGCTGCTAGCAATAAAAAGGCAGAGAAGAGAGATGTGGTTGGTTTGCA
Eggplant_Cull_Cds	CAGGCTGAAGATGCTGCTAGCAACAAAAAGGCAGAGAAGAGAGATGTGGTTGGTTTGCA
Pepper_Cull_Cds	CAGGCTGAAGATGCTGCTAGCAACAAAAAGGCAGAGAAAAAGAGATGTGGTTGGTTTGCA
Lettuce_Cull_Cds	CAAGCAGAAGATGCAGCAAGTACCAAGAAGGCTGAAAAGAGAGATGTGGTTGGGTGCA
Chicory_Cull_Cds	CAGGCAGAAGATGCAGCAAGTACTAAGAAGGCTGAAAAGAGAGACGTGGTTGGCTTACAA
Endive_Cull_Cds	CAAGCAGAAGATGCAGCAAGTACTAAGAAGGCTGAAAAGAGAGACGTGGTTGGCTTACAG
Carrot_Cull_Cds	CAAGCAGAAGATGCAGCTAGCAACAAGAAGGCAGAGAAGAGAGATGTAGTAGGTTTACAA
Celery_Cull_Cds	CAAGCAGAAGATGCAGCAAGCAACAAGAAGGCAGAAAAAGAGAGACGTGGTTAGTTTACAG
Brassica_Cull_Cds	GAACAGGTTCTTATCAGAAAAGTGATTGAACTACATGATAAATACATGGTCTATGTTGTT
Radish_Cull_Cds	GAACAGGTTCTCATCAGAAAAGTGATTGAGCTACATGATAAGTACATGGTCTATGTCGTG
Beet_Cull_Cds	GAGCAGGTCTTCGTCAGGAAAGTAATAGAGTTGCATGACAAATTCATGACTTATGTCACC
Spinach_Cull_Cds	GAGCAGGTCTTCGTCAGGAAAGTGATTGAGTTGCATGACAAATTTATGACCTATGTTACA
Leek_Cull_Cds	GAGCAGGTCTTCGTTAGGAAAGTAATTGAGCTGCATGATAAATACTTGGCCTATGTGACT
Squash_Cull_Cds	GAACAGGTTTTTGTTAGAAAAGTGATTGAGCTTCACGACAAGTACTTGGCATATGTGAAT
WaterMelon_Cull_Cds	GAACAGGTTTTTGTAAAGAAAAGTGATTGAGCTTCACGACAAGTACTTGGCTTACGTGAAT
CuCumber_Cull_Cds	GAACAGGTTTTTGTAAAGAAAAGTGATTGAGCTTCACGACAAGTACTTGGCTTATGTGAAT
Melon_Cull_Cds	GAACAGGTTTTTGTAAAGAAAAGTGATTGAGCTTCACGACAAGTACTTGGCTTATGTGAAT
Tomato_Cull_Cds	GAACAGGTTTTTGTTCGGAAAAGTGATTGAACTTCATGATAAATATTTGGCTTATGTGAAT
Eggplant_Cull_Cds	GAACAGGTTTTTGTTCGGAAAAGTGATTGAGCTTCATGATAAATATTTGGCGTATGTGAAT
Pepper_Cull_Cds	GAACAGATTTTTGTTCGGAAAAGTGATTGAGCTTCATGATAAGTATATGGCATATGTGAAT
Lettuce_Cull_Cds	GAACAGGTTTTTGTTAGAAAAGTTATTGAGCTCCATGACAAGTACCTGGCATATGTAAAT
Chicory_Cull_Cds	GAACAGGTTTTTGTTAGAAAAGTTATCGAGCTTCATGACAAGTACCTTGCATATGTAAAT
Endive_Cull_Cds	GAACAGGTTTTTGTTAGAAAAGTAATCGAGCTTCATGACAAGTACCTCGCATATGTAAAC
Carrot_Cull_Cds	GAACAGGTTTTTGTGAGGAAAATAATTGAATTGCATGACAAATACCTTACATACGTAAAT
Celery_Cull_Cds	GAGCAGGTTTTTGTTAGAAAAATTATTGAATTACATGACAAATACCTCGCCTATGTGAAT

Fig. 69-10

Brassica_Cull_Cds	GAGTGTTTCCAGAACCACACCCTCTTCCACAAGGCATTGAAAAGAGGCATTTGAGATATTC
Radish_Cull_Cds	GAGTGCTTCCAGAACCACACCCTCTTCCACAAGGCTCTGAAAAGAGGCATTTGAGATATTC
Beet_Cull_Cds	GATTGCTTCAACAGCCATACCATATTTCACAAGGCTCTTAAGGAGGCTTTTGAGGTATTT
Spinach_Cull_Cds	GATTGCTTCAACAGCCATACCATCTTTCACAAGGCTCTCAAGGAAGCTTTTGAGGTATTC
Leek_Cull_Cds	GACTGCTTTCAAAATCACTCTCTATTTCACAAGGCACTTAAAGAGGCATTTCGAGGTATTC
Squash_Cull_Cds	GATTGTTTCCAAAACCACACACTTTTTCACAAGGCTCTCAAGGAAGCTTTTGAAGTCTTT
WaterMelon_Cull_Cds	GATTGTTTCCAAAACCACACACTTTTTCACAAGGCTCTCAAGGAAGCTTTTGAAGTCTTT
CuCumber_Cull_Cds	GATTGTTTCCAAAACCACACACTTTTCCATAAGGCTCTCAAGGAAGCTTTTGAAGTATTT
Melon_Cull_Cds	GATTGTTTCCAAAACCACACACTTTTCCATAAGGCTCTCAAGGAAGCTTTTGAAGTCTTT
Tomato_Cull_Cds	AAGTGTTTCCAAAACCACACACTTTTTCACAAGGCGCTTAAAGAAGCTTTTGAGCTTTTC
Eggplant_Cull_Cds	AAGTGTTTCCAAAACCACACACTTTTTCACAAGGCACTTAAAGAAGCTTTTGAAGTCTTT
Pepper_Cull_Cds	AAGTGTTTCCAAAACCACACACTTTTTCACAAGGCGCTTAAAGAAGCTTTTGAAGTCTTT
Lettuce_Cull_Cds	GACTGTTTTCATGAACCATACTCTTTTCCACAAGGCTCTTAAAGAGGCATTTGAAATATTC
Chicory_Cull_Cds	GACTGTTTTATGAATCATACCCTGTTTCACAAGGCTCTTAAAGAGGCATTTGAAATATTC
Endive_Cull_Cds	GACTGTTTTATGAATCACACATTGTTCCACAAGGCTCTTAAAGAGGCATTTGAAATATTC
Carrot_Cull_Cds	GACTGTTTTACAAACCACACTCTCTTCCATAAGGCGCTTAAAGAGGCTTTTGAAATCTTC
Celery_Cull_Cds	GACTGCTTTACAAACCATACTCTTTTCCATAAGGCTCTCAAGGAGGCTTTTGAAATCTTT
Brassica_Cull_Cds	TGTAACAAAACAGTCGCTGGAAGTTCTAGTGCTGAATTGCTTGCAACATTTTGCGACAAT
Radish_Cull_Cds	TGTAACAAAACAGTCGCTGGAAGTTCAAGTGCAGAACTGCTTGCAACATTCTGCGACAAC
Beet_Cull_Cds	TTGAACAAGGGTGTTGCTGGTAGCTCAAGTGCTGAGTTGCTAGCTACATTCTGTGATAAC
Spinach_Cull_Cds	TTAAACAAGGGTGTTGCTGGTAGTTCAAGTGCTGAACTTCTAGCTTCATTTTGTGATAAT
Leek_Cull_Cds	TGCAATAAAGGTGTTGCAGGTAGCTCAAGCGCTGAACTTCTGGCTGCTTTTTGTGACAAT
Squash_Cull_Cds	TGCAATAAAGGTGTTGCTGGAAGTTCTAGTGCAAGAACTTCTTGCTACCTTTTGTGATAAC
WaterMelon_Cull_Cds	TGCAATAAAGGTGTTGCTGGAAGTTCTAGTGCAAGAACTTCTTGCTACCTTTTGTGATAAC
CuCumber_Cull_Cds	TGCAATAAAGGTGTTGCTGGAAGTTCTAGTGCAAGAACTTCTTGCTACCTTTTGTGATAAC
Melon_Cull_Cds	TGCAATAAAGGTGTTGCTGGAAGTTCTAGTGCAAGAACTTCTTGCTACCTTCTGCGATAAC
Tomato_Cull_Cds	TGCAACAAGGGTGTTGCTGGTAGCTCAAGCGCTGAACTTCTTGCCACCTTCTGTGACAAC
Eggplant_Cull_Cds	TGCAACAAGGGTGTTGCTGGTAGCTCAAATGCTGAACTTCTTGCCACATTCTGCGACAAC
Pepper_Cull_Cds	TGCAACAAGGGTGTTGCTGGTAGCTCAAGTGCTGAACTTCTTGCCACATTCTGCGACAAT
Lettuce_Cull_Cds	TGCAACAAGGGTGTTGCTGGAAGTTCAAGTGCAAGAGTTACTTGCCACATTTTGTGATAAT
Chicory_Cull_Cds	TGCAACAAGGGCGTTGCTGGAAGTTCAAGTGCAAGAACTTCTTGCTACATTTTGTGATAAT
Endive_Cull_Cds	TGCAACAAGGGCGTTGCTGGAAGTTCAAGTGCAAGAACTTCTTGCCACATTTTGTGATAAT
Carrot_Cull_Cds	TGCAATAAAGGTGTCTCTGGAAGCTCTAGTGCAAGAACTTCTTGCCACATTCTGTGATAAT
Celery_Cull_Cds	TGCAACAAGGGTGTTGCTGGAAGCTCTAATGCTGAACTACTTGCTACTTTCTGTGATAAC

Fig. 69-11

Brassica_Cull_Cds	ATTCTCAAGAAGGGGGGAAGTGAAAAGCTGAGCGATGAAGCTATTGAAGATACCCTTGAG
Radish_Cull_Cds	ATCCTCAAGAAGGGGGGTAGTGAGAAGCTGAGTGACGAAGCTATTGAAGATACGCTTGAG
Beet_Cull_Cds	ATTCTCAAGAAAGGTGGGAGCGAAAACTAAGCGATGAGGCTATTGAGGATTCACTTGAG
Spinach_Cull_Cds	ATTCTCAAGAAAGGTGGTAGTGAAAAATTAAGTGATGAGGCTATTGAGGATTCACTGGAG
Leek_Cull_Cds	ATATTGAAGAAGGGTGGAAGCGAGAACTAAGCGATGAGGCCATAGAGGATACTCTTGAG
Squash_Cull_Cds	ATCCTTAAGAAAGGTGGGAGTGAGAAGTTGAGTGATGAAGCAATTGAGGAAACACTCGAG
WaterMelon_Cull_Cds	ATCCTTAAGAAAGGTGGGAGCGAGAAGTTGAGTGATGAAGCAATTGAGGAGACACTTGAG
CuCumber_Cull_Cds	ATCCTTAAGAAAGGTGGGAGTGAGAAGTTGAGTGATGAAGCAATCGAGGAGACACTTGAG
Melon_Cull_Cds	ATCCTTAAGAAAGGTGGGAGTGAGAAGTTGAGTGATGAAGCAATCGAAGAGACACTTGAG
Tomato_Cull_Cds	ATTCTCAAAAAAGGCGGGAGTGAGAAATTGAGTGATGAAGCTATTGAAGAAACGTGGAA
Eggplant_Cull_Cds	ATTCTCAAAAAAGGCGGGAGTGAAAAATTGAGTGATGAAGCCATTGAAGAGACGCTGGAG
Pepper_Cull_Cds	ATTCTCAAGAAAGGCGGGAGTGAGAAATTGAGTGATGAAGCCATTGAAGAGACGCTGGAG
Lettuce_Cull_Cds	ATTCTTAAAAAAGGTGGAAGTGAGAACTGAGCGATGAAGCCATTGAGGACACCCTTGAG
Chicory_Cull_Cds	ATTCTTAAAAAAGGTGGAAGTGAAAAATTGAGTGATGAAGCCATTGAGGACACACTTGAG
Endive_Cull_Cds	ATTCTTAAAAAAGGTGGAAGTGAAAAATTGAGTGATGAAGCCATTGAAGACACACTTGAG
Carrot_Cull_Cds	ATTCTCAAGAAAGGTGGAAGCGAGAAGTTAAGTGATGAAGCCATTGAGGAAACACTTGAG
Celery_Cull_Cds	ATCCTCAAAAAAGGTGGGAGTGAGAAATTAAGTGATGAGGCTATTGAAGAAACACTTGAG
Brassica_Cull_Cds	AAGGTGGTCAAATTGCTTGCTTATATAAGTGACAAGGATCTTTTCGCCGAGTTCTACAGG
Radish_Cull_Cds	AAGGTTGTCAAATTGCTTGCTTATATAAGCGACAAGGATCTTTTCGCCGAGTTCTACAGG
Beet_Cull_Cds	AAGGTGGTGAAGCTTCTGGCCTATGTCAGTGATAAAGACCTGTTTGCTGAATTTTACAGA
Spinach_Cull_Cds	AAGGTGGTGAAGCTTCTCGCATATGTCAGTGATAAAGACCTGTTTGCTGAATTTTACAGA
Leek_Cull_Cds	AAGGTTGTAAAACTATTGGCATATATTAGCGATAAAGATCTGTTTGCTGAATTTTACAGG
Squash_Cull_Cds	AAGGTCGTGAAATTGCTGGCGTATATCTGCGACAAAGATCTGTTTGCTGAATTCTATAGA
WaterMelon_Cull_Cds	AAGGTCGTGAAGTTGCTGGCATACATCTGCGACAAAGATCTGTTTGCTGAATTCTATAGA
CuCumber_Cull_Cds	AAGGTTGTGAAGTTGTTGGCATACATTTGCGACAAAGATCTGTTTGCTGAATTCTATAGA
Melon_Cull_Cds	AAGGTTGTGAAGTTGTTGGCATACATCTGCGACAAAGATCTGTTTGCTGAATTCTATAGA
Tomato_Cull_Cds	AAGGTGGTAAAGCTACTAGCTTATATTAGTGATAAGGACTTGTTTGCAGAATTCTATAGG
Eggplant_Cull_Cds	AAGGTGGTAAAGCTGCTGGCTTATATTAGTGATAAGGACTTGTTTGCAGAATTCTATAGG
Pepper_Cull_Cds	AAGGTTGTAAAGCTGCTAGCATATATTAGTGACAAGGACTTGTTTGCAGAATTCTATAGG
Lettuce_Cull_Cds	AAGGTAGTAAAGTTGCTTGCTTACATCAGTGATAAAGATCTATTTGCTGAATTTTACAGG
Chicory_Cull_Cds	AAGGTGGTAAAGTTGCTTGCTTACATCAGCGATAAAGATCTATTTGCAGAGTTTATAGG
Endive_Cull_Cds	AAGGTAGTAAAGTTGCTTGCTTACATCAGCGATAAAGATCTATTTGCAGAGTTTATAGG
Carrot_Cull_Cds	AAGGTTGTAAAGTTGCTTGCTTATATAAGTGACAAGACTTATTTGCTGAATTTTATAGG
Celery_Cull_Cds	AAGGTAGTAAAATTGTTAGCTTACATTAGCGATAAAGACTTGTTGCTGAATTTTACAGA

Fig. 69-12

Brassica_Cull_Cds	AAGAAGCTGGCCCGTAGGCTCTTATTTGATCGCAGTGCTAATGATGATCATGAGAGAAGT
Radish_Cull_Cds	AAGAAGCTGGCACGTAGGCTCTTATTTGATCGCAGTGCGAATGATGATCATGAGAGAAGC
Beet_Cull_Cds	AAGAAGCTCTCTCGCCGGCTACTCTTTGACAAGAGTGCTAATGATGATCATGAAAGAAGT
Spinach_Cull_Cds	AAGAAGCTCTCTCGCCGGCTACTCTTTGACAAAAGTGCTAATGATGATCATGAGAGGAGT
Leek_Cull_Cds	AAGAAGCTTGCACGAAGATTACTCTTTGACAAAAGTGCTAATGATGACCATGAGAGGAGC
Squash_Cull_Cds	AAAAAACTCGCCCGAAGGCTTCTCTTCGACAAGAGTGCGAATGATGACCACGAGAGAAGT
WaterMelon_Cull_Cds	AAAAAACTTGCCCGAAGGCTTCTCTTTGACAAGAGTGCCAACGATGACCATGAGAGAAGT
CuCumber_Cull_Cds	AAAAAACTTGCCCGAAGGCTTCTCTTTGACAAGAGCGCGAACGATGACCACGAGAGAAGT
Melon_Cull_Cds	AAAAAACTTGCCCGAAGGCTTCTCTTTGATAAGAGCGCCAACGATGACCACGAGAGAAGT
Tomato_Cull_Cds	AAAAAGCTAGCCCGGCGGTTGTTATTTGATAAGAGTGCCAATGATGAACATGAAAGAAGT
Eggplant_Cull_Cds	AAAAAGCTCGCCCGGCGGTTGTTATTTGATAAGAGTGCCAATGATGAACATGAGAGAAGT
Pepper_Cull_Cds	AAAAAGCTAGCCCGGCGGTTGTTATTTGATAAGAGTGCCAATGATGAACACGAGAGAAGT
Lettuce_Cull_Cds	AAAAAACTTGCTAGGAGGCTTTTGTGTTGACAAGAGTGCAAACGATGAGCATGAGAGAAGT
Chicory_Cull_Cds	AAAAAACTGGCTAGACGGCTTTTATTTGACAAAAGTGCAAATGATGAGCACGAAAGAAGT
Endive_Cull_Cds	AAAAAACTGGCTAGAAGGCTTTTATTTGACAAAAGTGCAAATGATGAGCATGAAAGAAGT
Carrot_Cull_Cds	AAAAAGCTTGCACGGCGTCTCTTATTCGACAAGAGTGCCAATGATGAGCATGAGAGAAGT
Celery_Cull_Cds	AAAAAGCTTGCACGGAGACTTCTCTTTGATAAGAGTGCAAATGACGAGCATGAACGAAGT
Brassica_Cull_Cds	ATCCTGACAAAAGCTCAAGCAACAATGTGGTGGGCAGTTTACTTCGAAGATGGAGGGGCATG
Radish_Cull_Cds	ATCCTTACAAAAGCTCAAGCAACAATGTGGTGGGCAGTTCACTTCTAAGATGGAGGGGCATG
Beet_Cull_Cds	ATTTTAACCAAATTGAAGCAGCAGTGTGGCGGACAATTCACATCAAAGATGGAGGGGGATG
Spinach_Cull_Cds	ATTTTAACAAAATTGAAGCAGCAGTGTGGGGGACAGTTCACATCAAAGATGGAGGGGGATG
Leek_Cull_Cds	ATCCTTACAAAAGCTGAAACAGCAATGTGGAGGGCAGTTCACCTCTAAAATGGAAGGCATG
Squash_Cull_Cds	ATACTGACGAAATTGAAGCAACAATGTGGTGGTCAGTTTACCTCTAAGATGGAGGGGAATG
WaterMelon_Cull_Cds	ATATTGACCAAATTGAAGCAACAATGTGGTGGCCAGTTCACCTCTAAGATGGAGGGGGATG
CuCumber_Cull_Cds	ATATTGACCAAATTGAAGCAACAATGTGGTGGTCAGTTCACTTCTAAGATGGAGGGGAATG
Melon_Cull_Cds	ATATTGACCAAATTGAAGCAACAATGTGGTGGTCAGTTCACTTCTAAGATGGAGGGGAATG
Tomato_Cull_Cds	ATCCTAACAAAAGTTGAAGCAGCAGTGTGGGGGGCAGTTCACATCAAAGATGGAGGGGAATG
Eggplant_Cull_Cds	ATCCTAACAAAAGTTGAAGCAGCAGTGTGGAGGTCAGTTCACATCAAAGATGGAGGGGAATG
Pepper_Cull_Cds	ATCCTTACAAAAGTTGAAGCAGCAGTGTGGGGGCCAGTTCACATCAAAGATGGAGGGGAATG
Lettuce_Cull_Cds	ATTCTCACAAAAGCTGAAGCAACAGTGTGGTGGTCAGTTCACATCAAAGATGGAAGGGATG
Chicory_Cull_Cds	ATTTTGACAAAATTGAAACAACAATGTGGCGGTCAATTTACATCAAAAATGGAAGGAATG
Endive_Cull_Cds	ATTTTAACAAAAGTTGAAGCAACAATGTGGTGGTCAGTTTACATCAAAGATGGAAGGAATG
Carrot_Cull_Cds	ATATTGACTAAGCTGAAGCAACAATGTGGGGGTCAATTTACATCAAAGATGGAAGGAATG
Celery_Cull_Cds	ATTTTGACTAAACTAAAGCAACAGTGCGGTGGTCAGTTCACATCGAAAATGGAGGGGGATG

Fig. 69-13

Brassica_Cull_Cds	GTGACTGATTTGACATTGGCAAGGGAAAACCAAACAGCTTCGAGGAGTATCTTGGCAAT
Radish_Cull_Cds	GTAACGGACTTGACATTGGCAAGAGAGAACCAAACCAGTTTCGAGGAGTATCTAGGCAAT
Beet_Cull_Cds	GTGACAGACTTGACCTTGGCGAGGGAGAATCAAATAATTTTGAGGAATATCTTAGTCAG
Spinach_Cull_Cds	GTGACAGACTTGACATTGGCGAGGGAGAATCAAATAATTTTGAGGAATATCTTGGACAA
Leek_Cull_Cds	GTAACCGATCTGACACTTGACGAGAAAATCAATCAAGTTTTGACGATTACCTTAGCAGC
Squash_Cull_Cds	GTCACGGATTTGACACTGGCAAGGGAGAACCAAAGTAGTTTTGAGGAATATCTGAGCAAT
WaterMelon_Cull_Cds	GTCACTGATTTGACTTTGGCAAGGGAGAACCAAAGTAGTTTCGAGGAGTATCTGAGCAAT
CuCumber_Cull_Cds	GTTACTGATTTGACTTTGGCAAGGGAGAACCAAAGTAGTTTTGAGGAGTATCTGAGCAAT
Melon_Cull_Cds	GTTACTGATTTGACTTTGGCAAGGGAGAACCAAAGTAGTTTCGAAGAGTATCTGAGCAAT
Tomato_Cull_Cds	GTCACAGATTTGACATTGGCAAGGGAAAATCAAGCCAGCTTCGAGGAGTATTTGAGCAAT
Eggplant_Cull_Cds	GTCACAGATTTGACATTGGCAAGGGAAAATCAAGCCAGCTTTGAGGAGTATTTGAGCAAT
Pepper_Cull_Cds	GTGACAGATTTGACATTGGCAAGGGAAAATCAAGCCAGCTTTGAGGAGTATTTGAGCAAC
Lettuce_Cull_Cds	GTTACAGATTTGACATTGGCAAAGGAAAACCAATCCCATTTTGAAGAGTATTTGAACAAT
Chicory_Cull_Cds	GTTACAGATTTGACATTGGCAAAGGAAAATCAATCACATTTTGAGGAGTATTTGAATAAT
Endive_Cull_Cds	GTTACAGATTTAACAAGTGGCAAAGGAAAATCAATCACATTTTGAGGAGTATTTGAATAAT
Carrot_Cull_Cds	GTCACTGACTTGACGTTGGCAAAGGAAAATCAGTCCAAGTTCGAGGAGTACCTCAATAAT
Celery_Cull_Cds	GTCACAGATTTGACTTTGGCTAAAGAAAATCAATCCAGCTTTGAGGAGTATCTGGGAAAT
Brassica_Cull_Cds	AACCCCGCTGCAAACCCAGGGATTGATTTGACCGTAACTGTTCTTACCACTGGTTTTTGG
Radish_Cull_Cds	AACCCCGCTGCAAACCCAGGGATTGATTTGACCGTCACTGTTCTTACCACTGGTTTCTGG
Beet_Cull_Cds	AATCCAGATGCCAGTCCTGGTCTTGATTTGACTGTGACTGTTCTGACAAGTGGGTTCTGG
Spinach_Cull_Cds	AATACAGATGCCAGTCCTGGTCTTGATTTGACTGTGACAGTTTTGACCACTGGGTTCTGG
Leek_Cull_Cds	AATCCTAAAGCAAATTCTGGAATTGACTTGACTGTGTTACAGTCTTAACAAGTGGCTTCTGG
Squash_Cull_Cds	AATCCACAAGCTAGTCCTGGAATCGACTTGACCGTTACCGTTTTGACCACTGGTTTTTGG
WaterMelon_Cull_Cds	AATCCACAAGCTAGTCCTGGAATCGACTTGACTGTCACTGTTTTGACTACTGGCTTTTGG
CuCumber_Cull_Cds	AATCCACAAGCGAGTCCTGGCATCGACCTGACTGTGTTACTGTTTTAACTACTGGATTTTGG
Melon_Cull_Cds	AATCCACAAGCTAGTCCTGGAATCGACCTAACTGTTACTGTTTTGACTACTGGATTTTGG
Tomato_Cull_Cds	AATCCAATAGCAAATCCAGGAATTGACTTGACGGTGACTGTCTTGACTACTGGCTTCTGG
Eggplant_Cull_Cds	AATCCAACAGCAAATCCAGGAATTGACTTGACGGTGACTGTCTTGACTACTGGCTTCTGG
Pepper_Cull_Cds	AATCCAGCAGCAAATCCAGGAATTGACTTGACGGTGACTGTCTTGACTACTGGCTTCTGG
Lettuce_Cull_Cds	AATCCCAATGTGAGCCCTGGGAATTGACTTGACTGTCACTGTGTTGACTACCGGCTTCTGG
Chicory_Cull_Cds	AATCCCAATGTTAGCCCTGGCATTGACTTGACCGTGACTGTGTTGACCACTGGTTTTTGG
Endive_Cull_Cds	AATCCCAATGTTAGCCCTGGCATTGACTTGACCGTGACTGTGTTGACCACGGGATTTTGG
Carrot_Cull_Cds	AATTCAAACGTAAATCCTGGAATTGACTTGACAGTTACTGTTCTAACCAGTGGGTTTTGG
Celery_Cull_Cds	AATGCCAATGTGAATCCTGGCATTGACTTGACGGTTACTGTTCTGACCACTGGCTTCTGG

Fig. 69-14

Brassica_Cull_Cds	CCAAGTTACAAATCATTTGACATAAAATCTACCCGCTGAAAATGGTCAAGTGTGTTGAAGTT
Radish_Cull_Cds	CCAAGTTACAAATCATTCGACATAAAATCTACCAAGTGAAAATGGTCAAGTGTGTTGAAGTT
Beet_Cull_Cds	CCAAGTTACAAATCTTCCGATCTTAACCTTCCCGCTGAGATGGTGAGGTGTGTTGAAGTT
Spinach_Cull_Cds	CCAAGTTACAAATCTTCTGATCTTAACCTTCCTGCTGAGATGGTGAGGTGTGTTGAAGTT
Leek_Cull_Cds	CCCAGTTACAAGTCTTTTGATCTCAATCTTCCTGATGAGATGGTAAAATGCGTTGAAATT
Squash_Cull_Cds	CCAAGCTACAAGTCTTTTGACCTCAACCTGCCGGCGGAGATGGTAAAGTGTGTTGAAGTT
WaterMelon_Cull_Cds	CCAAGCTACAAGTCTTTTGACCTCAACCTGCCGGCAGAGATGGTAAAGTGTGTTGAAGTT
CuCumber_Cull_Cds	CCAAGCTACAAGTCTTTTGACCTCAACCTGCCGGCAGAGATGGTAAAGTGTGTTGAAGTT
Melon_Cull_Cds	CCAAGCTACAAGTCTTTTGACCTCAACCTGCCGGCGGAGATGGTAAAGTGTGTTGAAGTT
Tomato_Cull_Cds	CCTAGCTACAAGTCTTTTGATCTCAACCTCCCAGCAGAAAATGGTTAGGTGCGTTGAAGTA
Eggplant_Cull_Cds	CCTAGCTACAAGTCTTTTGATCTCAACCTCCCAGCAGAAAATGGTTAGGTGTGTTGAAGTA
Pepper_Cull_Cds	CCTAGCTACAAGTCTTTTGATCTCAACCTCCCAGCAGAAAATGGTTAGGTGCGTTGAAGTA
Lettuce_Cull_Cds	CCCAGCTACAAATCTTTTGACCTAAATCTCCCTGCCGAAAATGGTTAAATGCGTTGAAGTT
Chicory_Cull_Cds	CCTAGTTACAAATCTTTTGACCTAAATCTCCCTGCAGAAAATGGTCAAATGCGTTGAAGTT
Endive_Cull_Cds	CCTAGTTACAAATCTTTTGACCTAAATCTTCCTGCAGAAAATGGTCAAATGCGTTGAAGTT
Carrot_Cull_Cds	CCAAGTTACAAATCTTTGATCTCAACCTCCCAGCAGAGATGGTCAAATGTGTTGAAGTT
Celery_Cull_Cds	CCTAGTTATAAATCCTTTGATCTCAACCTTCCTGCTGAGATGGTCAAGTGCGTTGAAGTA
Brassica_Cull_Cds	TTCAAAGGGTTTTATGAAACAAAGACAAAACATAGGAAACTTACCTGGATCTACTCACTA
Radish_Cull_Cds	TTCAAAGGGTTTTATGAGACGAAAACATAACATAGGAAACTTACATGGATCTACTCACTA
Beet_Cull_Cds	TTTAAGCAGTTCTATTCAACTAAAACAAAGCACAGGAAGCTGACCTGGGTTTACTCATTG
Spinach_Cull_Cds	TTTAAGCAATTTTTATCAAACAAAGACAAAACACAGGAAGCTCACCTGGGTATATTCGTTG
Leek_Cull_Cds	TTTAAAGAGTTTTACGAGACAAAAACCAAACACAGAAAACCTTACATGGATTTATTCGTTG
Squash_Cull_Cds	TTCAAGGAATTTTTATCAAACAAAAACCAAGCACAGAAAACCTTACGTGGATTTACTCGTTG
WaterMelon_Cull_Cds	TTCAAGAGAGTTCTATCAAACAAAAACAAAGCATAGAAAACCTTACATGGATTTACTCATTG
CuCumber_Cull_Cds	TTCAAGAGAGTTTTATCAAACAAAAACCAAGCATCGAAAACCTTACATGGATTTACTCATTG
Melon_Cull_Cds	TTCAAGAGAGTTTTATCAAACAAAAACCAAGCATAGAAAACCTTACATGGATTTACTCATTG
Tomato_Cull_Cds	TTTAAGGAGTTCTATCAAACAAAAACAAAGCACAGGAAACTTACGTGGATATACTCTTTG
Eggplant_Cull_Cds	TTCAAGGAGTTTTATCAAACAAAAACGAAGCACAGGAAACTTACATGGATATACTCTTTG
Pepper_Cull_Cds	TTCAAGGAGTTTTATCAAACAAAAACGAAGCACAGGAAACTTACGTGGATATACTCTTTG
Lettuce_Cull_Cds	TTCAAGAGAATTTTTATCAAACAAAAACAAAGCACAGGAAGCTTACATGGATATATTCATTG
Chicory_Cull_Cds	TTCAAGAGAATTTTTATCAAACAAAAACAAAACACAGAAAACCTCACATGGATATATTCATTG
Endive_Cull_Cds	TTCAAGAGAATTTTTATCAAACAAAAACAAAACACAGAAAACCTCACATGGATTTATTCATTG
Carrot_Cull_Cds	TTTAGAGAATTCTACCAAACAAAAACAAAGCACAGAAAACCTGACATGGATATACTCTTTG
Celery_Cull_Cds	TTTAGAGAATTTTTATCAAACAAAAACGAAGCATAGAAAGCTCACATGGATATATTCTCTG

Fig. 69-15

Brassica_Cull_Cds	GGAACCTGCCACCTCAATGGGAAGTTTGATGTCAAGCCCATTGAGTTAGTTGTGTCTACA
Radish_Cull_Cds	GGAACCTGTGCACCTCAACGGAAAGTTTGATCACAAGCCCATTGAGTTAGTTGTGTCTACT
Beet_Cull_Cds	GGAAGCTGTAATATTAATGGCAAGTTTGGTCCAAAACTATTGAATTGGTTGTCTGGAAC
Spinach_Cull_Cds	GGAAGTTGTAACATTAATGGCAAGTTTGGTCCGAAAACAATTGAATTGGTTGTTGGAAC
Leek_Cull_Cds	GGCACTTGCAACATCAATGGCAAGTTCGAAACCAAGACAATAGAGTTGGTTGTTACAACC
Squash_Cull_Cds	GGTACCTGTAACATCAGCGGAAAAATTCGAACCGAAAACGATGGAGCTGATCGTGACAACC
WaterMelon_Cull_Cds	GGTACCTGTAACATCAGCGGAAAAATTTGAACCGAAAACGATGGAGCTGATTGTAACAAC
CuCumber_Cull_Cds	GGTACTTGTAACATCAGTGGAAAAATTTGAACCGAAAACGATGGAGCTGATTGTGACAAC
Melon_Cull_Cds	GGTACTTGTAACATCAGTGGAAAAATTTGAACCGAAGACGATGGAGCTGATTGTGACAACA
Tomato_Cull_Cds	GGAACCTGCAACATAAATGGAAAAATTTGAGCCAAAACTATTGAGCTCGTTGTCACTACT
Eggplant_Cull_Cds	GGAACCTGCAACATAAATGGAAAAATTTGAGGCAAAGACTATTGAGCTCGTTGTCACTACT
Pepper_Cull_Cds	GGAACCTGCAATATAAATGGAAAAATTTGAGCCAAAGACTATTGAGCTCGTTGTCACTACT
Lettuce_Cull_Cds	GGTACCTGCAATATAAACGGGAAAATTTGAACCCAAAAACAATGGAGCTCATAGTCACAACC
Chicory_Cull_Cds	GGCACCTGCAATATAAACGGGAAAAATTCGAACCAAAAAACCATGGAGCTAATCGTTACAAC
Endive_Cull_Cds	GGCACCTGCAATATTAACGGGAAAAATTCGAACCAAAAAACCATGGAGCTAATCGTTACAAC
Carrot_Cull_Cds	GGTACTTGTAACATCATTGGAAAAATTTGATCCAAAAACCATGGAGCTTATTGTGACAACA
Celery_Cull_Cds	GGTACTTGTAATATCAATGGAAAAATTTGAACCCAAAAACCATTGAGCTGATTGTGACAACC
Brassica_Cull_Cds	TACCAGGCTGCTGTGCTTCTGCTGTTCAACACAACAGACAAAATTGAGCTACACTGATATC
Radish_Cull_Cds	TACCAGGCTGCTGTGCTTCTGCTGTTCAACACAACAGACAAAATTGAGCTACAACGATATC
Beet_Cull_Cds	TATCAGGCTGCTGCTTTTGATGCTCTTTAACACATCAGACCGACTGAGTTATTCAGAGATA
Spinach_Cull_Cds	TATCAGGCTGCTGCGCTGATGCTCTTTAACACATCAGATCGACTGAGTTATTCAGAAAATA
Leek_Cull_Cds	TATCAGGCTGCAGTGTTGCTTCTATTCAACTCTGCAGATAAAATTAAGTTATTCTGAGATT
Squash_Cull_Cds	TATCAGGCTTCTGCCCTGCTGCTTTTCAATTCTCGGATAAACTAAGTTACTCCGAGATC
WaterMelon_Cull_Cds	TATCAGGCTTCTGCCCTGCTGCTATTCAATTCTTCAGATAGATTAAAGTTATTCCGAGATC
CuCumber_Cull_Cds	TATCAGGCTTCTGCCCTGTTGCTATTCAATTCTTCGGATAGACTAAGTTACTCGGAAAATC
Melon_Cull_Cds	TATCAGGCTTCTGCCCTGTTGCTATTCAATTCTTCGGACAGACTAAGTTACTCCGAAAATC
Tomato_Cull_Cds	TATCAGGCTTCTGCTCTGCTGCTCTTTAATGCATCAGATAGATTGAGTTATCAGGAAAATC
Eggplant_Cull_Cds	TATCAGGCTTCTGCTCTGCTTCTCTTTAATGCATCAGATAGATTGAGTTATCAGGAAAATC
Pepper_Cull_Cds	TATCAGGCTTCTGCTCTGCTGCTCTTTAATGCATCGGATAGATTGAGTTATCAGGAAAATC
Lettuce_Cull_Cds	TACCAGGCATCTGCTTTATTACTGTTCAACTTATCGGATCGATTGAGTTATCAAGAAAATC
Chicory_Cull_Cds	TACCAGGCATCTGCTTTATTACTGTTCAACTCATCAGATCGATTGAGTTATCAAGAAAATC
Endive_Cull_Cds	TACCAGGCATCTGCTTTATTGTTATTCAACTCATCAGATCGATTAAAGTTATCAAGAAAATC
Carrot_Cull_Cds	TACCAGGCCTCTGCTCTGCTGCTATTTAACTCTTCTGATAGACTTAGTTATAATGAAATA
Celery_Cull_Cds	TACCAGGCCTCTGCTCTCCTGTTATTTAATACTTCTGATAGGTTGAGTTATCAAGAAAATC

Fig. 69-16

Brassica_Cull_Cds	CTAACTCAGCTGAACCTGAGCCACGAAGATCTAGTGAGGTTGCTTCATTCCCTTGTCATGT
Radish_Cull_Cds	CTAACTCAACTGAACCTAAGCCACGAAGATTTAGTGAGGTTGCTTCATTCCCTGTCATGT
Beet_Cull_Cds	GCAACTCAACTAAATTTAGCTGATGAAGATCTGGTTAGAGTGCTTCAATCTTTATCCTGC
Spinach_Cull_Cds	ACGACCCCAACTAAATCTAGCTGACGAAGACTTGGTTAGAGTGCTTCAATCTCTATCTTGC
Leek_Cull_Cds	GTGCAGCAGCTAAACTTATCTGATGATGATGTAATCAGATTACTTCACTCTCTTTCATGC
Squash_Cull_Cds	ATGACTCAATTAAACTTGAGTGACGATGATGTTGTTAGACTGCTCCACTCGTTGTCGTGT
WaterMelon_Cull_Cds	ATGACACAATTAAATTTGAGTGACGATGATGTTGTTAGACTGCTCCACTCATTGTCATGT
CuCumber_Cull_Cds	ATGACACAATTAAATTTGAGTGACGATGATGTAGTTAGACTACTCCACTCGTTGTCATGT
Melon_Cull_Cds	ATGACACAATTAAATTTGAGTGATGATGATGTTGTTAGACTGCTCCACTCATTGTCGTGT
Tomato_Cull_Cds	ATGACGCAATTAAACCTATCAGATGATGATGTTGTTCGGCTTCTTCATTCCCTTTTCATGT
Eggplant_Cull_Cds	ATGACGCAATTAAACCTATCAGATGATGATGTTGTTCGGCTTCTTCATTCCCTTTTCATGT
Pepper_Cull_Cds	ATGACGCAACTAAACCTATCAGATGATGATGTTGTTCGGCTTCTTCATTCCCTTTTCATGT
Lettuce_Cull_Cds	ATGACTCAGTTGAACTTGTCAGATGATGATGTTGTTAGGCTGCTCCATTCTTTGTCATGT
Chicory_Cull_Cds	ATGACTCAATTAAACTTATCAGATGATGATGTTGTTAGACTACTCCATTCAATTATCATGT
Endive_Cull_Cds	ATGACTCAATTAAATTTATCAGATGATGATGTTGTTAGACTACTACATTCAATTATCATGT
Carrot_Cull_Cds	ATGACTCAGTTGAACTTGTCGGATGATGATGTTGTCAGACTACTTCATTCTCTTTCGTGT
Celery_Cull_Cds	ATGACTCAGTTAAATTTGTTCGGATGATGATGTTGTTTCGCCTGCTTCATTCCCTTTTCATGT
Brassica_Cull_Cds	GCTAGATACAAGATTCTTCTCAAGGAGCCAAGCACAAAGACTGTTTCCCAGTCTGATTCT
Radish_Cull_Cds	GCTAGGTACAAGATCCTTCTCAAGGAGCCAAGCACGAAGACTGTTACACAGACTGATTCA
Beet_Cull_Cds	GCAAAGTATAAGATTCTTTTAAAGGAGCCAAACACGAAAACCGTGTCCCCGACTGATTGT
Spinach_Cull_Cds	GCAAAGTATAAGATTCTTCTAAAAGAGCCAAGCACAAAGAAACGTGATCTCAACTGATTGT
Leek_Cull_Cds	GCTAAATACAAAATTCTCAATAAAGAACCCGCTACCAAGACTATTACCCCGAATGATCAT
Squash_Cull_Cds	GCGAAGTATAAAATTCTTAACAAGGAGCCAAATACGAAAACCATCTCTCCGAACGATCAT
WaterMelon_Cull_Cds	GCCAAGTATAAAATTCTTAATAAGGAGCCGAACACGAAAACCATCTCTCCGAATGATCAT
CuCumber_Cull_Cds	GCCAAGTATAAAATTCTTAATAAGGAACCAAATACGAAAACCATCTCTCCGAACGATCAT
Melon_Cull_Cds	GCCAAGTATAAAATTCTTAATAAGGAGCCAAATACGAAAACCATCTCACCGAACGATCAT
Tomato_Cull_Cds	GCGAAGTACAAGATACTCAACAAGGAGCCAAGCACCAAAACAATTTCTCCGACTGATGTC
Eggplant_Cull_Cds	GCGAAATACAAGATTCTCAACAAGGAGCCAAGCACCAAAACAATTTCTCCGACTGATGTC
Pepper_Cull_Cds	GCGAAGTACAAGATTCTCAACAAGGAGCCAAGCACCAAAACAATTTCTCCGACTGATGTC
Lettuce_Cull_Cds	GCAAAATACAAAATTCTTTTAAAGGAGCCTAATACCAAAACAATCTCTCCAACCGATTAC
Chicory_Cull_Cds	GCAAAATATAAAATTTTATTAAAAGAACCAAATACAAAAACAATCTCTCCAACGATTTC
Endive_Cull_Cds	GCAAAATATAAAATTTTATTAAAAGAACCAAATACCAAAACAATATCTCCAACCGATTTC
Carrot_Cull_Cds	GCAAAGTACAAGATTCTATCTAAAGAGCCGAACACCAAAACTATATCTCCAACGATTGC
Celery_Cull_Cds	GCCAAGTATAAAATTCTTACTAAAGAGCCGAACAACAAACAATTTCCCCTACGGATTAC

Fig. 69-17

Brassica_Cull_Cds	TTTGAATTCAACTCCAAATTCACCGACAGAATGCGGAGAAATAAAGATCCCTCTCCCACCT
Radish_Cull_Cds	TTTGAATTCAATGCCAAATTCACGGACAGAATGCGCAGAATCAAGATCCCTCTCCCTCCT
Beet_Cull_Cds	TTTTCATTTAACTCTAGTTTCACTGACAGGATGAGGAGGATAAGAATTCCTCTTCCTCCG
Spinach_Cull_Cds	TTTTCATTTCAACTCTAATTTTACTGACAGAATGAGGAGGATTAGGATTCCTCTTCCTCCA
Leek_Cull_Cds	TTTGAGTTCAATTCTAAATTCACTGATAGAATGAGAAGGATCAAGATTCCTCTGCCTCCT
Squash_Cull_Cds	TTTGAGTTCAACGCAAAATTCCTCCGACAAAATGAGGAGAAATAAAGATCCCTCTTCCGCCT
WaterMelon_Cull_Cds	TTTGAGTTCAATGCAAAATTCCTCCGACAAAATGAGGAGAAATAAAGATCCCTCTTCCGCCT
CuCumber_Cull_Cds	TTTGAGTTCAATGCAAAATTCCTCCGACAAAATGAGGAGAAATAAAGATCCCTCTTCCGCCT
Melon_Cull_Cds	TTTGAGTTCAATGCAAAATTCCTCCGACAAAATGAGGAGAAATAAAGATCCCTCTTCCGCCT
Tomato_Cull_Cds	TTTGAGTTCAACTCAAAGTTCACTGACAAAATGAGGAGGATCAAGATACCTCTCCCTCCT
Eggplant_Cull_Cds	TTTGAGTTCAACTCAAAGTTCACTGACAAAATGAGGAGGATCAAGATACCTCTCCCACCA
Pepper_Cull_Cds	TTTGAGTTCAATTTTAAAGTTCACTGACAAAATGAGGAGGATCAAGATACCTCTCCCTCCT
Lettuce_Cull_Cds	TTCGAATTCAACTCCAAGTTTACAGATAAAATGAGGAGGATCAAGATTCCTCTACCTCCT
Chicory_Cull_Cds	TTTGAATTCAACTCAAAGTTTACAGATAAAATGAGAAGGATCAAGATTCCTCTACCTCCT
Endive_Cull_Cds	TTTGAATTCAACTCAAAGTTTACAGATAAAATGAGAAGGATCAAGATTCCTCTACCTCCT
Carrot_Cull_Cds	TTTCAGTTCAATTCCAAATTTACTGATAAAATGAGGAGGATTAAGATTCCACTTCCCCCA
Celery_Cull_Cds	TTTGAGTTCAACTCCAAGTTCACTGACAAAATGAGGAGAAATTAAGATTCCACTACCTCCA
Brassica_Cull_Cds	GTTGATGAGAGGAAGAAAGTTGTGGAAGACGTGGACAAAGACAGACGCTATGCGATTGAT
Radish_Cull_Cds	GTTGATGAAAAGGAAGAAGGTTGTGGAAGATGTGGACAAAGACAGACGCTATGCGATTGAT
Beet_Cull_Cds	ATGGATGAGAGGAAAAAGGTTGTTGAGGATGTTGACAAAGATAGAAGATATGCTATTGAT
Spinach_Cull_Cds	ATGGATGAGAGGAAAAAGGTTGTTGAAGATGTTGACAAAGATAGAAGATATGCTATTGAT
Leek_Cull_Cds	GTGGATGAGAAGAAAAAGTAATTGAAGATGTTGACAAAGACAGAAGATATGCAATTGAC
Squash_Cull_Cds	GTGGATGAGAAAAAGAAAGTAATAGAAGATGTTGACAAGGATCGAAGATATGCTATCGAT
WaterMelon_Cull_Cds	GTGGATGAGAAAAAGAAAGTCATTGAAGATGTTGACAAGGATCGAAGGTATGCTATTGAT
CuCumber_Cull_Cds	GTGGATGAGAAAAAGAAAGTCATTGAAGATGTTGACAAGGATCGAAGGTATGCTATTGAC
Melon_Cull_Cds	GTGGATGAGAAAAAGAAAGTCATTGAAGATGTTGACAAGGATCGAAGGTATGCTATTGAC
Tomato_Cull_Cds	GTTGATGAGAAGAAAAAGGTAATTGAAGACGTTGACAAGGATAGGCGGTATGCTATAGAT
Eggplant_Cull_Cds	GTTGATGAAAAGAAAAAGGTAATTGAAGACGTTGACAAGGATAGGCGGTATGCTATAGAT
Pepper_Cull_Cds	GTTGATGAGAAGAAAAAGGTAATTGAAGATGTTGACAAAGATAGGCGGTACGCTATAGAT
Lettuce_Cull_Cds	GTGGATGAGAAGAAAAAGGTGATTGAGGATGTTGACAAAGACAGACGTTATGCCATTGAT
Chicory_Cull_Cds	GTTGATGAAAAGAAAAAGTAATTGAAGATGTTGACAAAGACCGACGTTATGCAATTGAT
Endive_Cull_Cds	GTTGATGAAAAGAAAAAGTAATTGAAGATGTTGACAAAGATAGAAGGTATGCAATTGAT
Carrot_Cull_Cds	GTGGATGAGAAGAAAAAGGTAATTGAAGATGTTGATAAAGACAGGCGATATGCTATAGAT
Celery_Cull_Cds	GTTGATGAGAAGAAAAAGGTAATTGAAGATGTTGACAAGGACCGGCGATATGCCATTGAT

Fig. 69-18

Brassica_Cull_Cds	GCTGCCATTGTGAGGATCATGAAGAGCAGGAAAGTATTGGGACATCAACAACCTTGTTTCT
Radish_Cull_Cds	GCTGCCATTGTTAGGATCATGAAGAGCAGGAAAGTGTTGGGACATCAACAACCTCGTCTCT
Beet_Cull_Cds	GCCTCAATTGTACGCATAATGAAAAGTAGGAAGGTTTTGGGGTACCAGCAATTAATCACA
Spinach_Cull_Cds	GCCTCAATTGTACGCATAATGAAAAGTAGGAAGGCTTTGGGATATCAACAATTAATCACG
Leek_Cull_Cds	GCATCCATAGTTCGAATAATGAAAAGTAGAAAAGTTCTTGGTCATCAGCAGCTTGTTTTG
Squash_Cull_Cds	GCCTCGATCGTGCGTATCATGAAGAGTAGGAAAGTTCTGGGTCACCAGCAGTTAGTGATG
WaterMelon_Cull_Cds	GCCTCAATCGTGCGTATCATGAAGAGTCGGAAAGTTCTGGGTCATCAGCAGCTAGTGATG
CuCumber_Cull_Cds	GCCTCAATCGTGCGTATCATGAAGAGTCGGAAAGTTCTTGGTCATCAGCAACTAGTGATG
Melon_Cull_Cds	GCCTCAATCGTGCGTATCATGAAGAGTCGAAAAGTTCTTGGTCATCAGCAACTAGTGATG
Tomato_Cull_Cds	GCTTCAATTGTGCGTATTATGAAGAGCCGTAAAGTATTGGGCTACCAGCAACTAGTCATG
Eggplant_Cull_Cds	GCCTCAATTGTGCGTATTATGAAGAGTCGTAAAGTATTGGGCTACCAGCAACTGGTCATG
Pepper_Cull_Cds	GCTTCAATTGTGCGTATTATGAAGAGTCGTAAAGTATTGGGCTACCAGCAACTGGTCATG
Lettuce_Cull_Cds	GCTTCCATTGTAAGGATAATGAAGAGCAGAAAGGTGCTTGGATACCAGCAGTTGGTTATG
Chicory_Cull_Cds	GCTTCAATTGTACGGATAATGAAAAGCAGAAAAGTTCTTGGATACCAACAATTGGTCATG
Endive_Cull_Cds	GCTTCAATTGTACGAATAATGAAAAGCAGAAAAGTTCTTGGATACCAACAATTGGTTATG
Carrot_Cull_Cds	GCTTCAATTGTCCGTATCATGAAGAGCCGCAAAGTTTTGGGTTATCAGCAGCTAGTAATG
Celery_Cull_Cds	GCATCTATTGTCCGCATTATGAAGAGCCGTAAAGTTTTGGGCTACCAACAATTGGTTATG
Brassica_Cull_Cds	GAGTGCGTTGAGCAACTTAGCCGAATGTTCAAGCCTGATATCAAGGCAATCAAGAAGCGC
Radish_Cull_Cds	GAGTGCGTTGAGCAACTTAGCCGAATGTTCAAGCCTGATATCAAAGCGATCAAGAAGCGT
Beet_Cull_Cds	GAGTGTGTGGAGCAGCTAAGCCGCATGTTCAAGCCTGATTTCAAGGCAATTAAGAAGAGG
Spinach_Cull_Cds	GAGTGTGTGGAGCAGCTAAGCCGCATGTTCAAGCCTGATTTCAAAGCAATTAAGAAGAGG
Leek_Cull_Cds	GAATGTGTTGAGCAATTAGGCCGCATGTTTAAGCCTGACTTTAAGGCCATCAAGAAAAGG
Squash_Cull_Cds	GAGTGCGTCGAGCAACTGGGTCGTATGTTCAAGCCTGATTTCAAGGCGATAAAGAAGAGA
WaterMelon_Cull_Cds	GAGTGCGTCGAGCAATTGGGTCGTATGTTCAAGCCCCGACTTCAAAGCGATAAAGAAGAGA
CuCumber_Cull_Cds	GAGTGCGTCGAGCAATTGGGCCGTATGTTCAAGCCCCGATTTCAAGGCGATAAAGAAGAGA
Melon_Cull_Cds	GAGTGCGTCGAGCAATTGGGTCGTATGTTCAAGCCCCGATTTCAAGGCGATAAAGAAGAGA
Tomato_Cull_Cds	GAGTGCGTTGAGCAGTTGGGGCGCATGTTCAAGCCTGATGTCAAAGCTATCAAGAAGAGA
Eggplant_Cull_Cds	GAGTGCGTTGAGCAGTTGGGACGCATGTTCAAGCCTGATGTCAAAGCTATCAAGAAGAGA
Pepper_Cull_Cds	GAGTGTGTTGAGCAGTTGGGACGCATGTTCAAGCCTGATGTCAAAGCTATCAAGAAGAGA
Lettuce_Cull_Cds	GAGTGTGTTGAACAGTTGGGACGCATGTTTAAGCCTGATGTAAAAGCAATCAAGAAGCGG
Chicory_Cull_Cds	GAATGTGTTGAACAATTAGGCCGTATGTTTAAGCCTGATGTAAAAGCAATCAAGAAACGT
Endive_Cull_Cds	GAGTGTGTTGAACAATTAGGCCGTATGTTTAAGCCTGATGTAAAAGCAATCAAGAAGCGT
Carrot_Cull_Cds	GAGTGCGTTGAACAATTGGGTCGCATGTTTAAGCCTGATGTCAAAGCAATCAAGAAGAGA
Celery_Cull_Cds	GAATGTGTTGAGCAATTGGGACGCATGTTTAAGCCTGATGTCAAAGCAATTAAGAAGAGA

Fig. 69-19

Brassica_Cull1_Cds	ATGGAGGATTTGATAACGAGAGATTATCTGGAGAGGGACAAGGAGAACGCTAACATGTTT
Radish_Cull1_Cds	ATGGAGGATCTAATTACGAGGGATTATTTGGAGAGGGACAAGGAGAACCCTAACATGTTT
Beet_Cull1_Cds	ATCGAGGACTTAATAACCCGAGATTATATTGAAAGAGACAAGGAGAACCCGCAGCTATTC
Spinach_Cull1_Cds	ATCGAGGACTTGATAACCAGAGATTATATTGAAAGAGACAAGGAAAACCCTCAGCTATTC
Leek_Cull1_Cds	ATTGAAGATCTGATCGCTAGAGATTATTTGGAGAGGGACAAGGACAATCCAAACCTCTTT
Squash_Cull1_Cds	ATCGAAGATCTGATCACTCGTGACTIONTTAGAGAGAGACAAAGACAACCCCCACTTGTTT
WaterMelon_Cull1_Cds	ATCGAAGATCTGATCACTCGGGACTATTTAGAGAGAGACAAAGACAACCCCCACTTGTTT
CuCumber_Cull1_Cds	ATTGAAGACCTGATCACTCGGGATTATCTAGAGAGAGACAAAGACAACCCCCACTTGTTT
Melon_Cull1_Cds	ATTGAAGACCTGATCACTCGGGACTATCTAGAGAGAGACAAAGACAACCCCCACTTGTTT
Tomato_Cull1_Cds	ATCGAAGATTTGATAACTAGAGATTACCTAGAGAGGGACAAAGATAATCCAAACCTGTTC
Eggplant_Cull1_Cds	ATTGAAGATCTGATAACTAGAGATTACCTAGAGAGGGACAAAGATAACCCAAACTTGTTT
Pepper_Cull1_Cds	ATTGAAGATTTGATAACTAGAGATTACCTAGAGAGGGACAAAGATAATCCGAACCTGTTC
Lettuce_Cull1_Cds	ATTGAAGATCTGATAACTCGTGACTIONTTGAAAGAGACAAAGAGAACCCCAACTTGTTT
Chicory_Cull1_Cds	ATTGAAGATCTCATAACTCGTGACTIONTTGAAAGAGACAAAGAAAATCCAAATTTGTTT
Endive_Cull1_Cds	ATTGAAGATTTGATAACGCGTGACTIONTTGAAAGAGACAAAGAAAATCCAAATTTGTTT
Carrot_Cull1_Cds	ATCGAAGATTTAATAACTCGGGATTATCTGGAAAGAGACAAGGACAATGCCAACCTGTTC
Celery_Cull1_Cds	ATCGAAGATTTAATAACGCGTGACTIONTTGAAAGAGACAAGGATAATGCCAACCTTTTC

Brassica_Cull1_Cds	AGGTACTTGGCTTAG
Radish_Cull1_Cds	AGGTACTTGGCTTAG
Beet_Cull1_Cds	CGATACTTGGCTTGA
Spinach_Cull1_Cds	CGGTACTTGGCTTGA
Leek_Cull1_Cds	AAATATTTGGCCTAA
Squash_Cull1_Cds	AGGTACTTGGCTTGA
WaterMelon_Cull1_Cds	AGGTACTTGGCTTGA
CuCumber_Cull1_Cds	AGGTACTTGGCTTGA
Melon_Cull1_Cds	AGGTACTTGGCTTGA
Tomato_Cull1_Cds	AAGTACTTGGCATGA
Eggplant_Cull1_Cds	AAGTACTTGGCATGA
Pepper_Cull1_Cds	AAGTACTTGGCATGA
Lettuce_Cull1_Cds	CGATACTTGGCATGA
Chicory_Cull1_Cds	CGGTACTTGGCATGA
Endive_Cull1_Cds	CGGTACTTGGCATGA
Carrot_Cull1_Cds	AGGTATCTGGCATGA
Celery_Cull1_Cds	AGATATTTGGCATGA
Endive_Cull1_Cds	CGGTACTTGGCATGA
Carrot_Cull1_Cds	AGGTATCTGGCATGA
Celery_Cull1_Cds	AGATATTTGGCATGA

Fig. 70-1

beet_cul1	--MNDRKVIELEQGWEFMGKGITKLKRILEGLPEPPFNSEDYMMLYTT [I] YNMCTQKPPHD
spinach_cul1	--MNDRKVIELEQGWEFMGKGITKLKRILEGLPEPPFNSEDYMMLYTT [I] YNMCTQKPPHD
arabidopsis_cul1	---MERKTIDLEQGWDYMQTGITKLKRILEGLNEPAFDSEQYMMLYTT [I] YNMCTQKPPHD
brassica_cul1	---MERKTIDLDQGWDYMQTGITKLKRILEGLPEPQFDSEQYMMLYTT [I] YNMCTQKPPHD
radish_cul1	---MERKTIDLEQGWDYMQTGITKLKRILEGLPEPQFDSEQYMMLYTT [I] YNMCTQKPPHD
leek_cul1	MSLHERKTIDLEQGWAFMQKGITKLKNILDELNEPQFSSSEDYMMLYTT [I] YNMCTQKPPHD
eggplant_cul1	--MNQRSTIDLEHGWDFMQKGITKLKNILEGLPEPQFSSSEDYMMLYTT [I] YNMCTQKPPHD
tomato_cul1	--MNQRSTIDLEHGWDFMQRGITKLKNILEGLPEPQFSSSEDYMMLYTT [I] YNMCTQKPPHD
pepper_cul1	--MNQRSTINLEHGWDFMQRGITKLKNILEGLPEPQFSSSEDYMMLYTT [I] YNMCTQKPPHD
cucumber_cul1	MTMGERKTIDLEQGWEFMQKGITKLKNILEGLPEPQFSSSEDYMMLYTT [I] YNMCTQKPPHD
melon_cul1	MTMGERKTIDLEQGWEFMQKGITKLKNILEGLPEPQFSSSEDYMMLYTT [I] YNMCTQKPPHD
watermelon_cul1	MTMGERKTIDLEQGWEFMQKGITKLKNILEGLPEPQFSSSEDYMMLYTT [I] YNMCTQKPPHD
squash_cul1	MTMGERKTIDLEQGWEFMQKGITKLKNILEGLPEPQFSSSEDYMMLYTT [I] YNMCTQKPPHD
celery_cul1	--MNERKTIDLDNGWEFMQKGITKLKKILEGQPEPQFSSSEDYMMLYTT [I] YNMCTQKPPHD
lettuce_cul1	--MNERKTIDLEQGWDYFMQKGITKLKNILEGLPEPQFSSSEDYMMLYTT [I] YNMCTQKPPHD
endive_cul1	--MNERKTIDLEQGWDYFMQKGITKLKNILEGLPEPQFSSSEDYMMLYTT [I] YNMCTQKPPHD
chicory_cul1	--MNERKTIDLEQGWDYFMQKGITKLKNILEGLPEPQFSSSEDYMMLYTT [I] YNMCTQKPPHD
carrot_cul1	-MMIERKTIDLEQGWDYFMQKGITKLKNILEGFPEPQFSSSEDYMMLYTT [I] YNMCTQKPPHD
beet_cul1	YSQQLYDNYKQAFVDYINSTVLP SLREKHDEFMLRELVKRWANHKVMVRWLSRFFHYLDR
spinach_cul1	YSQQLYDNYKEAFVDYIHSTVLP SLGDKHDEFMLRELVKRWSNHKVMVRWLSRFFHYLDR
arabidopsis_cul1	YSQQLYDKYREAFEEYINSTVLPALREKHDEFMLRELFKRWSNHKVMVRWLSRFFYYLDR
brassica_cul1	YSQQLYDKYREAFEEYIHSTVLPALREKHDEYMLRELVKRWSNHKVMVRWLSRFFYYLDR
radish_cul1	YSQQLYDKYREAFEEYIDSTVLPALKEKHDEYMLRELVKRWSNHKVMVRWLSRFFYYLDR
leek_cul1	YSQELYDKYRESFEEYITTTVLP SLREKHDEYMLRELVRRWSNHKIMVRWLSRFFHYLDR
eggplant_cul1	YSQQLYDKYREAFEEYITTTVLP SLREKHDEFMLRELVKRWSNHKVMVRWLSRFFHYLDR
tomato_cul1	YSQQLYDKYREAFEEYITTTVLP SLREKHDEFMLRELVKRWSNHKVMVRWLSRFFHYLDR
pepper_cul1	YSQQLYDKYREAFEEYITTTVLP SLREKHDEFMLRELVKRWSNHKVMVRWLSRFFHYLDR
cucumber_cul1	YSQQLYDKYRESFEEYITSMVLP SLREKHDEFMLRELVKRWTNHKVMVRWLSRFFHYLDR
melon_cul1	YSQQLYDKYRESFEEYITSMVLP SLREKHDEFMLRELVKRWTNHKVMVRWLSRFFHYLDR
watermelon_cul1	YSQQLYDKYRESFEEYITSMVLP SLREKHDEFMLRELVKRWTNHKVMVRWLSRFFHYLDR
squash_cul1	YSQQLYDKYRESFEEYISSMVLP SLREKHDEFMLRELVKRWTNHKVMVRWLSRFFHYLDR
celery_cul1	YSQQLYDKYREAFEEYITSTVLP SLREKHDEFMLRELVN RWTNHKVMVRWLSRFFHYLDR
lettuce_cul1	YSQQLYDKYRESFEEYITSTVLP SLREKHDEFMLRELVRRWSNHKVMVRWLSRFFHYLDR
endive_cul1	YSQQLYDKYRESFEEYITSTVLP SLREKHDEFMLRELVRRWSNHKVMVRWLSRFFHYLDR
chicory_cul1	YSQQLYDKYRESFEEYITSTVLP SLREKHDEFMLRELVRRWSNHKVMVRWLSRFFHYLDR
carrot_cul1	YSQQLYEKYREAIEEYITSTVLP SLREKHDEFMLRELVKRWSNHKVMVRWLSRFFHYLDR
beet_cul1	YFIARRSLPSLNEVGLTCFRDLVYQEISGKAKDAVIALIDIEREGGQIDRSLLKNVLDIY
spinach_cul1	YFIARRSLPSLNDVGLTCFRDLVYQEISGKAKDAVIALIDEEREGGQIDRALLKNVLDIY
arabidopsis_cul1	YFIARRSLPPLNEVGLTCFRDLVYNELH SKVKQAVIALVDKEREGEQIDRALLKNVLDIY
brassica_cul1	YFIARRSLPPLNEVGLTCFRDLVYNELH SKVKDAVIALVDKEREGEQIDRALLKNVLDIY
radish_cul1	YFIARRSLPPLNEVGLTCFRDRVYKELH SKVKDAVIALVDKEREGEQIDRALLKNVLDIY
leek_cul1	YFIARRSLPALNEVGLTCFRDLVYNEVHG VKKDAVISLIDQEREGEQIDRALLKNVLGIF
eggplant_cul1	YFIARRSLPGLNEVGLTCFRDLVYQELNGKVRDAVISLIDQEREGEQIDRALLKNVLDIF
tomato_cul1	YFIARRSLPGLNEVGLTCFRDQVYQELNGKVRDAVISLIDQEREGEQIDRALLKNVLDIF

Fig. 70-2

pepper_cul1	YFIARRSLPGLNEVGLTCFRDLVYQELNGKVRDAVISLIDQEREGEQIDRALLKNVLDIF
cucumber_cul1	YFIARRSLPPLNEVGLTCFRELVKELNSKVRDAVISLIDQEREGEQIDRALLKNVLDIF
melon_cul1	YFIARRSLPPLNEVGLTCFRELVKELNSKVRDAVISLIDQEREGEQIDRALLKNVLDIF
watermelon_cul1	YFIARRSLPPLNEVGLTCFRELVKELNSKVRDAVISLIDQEREGEQIDRALLKNVLDIF
squash_cul1	YFIARRSLPPLNEVGLTCFRELVKELNSKVRDAVISLIDQEREGEQIDRALLKNVLDIF
celery_cul1	YFIARRSLPALHEVGLTCFRDLVYQELKVKVRDAVISLIDQEREGEQIDRALLKNVLDIF
lettuce_cul1	YFIARRSLPPLNEVGLACFRDLVYQEVNGKVRDAVISLIDQEREGEQIDRALLKNVLDIF
endive_cul1	YFIARRSLPPLNEVGLACFRDLVYQEVNGKVRDAVISLIDQEREGEQIDRALLKNVLDIF
chicory_cul1	YFIARRSLPPLNEVGLACFRDLVYQEVNGKVRDAVISLIDQEREGEQIDRALLKNVLDIF
carrot_cul1	YFIARRSLPPLHEVGLTCFRDLVYQEINGKVRDAVISLINQEREGEQIDRALLKNVLDIF
beet_cul1	VEIGMGQMDHYEKDFEAHMLDDTAAYYSRKASSWILEDSCPEYMLKSEECLKKEKERVAN
spinach_cul1	VEIGMTQMDYYEKDFEAHMLDDTAAYYSRKASSWILEDSCPEYMLKSEECLKKEKDRVAH
arabidopsis_cul1	VEIGMGQMERYEEDFESFMLQDTSSYYSRKASSWIQEDSCPDYMLKSEECLKKERERVAH
brassica_cul1	VEIGMGQMERYEEDFESFMLLDSASYYSRKASSWIQEDSCPDYMLKSEECLKKERERVAH
radish_cul1	VEIGMGQMERYEVD FESFMLLDSASYYSRKASNWIQEDSCPDYMLKSEECLKKERERVAH
leek_cul1	VEIGLGSMECYENDFETSMLNATAAYYSRKASNWILEDSCPDYMLKAAEECLKHEKDRVAH
eggplant_cul1	VEIGMGSMDDYYENDFEAAMLKDTAAYYSRKASNWILEDSCPDYMLKAAEECLKREKDRVSH
tomato_cul1	VEIGMGLMDYYENDFEAAMLKDTAAYYSRKASNWILEDSCPDYMLKAAEECLKREKDRVSH
pepper_cul1	VEIGMGSMDDYYENDFEAAMLKDTAAYYSRKASNWILEDSCPDYMLKAAEECLKREKDRVSH
cucumber_cul1	VEIGMGQMDYYENDFEAAMLKDTAAYYSRKASNWILEDSCPDYMLKAAEECLKREKDRVSH
melon_cul1	VEIGMGQMDYYENDFEAAMLKDTAAYYSRKASNWILEDSCPDYMLKAAEECLKREKDRVSH
watermelon_cul1	VEIGMGQMDYYENDFEAAMLKDTAAYYSRKASNWILEDSCPDYMLKAAEECLKREKDRVSH
squash_cul1	VEIGMGQMDYYENDFEAAMLKDTAAYYSRKASNWILEDSCPDYMLKAAEECLRREKDRVSH
celery_cul1	VEIGMSQMDQYENDFEEAMLTDTAAYYSRKASNWILEDSCPDYMLKAAEECLRREKDRVSH
lettuce_cul1	VEIGMGQMEYYENDFEASMLNDTAAYYSRKASNWILEDSCPDYMLKAAEECLKREKDRVSH
endive_cul1	VEIGMGQMEYYENDFEASMLNDTAAYYSRKASNWILEDSCPDYMLKAAEECLKREKDRVSH
chicory_cul1	VEIGMGQMEYYENDFEASMLNDTAAYYSRKASNWILEDSCPDYMLKAAEECLKREKDRVSH
carrot_cul1	VEVGMSQMDYYENDFEADMLKDTAAYYSRKASNWILEDSCPDYMLKAAEECLRREKDRVSN
beet_cul1	YLHSSSEPKLLEKVVQNELLLVYESQLLEKENSGCRALLKDDKVDDL SRMYRLYSKVTKGL
spinach_cul1	YLHSSSEPKLLEKVVQNELLLVYENQLLEKENSGCRALLKDDKVEDL SRMYRLYSKVTKGL
arabidopsis_cul1	YLHSSSEPKLVEKVVQHELLLVVFASQLLEKEHSGCRALLRDDKVDDL SRMYRLYHKILRGL
brassica_cul1	YLHSSSEPKLVEKVVQHELLLVVYANQLLEKEHSGCRALLRDDKVDDL SRMYRLYHKIVKGL
radish_cul1	YLHSSSEPKLVEKVVQHELLLVVYANQLLEKEHSGCRALLRDDKVDDL SRMYRLYHKIAKGL
leek_cul1	YLHSSSEQLLEKVVQHELLFVYASQLLEKEHSGCHALLRDDKVGDLSRMYRLFCRITRGL
eggplant_cul1	YLHSSSETKLEKVVQHELLSVYANQLLEKEHSGCHALLRDDKVDDL SRMYRLFSKIPRGL
tomato_cul1	YLHSSSETKLEKVVQHELLSVYATQLLEKEHSGCHALLRDDKVEDLSRMYRLFSKISRGL
pepper_cul1	YLHLSSETKLEKVVQHELLSVYATQLLEKEHSGCHALLRDDKVEDLSRMYRLFSKIPRGL
cucumber_cul1	YLHSSSEPKLLEKVVQHELLSVYATQLLEKEHSGCHALLRDDKVEDLSRMFRLFSKIPKGL
melon_cul1	YLHSSSEPKLLEKVVQHELLSVYATQLLEKEHSGCHALLRDDKVEDLSRMFRLFSKIPKGL
watermelon_cul1	YLHSSSEPKLLEKVVQHELLSVYATQLLEKEHSGCHALLRDDKVEDLSRMFRLFSKIPKGL
squash_cul1	YLHSSSEPKLLEKVVQHELLSVYATQLLEKEHSGCHALLRDDKVEDLSRMFRLFSKIPKGL
celery_cul1	YLHFSSEPKLLEKVVQHELLSVYATQLLEKEHSGCHALLRDDKVDDL SRMYRLFSKIPKGL
lettuce_cul1	YLHSSSEPKLLEKVVQNELLSVYATQLLEKEHSGCHALLRDDKVDDL SRMYRLFSKIPKGL
endive_cul1	YLHSSSEPKLLEKVVQTELLSVYATQLLEKEHSGCHALLRDDKVDDL SRMYRLFSKIQKGL

Fig. 70-3

chicory_cul1	YLHSSSEPKLLEKVQTELLSVYATQLLEKEHSGCHALLRDDKVDL SRMYRLFSKIQKGL
carrot_cul1	YLHSSSEPKLLEKVQHHELLSHYATQLLEKEHSGCHALLRDDKVADL SRMYRLFSKIPRGL
beet_cul1	EPIGSIFKQHITDEGTALVQQAEDAAISKAENT--G-GSHEQVFVRKVIELHDKFMTYVT
spinach_cul1	EPIGSIFKQHITDEGTALVQQAEDAAISKAENA--GGGSHEQVFVRKVIELHDKFMTYVT
arabidopsis_cul1	EPVANIFKQHVTAEGNALVQQAEDTATNQVAN---TASVQEQVLIRKVIELHDKYMVYVT
brassica_cul1	EPVANIFKQHVTAEGNALVQQAEDTATNHAAN---TASVQEQVLIRKVIELHDKYMVYVV
radish_cul1	EPVANIFKQHVTAEGNALVQQAEDTATNQAAAN---TASVQEQVLIRKVIELHDKYMVYVV
leek_cul1	DPVSQIFKQHVTAEGTALVKHAEDAASNKKAEEKDIVGLQEQVFVRKVIELHDKYLAYVT
eggplant_cul1	EPVANIFKQHVTAEGTALVKQAEDAASNKKAEKRDVVGLQEQVFVRKVIELHDKYLAYVN
tomato_cul1	DPVANIFKQHVTAEGTALVKQAEDAASNKKAEKRDVVGLQEQVFVRKVIELHDKYLAYVN
pepper_cul1	DPVANIFKQHVTAEGTALVKQAEDAASNKKAEKRDVVGLQEQIFVRKVIELHDKY MAYVN
cucumber_cul1	DPVSNIFKQHVTAEGTALVKQAEDAASNKKAEEKDIVGLQEQVFVRKVIELHDKYLAYVN
melon_cul1	DPVSNIFKQHVTAEGTALVKQAEDAASNKKAEEKDIVGLQEQVFVRKVIELHDKYLAYVN
watermelon_cul1	DPVSNIFKQHVTAEGTALVKQAEDAASNKKAEEKDIVGLQEQVFVRKVIELHDKYLAYVN
squash_cul1	DPVSNIFKQHVTAEGTALVKQAEDAASNKKAEEKDIVGLQEQVFVRKVIELHDKYLAYVN
celery_cul1	DPVSYIFKQHVTNEGMA LVKQAEDAASNKKAEKRDVVS LQEQVFVRK I IELHDKYLAYVN
lettuce_cul1	DPVSSMFKQHVTAE GTTLVKQAEDAASTKKA EKRDVVGLQEQVFVRKVIELHDKYLAYVN
endive_cul1	DPVSSMFKQHVTAE GTTLVKQAEDAASTKKA EKRDVVGLQEQVFVRKVIELHDKYLAYVN
chicory_cul1	DPVSSMFKQHVTAE GTTLVKQAEDAASTKKA EKRDVVGLQEQVFVRKVIELHDKYLAYVN
carrot_cul1	DPVSNIFKQHVTAEGTALVKQAEDAASNKKAEKRDVVGLQEQVFVRK I IELHDKYLT YVN
beet_cul1	DCFNSHTIFHKALKEAFEVFLNKG VAGSSSAELLATFCDN ILKKG GSEKLSDEAIEDSLE
spinach_cul1	DCFNSHTIFHKALKEAFEVFLNKG VAGSSSAELLASFCDN ILKKG GSEKLSDEAIEDSLE
arabidopsis_cul1	ECFQNHTL FHKALKEAFEIFCNKTVAGSSSAELLATFCDN ILKKG GSEKLSDEAIEDTLE
brassica_cul1	ECFQNHTL FHKALKEAFEIFCNKTVAGSSSAELLATFCDN ILKKG GSEKLSDEAIEDTLE
radish_cul1	ECFQNHTL FHKALKEAFEIFCNKTVAGSSSAELLATFCDN ILKKG GSEKLSDEAIEDTLE
leek_cul1	DCFQNHSL FHKALKEAFEVFCNKGVAGSSSAELLAAFCDN ILKKG GSEKLSDEAIEDTLE
eggplant_cul1	NCFQNHTL FHKALKEAFELFCNKGVAGSSSAELLATFCDN ILKKG GSEKLSDEAIEETLE
tomato_cul1	NCFQNHTL FHKALKEAFELFCNKGVAGSSSAELLATFCDN ILKKG GSEKLSDEAIEETLE
pepper_cul1	NCFQNHTL FHKALKEAFELFCNKGVAGSSSAELLATFCDN ILKKG GSEKLSDEAIEETLE
cucumber_cul1	DCFQNHTL FHKALKEAFEVFCNKGVAGSSSAELLATFCDN ILKKG GSEKLSDEAIEETLE
melon_cul1	DCFQNHTL FHKALKEAFEVFCNKGVAGSSSAELLATFCDN ILKKG GSEKLSDEAIEETLE
watermelon_cul1	DCFQNHTL FHKALKEAFEVFCNKGVAGSSSAELLATFCDN ILKKG GSEKLSDEAIEETLE
squash_cul1	DCFQNHTL FHKALKEAFEVFCNKGVAGSSSAELLATFCDN ILKKG GSEKLSDEAIEETLE
celery_cul1	DCFTNHTL FHKALKEAFEIFCNKGVAGSSSAELLATFCDN ILKKG GSEKLSDEAIEETLE
lettuce_cul1	DCFMNHTL FHKALKEAFEIFCNKGVAGSSSAELLATFCDN ILKKG GSEKLSDEAIEDTLE
endive_cul1	DCFMNHTL FHKALKEAFEIFCNKGVAGSSSAELLATFCDN ILKKG GSEKLSDEAIEDTLE
chicory_cul1	DCFMNHTL FHKALKEAFEIFCNKGVAGSSSAELLATFCDN ILKKG GSEKLSDEAIEDTLE
carrot_cul1	DCFTNHTL FHKALKEAFEIFCNKGVSGSSSAELLATFCDN ILKKG GSEKLSDEAIEETLE
beet_cul1	KVVKLLAYVSDKDLFAEFYRK KLSRRL LF DKSANDDHERSILTKLKQQCGGQFTSKMEGM
spinach_cul1	KVVKLLAYVSDKDLFAEFYRK KLSRRL LF DKSANDDHERSILTKLKQQCGGQFTSKMEGM
arabidopsis_cul1	KVVKLLAYISDKDLFAEFYRK KLARRLL FDRSANDDHERSILTKLKQQCGGQFTSKMEGM
brassica_cul1	KVVKLLAYISDKDLFAEFYRK KLARRLL FDRSANDDHERSILTKLKQQCGGQFTSKMEGM

Fig. 70-4

radish_cul1	KVVKLLAYISDKDLFAEFYRKKLARLLLFDRSANDDHERSILTKLKQQCGGQFTSKMEGM
leek_cul1	KVVKLLAYISDKDLFAEFYRKKLARLLLFDKSANDDHERSILTKLKQQCGGQFTSKMEGM
eggplant_cul1	KVVKLLAYISDKDLFAEFYRKKLARLLLFDKSANDEHERSILTKLKQQCGGQFTSKMEGM
tomato_cul1	KVVKLLAYISDKDLFAEFYRKKLARLLLFDKSANDEHERSILTKLKQQCGGQFTSKMEGM
pepper_cul1	KVVKLLAYISDKDLFAEFYRKKLARLLLFDKSANDEHERSILTKLKQQCGGQFTSKMEGM
cucumber_cul1	KVVKLLAYICDKDLFAEFYRKKLARLLLFDKSANDDHERSILTKLKQQCGGQFTSKMEGM
melon_cul1	KVVKLLAYICDKDLFAEFYRKKLARLLLFDKSANDDHERSILTKLKQQCGGQFTSKMEGM
watermelon_cul1	KVVKLLAYICDKDLFAEFYRKKLARLLLFDKSANDDHERSILTKLKQQCGGQFTSKMEGM
squash_cul1	KVVKLLAYICDKDLFAEFYRKKLARLLLFDKSANDDHERSILTKLKQQCGGQFTSKMEGM
celery_cul1	KVVKLLAYISDKDLFAEFYRKKLARLLLFDKSANDEHERSILTKLKQQCGGQFTSKMEGM
lettuce_cul1	KVVKLLAYISDKDLFAEFYRKKLARLLLFDKSANDEHERSILTKLKQQCGGQFTSKMEGM
endive_cul1	KVVKLLAYISDKDLFAEFYRKKLARLLLFDKSANDEHERSILTKLKQQCGGQFTSKMEGM
chicory_cul1	KVVKLLAYISDKDLFAEFYRKKLARLLLFDKSANDEHERSILTKLKQQCGGQFTSKMEGM
carrot_cul1	KVVRLLAYISDKDLFAEFYRKKLARLLLFDKSANDEHERSILTKLKQQCGGQFTSKMEGM
beet_cul1	VTDLTLARENQTNFEEYLSQNPDASPGLDLTVTVLTTGFWPSYKSSDLNLPDEMVCVEV
spinach_cul1	VTDLTLARENQTNFEEYLGQNTDASPGLDLTVTVLTTGFWPSYKSSDLNLPDEMVCVEV
arabidopsis_cul1	VTDLTLARENQNSFEDYLGSNPAANPGIDLTVTVLTTGFWPSYKSFDINLPSEMIKCEV
brassica_cul1	VTDLTLARENQNSFEEYLGNNPAANPGIDLTVTVLTTGFWPSYKSFDINLPDEMVCVEV
radish_cul1	VTDLTLARENQTSFEEYLGNNPAANPGIDLTVTVLTTGFWPSYKSFDINLPSEMVCVEV
leek_cul1	VTDLTLARENQSSFDDYLSSNPKANSGIDLTVTVLTTGFWPSYKSFDINLPDEMVCVEI
eggplant_cul1	VTDLTLARENQASFEEYLSNNPTANPGIDLTVTVLTTGFWPSYKSFDINLPDEMVCVEV
tomato_cul1	VTDLTLARENQASFEEYLSNNPIANPGIDLTVTVLTTGFWPSYKSFDINLPDEMVCVEV
pepper_cul1	VTDLTLARENQASFEEYLSNNPAANPGIDLTVTVLTTGFWPSYKSFDINLPDEMVCVEV
cucumber_cul1	VTDLTLARENQTSFEEYLSNNPQASPGIDLTVTVLTTGFWPSYKSFDINLPDEMVCVEV
melon_cul1	VTDLTLARENQTSFEEYLSNNPQASPGIDLTVTVLTTGFWPSYKSFDINLPDEMVCVEV
watermelon_cul1	VTDLTLARENQTSFEEYLSNNPQASPGIDLTVTVLTTGFWPSYKSFDINLPDEMVCVEV
squash_cul1	VTDLTLARENQTSFEEYLSNNPQASPGIDLTVTVLTTGFWPSYKSFDINLPDEMVCVEV
celery_cul1	VTDLTLAKENQSSFEEYLGNNANVNPGIDLTVTVLTTGFWPSYKSFDINLPDEMVCVEV
lettuce_cul1	VTDLTLAKENQSHFEEYLNNNPVSPGIDLTVTVLTTGFWPSYKSFDINLPDEMVCVEV
endive_cul1	VTDLTLAKENQSHFEEYLNNNPVSPGIDLTVTVLTTGFWPSYKSFDINLPDEMVCVEV
chicory_cul1	VTDLTLAKENQSHFEEYLNNNPVSPGIDLTVTVLTTGFWPSYKSFDINLPDEMVCVEV
carrot_cul1	VTDLTLAKENQSNFEEYLNNNSNVNPGIDLTVTVLTTGFWPSYKSFDINLPDEMVCVEV
beet_cul1	FKQFYSTKTKHRKLTWVYSLGSCNINGKFGPKTIELVVGTYQAAALMLFNTSDRLSYSEI
spinach_cul1	FKQFYQTKTKHRKLTWVYSLGSCNINGKFGPKTIELVVGTYQAAALMLFNTSDRLSYSEI
arabidopsis_cul1	FKGFYETKTKHRKLTWIYSLGTCHINGKFDQKAIELIVSTYQAAVLLLFNTTDKLSYTEI
brassica_cul1	FKGFYETKTKHRKLTWIYSLGTCHLNGKFDVKPIELVVSTYQAAVLLLFNTTDKLSYTDI
radish_cul1	FKGFYETKTKHRKLTWIYSLGTCHLNGKFDHKPIELVVSTYQAAVLLLFNTTDKLSYNDI
leek_cul1	FKEFYETKTKHRKLTWIYSLGTCNINGKFETKTIELVVTTYQAAVLLLFNSADKLSYSEI
eggplant_cul1	FKEFYQTKTKHRKLTWIYSLGTCNINGKFEAKTIELVVTTYQASALLLFNASDRLSYQEI
tomato_cul1	FKEFYQTKTKHRKLTWIYSLGTCNINGKFEPKTIELVVTTYQASALLLFNASDRLSYQEI
pepper_cul1	FKEFYQTKTKHRKLTWIYSLGTCNINGKFEPKTIELVVTTYQASALLLFNASDRLSYQEI
cucumber_cul1	FREFYQTKTKHRKLTWIYSLGTCNISGKFEPKTMELIVTTYQASALLLFNSSDRLSYSEI
melon_cul1	FREFYQTKTKHRKLTWIYSLGTCNISGKFEPKTMELIVTTYQASALLLFNSSDRLSYSEI
watermelon_cul1	FREFYQTKTKHRKLTWIYSLGTCNISGKFEPKTMELIVTTYQASALLLFNSSDRLSYSEI

Fig. 70-5

squash_cul1	FREFYQTKTKHRKLTWIYSLGTCNISGKFEPKTMELIVTTYQASALLLFNSSDKLSYSEI
celery_cul1	FREFYQTKTKHRKLTWIYSLGTCNINGKFEPKTIELIVTTYQASALLLFNTSDRLSYQEI
lettuce_cul1	FREFYQTKTKHRKLTWIYSLGTCNINGKFEPKTMELIVTTYQASALLLFNLSDRLSYQEI
endive_cul1	FREFYQTKTKHRKLTWIYSLGTCNINGKFEPKTMELIVTTYQASALLLFNSSDRLSYQEI
chicory_cul1	FREFYQTKTKHRKLTWIYSLGTCNINGKFEPKTMELIVTTYQASALLLFNSSDRLSYQEI
carrot_cul1	FREFYQTKTKHRKLTWIYSLGTCNIIIGKFDPKTMELIVTTYQASALLLFNSSDRLSYNEI

beet_cul1	ATQLNLADEDLVRLVQLSLSCAKYKILLKEPNTKTVSPTDCFSFNSSFTDRMRRIRIPLPP
spinach_cul1	TTQLNLADEDLVRLVQLSLSCAKYKILLKEPSTRNVISTDCFSFNNSFTDRMRRIRIPLPP
arabidopsis_cul1	LAQLNLSHEDLVRLLLHSLSCAKYKILLKEPNTKTVSQNDAFEFNSKFTDRMRRIKIPLPP
brassica_cul1	LTQLNLSHEDLVRLLLHSLSCARYKILLKEPSTKTVSQSDSFEFNSKFTDRMRRIKIPLPP
radish_cul1	LTQLNLSHEDLVRLLLHSLSCARYKILLKEPSTKTVTQTDSEFNAKFTDRMRRIKIPLPP
leek_cul1	VQQNLNSDDDVIRLLHSLSCAKYKILNKEPATKTI TPNDHFEFNSKFTDRMRRIKIPLPP
eggplant_cul1	MTQLNLSDDDVVRLLHSLSCAKYKILNKEPSTKTI SPTDVFEFNSKFTDKMRRIKIPLPP
tomato_cul1	MTQLNLSDDDVVRLLHSLSCAKYKILNKEPSTKTI SPTDVFEFNSKFTDKMRRIKIPLPP
pepper_cul1	MTQLNLSDDDVVRLLHSLSCAKYKILNKEPSTKTI SPTDVFEFNFKFTDKMRRIKIPLPP
cucumber_cul1	MTQLNLSDDDVVRLLHSLSCAKYKILNKEPNTKTI SPNDHFEFNAKFSDKMRRIKIPLPP
melon_cul1	MTQLNLSDDDVVRLLHSLSCAKYKILNKEPNTKTI SPNDHFEFNAKFSDKMRRIKIPLPP
watermelon_cul1	MTQLNLSDDDVVRLLHSLSCAKYKILNKEPNTKTI SPNDHFEFNAKFSDKMRRIKIPLPP
squash_cul1	MTQLNLSDDDVVRLLHSLSCAKYKILNKEPNTKTI SPNDHFEFNAKFSDKMRRIKIPLPP
celery_cul1	MTQLNLSDDDVVRLLHSLSCAKYKILTKEPNNKTI SPTDYFEFNSKFTDKMRRIKIPLPP
lettuce_cul1	MTQLNLSDDDVVRLLHSLSCAKYKILLKEPNTKTI SPTDYFEFNSKFTDKMRRIKIPLPP
endive_cul1	MTQLNLSDDDVVRLLHSLSCAKYKILLKEPNTKTI SPTDFFEFSKFTDKMRRIKIPLPP
chicory_cul1	MTQLNLSDDDVVRLLHSLSCAKYKILLKEPNTKTI SPTDFFEFSKFTDKMRRIKIPLPP
carrot_cul1	MTQLNLSDDDVVRLLHSLSCAKYKILSKEPNTKTI SPTDCFQFNSKFTDKMRRIKIPLPP

beet_cul1	MDERKKVVEDVDKDRRYAIDASIVRIMKSRKVLGYQQ LITECQEQLSRMFKPDFKAIKKR
spinach_cul1	MDERKKVVEDVDKDRRYAIDASIVRIMKSRKALGYQQ LITECQEQLSRMFKPDFKAIKKR
arabidopsis_cul1	VDERKKVVEDVDKDRRYAIDAAIVRIMKSRKVLGHQQ LVSECQEQLSRMFKPDIIKAIKKR
brassica_cul1	VDERKKVVEDVDKDRRYAIDAAIVRIMKSRKVLGHQQ LVSECQEQLSRMFKPDIIKAIKKR
radish_cul1	VDERKKVVEDVDKDRRYAIDAAIVRIMKSRKVLGHQQ LVSECQEQLSRMFKPDIIKAIKKR
leek_cul1	VDEKKKVIEDVDKDRRYAIDASIVRIMKSRKVLGHQQ LVLECQEQLGRMFKPDFKAIKKR
eggplant_cul1	VDEKKKVIEDVDKDRRYAIDASIVRIMKSRKVLGYQQ LVMECQEQLGRMFKPDVKAIKKR
tomato_cul1	VDEKKKVIEDVDKDRRYAIDASIVRIMKSRKVLGYQQ LVMECQEQLGRMFKPDVKAIKKR
pepper_cul1	VDEKKKVIEDVDKDRRYAIDASIVRIMKSRKVLGYQQ LVMECQEQLGRMFKPDVKAIKKR
cucumber_cul1	VDEKKKVIEDVDKDRRYAIDASIVRIMKSRKVLGHQQ LVMECQEQLGRMFKPDFKAIKKR
melon_cul1	VDEKKKVIEDVDKDRRYAIDASIVRIMKSRKVLGHQQ LVMECQEQLGRMFKPDFKAIKKR
watermelon_cul1	VDEKKKVIEDVDKDRRYAIDASIVRIMKSRKVLGHQQ LVMECQEQLGRMFKPDFKAIKKR
squash_cul1	VDEKKKVIEDVDKDRRYAIDASIVRIMKSRKVLGHQQ LVMECQEQLGRMFKPDFKAIKKR
celery_cul1	VDEKKKVIEDVDKDRRYAIDASIVRIMKSRKVLGYQQ LVMECQEQLGRMFKPDVKAIKKR
lettuce_cul1	VDEKKKVIEDVDKDRRYAIDASIVRIMKSRKVLGYQQ LVMECQEQLGRMFKPDVKAIKKR
endive_cul1	VDEKKKVIEDVDKDRRYAIDASIVRIMKSRKVLGYQQ LVMECQEQLGRMFKPDVKAIKKR
chicory_cul1	VDEKKKVIEDVDKDRRYAIDASIVRIMKSRKVLGYQQ LVMECQEQLGRMFKPDVKAIKKR
carrot_cul1	VDEKKKVIEDVDKDRRYAIDASIVRIMKSRKVLGYQQ LVMECQEQLGRMFKPDVKAIKKR

Fig. 70-6

beet_cul1	IEDLITRDYIERDKENPQLFRYLA
spinach_cul1	IEDLITRDYIERDKENPQLFRYLA
arabidopsis_cul1	MEDLITRDYLERDKENPNMFRYLA
brassica_cul1	MEDLITRDYLERDKENANMFRYLA
radish_cul1	MEDLITRDYLERDKENPNMFRYLA
leek_cul1	IEDLIARDYLERDKDNPNLFKYLA
eggplant_cul1	IEDLITRDYLERDKDNPNLFKYLA
tomato_cul1	IEDLITRDYLERDKDNPNLFKYLA
pepper_cul1	IEDLITRDYLERDKDNPNLFKYLA
cucumber_cul1	IEDLITRDYLERDKDNPHLFRYLA
melon_cul1	IEDLITRDYLERDKDNPHLFRYLA
watermelon_cul1	IEDLITRDYLERDKDNPHLFRYLA
squash_cul1	IEDLITRDYLERDKDNPHLFRYLA
celery_cul1	IEDLITRDYLERDKDNANLFRYLA
lettuce_cul1	IEDLITRDYLERDKENPNLFRYLA
endive_cul1	IEDLITRDYLERDKENPNLFRYLA
chicory_cul1	IEDLITRDYLERDKENPNLFRYLA
carrot_cul1	IEDLITRDYLERDKDNANLFRYLA