MEAT SUBSTITUTE COMPRISING ANIMAL MYOGLOBIN

Field

Aspects and embodiments described herein relate to the field of meat substitute comprising a myoglobin protein, gene construct comprising a nucleic acid encoding said protein, a host cell comprising said gene construct and a method for producing said myoglobin or said meat substitute.

Background

Several meat substitutes have already been developed and commercialized. The flavor, color, texture and nutritional qualities of such products are not always optimal in the sense that they do not properly mimick “meat”. Moreover, they may also not have the same nutritional qualities as meat.

Therefore, there is still a need for new inventions which do not have all the drawbacks of existing food products aiming at substituting meat.

Summary

In one aspect, the present disclosure refers to a meat substitute comprising an animal myoglobin from mammoth, pig, sheep, cow, chicken or tuna or derived therefrom.

In one aspect, the present disclosure refers to a gene construct comprising a nucleic acid encoding a myoglobin as defined herein.

In one aspect, the present disclosure refers to a vector comprising a gene construct as defined herein.

In one aspect, the present disclosure refers to a host cell comprising a gene construct as defined herein.

In one aspect, the present disclosure refers to a method for producing a myoglobin as defined herein, comprising culturing the host cell as defined herein in a suitable medium and optionally recovering the host cell and/or the myoglobin.

In one aspect, the present disclosure refers to a method for producing a meat substitute as defined herein, comprising formulating the myoglobin obtainable from the method as defined herein into a meat substitute or a food ingredient.

In one aspect, the present disclosure refers to a protein, wherein said protein may be represented by a sequence comprising SEQ ID NO: 3.

Description

Accordingly, the aspects and embodiments of the present invention as described herein solve at least some of the problems and needs as discussed herein.

Meat substitute

In a first aspect there is provided a meat substitute or a food ingredient comprising an animal myoglobin, preferably a mammalian myoglobin, more preferably from mammoth, pig, sheep or cow, more preferably wherein said mammoth is a woolly mammoth (*Mammuthus primigenius*) or a steppe mammoth (*Mammuthus trogontherii*), most preferably wherein said mammoth is a steppe mammoth, or avian myoglobin, preferably from chicken, or a fish myoglobin, preferably from tuna, or a myoglobin derived therefrom.

In an embodiment, the meat substitute or food ingredient comprises an animal myoglobin from mammoth, pig, sheep, cow, chicken or tuna or derived therefrom, preferably wherein said mammoth is a woolly mammoth (*Mammuthus primigenius*) or a steppe mammoth (*Mammuthus trogontherii*), more preferably wherein said mammoth is a steppe mammoth.

An animal myoglobin may be said to be derived from a mammoth, which is preferably a woolly mammoth or a steppe mammoth, more preferably a steppe mammoth, pig, sheep, cow, chicken or tuna myoglobin when its amino acid sequence is derived from the one of a mammoth, preferably from a woolly mammoth, or a steppe mammoth, pig, sheep, cow, chicken or tuna, respectively, by addition, deletion and/or substitution of at least an amino acid. Addition, deletion and/or substitutions of two, three, four, five, six, seven, eight, nine or ten amino acids is also contemplated by the invention. Examples of myoglobin amino acid sequence from a woolly mammoth, steppe mammoth, pig, sheep, cow, chicken or tuna have been disclosed later on by a given SEQ ID NO.