

Title (en)

ANTIFREEZE PROTEINS, DNA AND EXPRESSION SYSTEMS

Title (de)

GEFRIERSCHUTZPROTEINE, DEREN DNS UND VEKTORSYSTEME

Title (fr)

PROTEINES ANTIGEL, ADN ET SYSTEMES D'EXPRESSION

Publication

**EP 1002101 A2 20000524 (EN)**

Application

**EP 98937376 A 19980731**

Priority

- CA 9800745 W 19980731
- US 90387297 A 19970731

Abstract (en)

[origin: WO9906565A2] &sect;& he winter rye, upon cold-induction or acclimation, produces a family of antifreeze proteins that are similar to pathogen-related proteins. Two of these proteins, both of which are chitinase-like proteins, are cloned using molecular biology techniques and are expressed in bacterial and yeast (Pichia) systems and Arabidopsis thaliana. The recombinant proteins showed both chitinase and antifreeze activities. The invention includes the DNA and protein sequences of the chitinase-like antifreeze proteins, any modifications of the said sequences, the expression of these proteins and their application in agriculture, food industry and medicine.

[origin: WO9906565A2] &sect;& he winter rye, upon cold-induction or acclimation, produces a family of antifreeze proteins that are similar to pathogen-related proteins. Two of these proteins, both of which are chitinase-like proteins, are cloned using molecular biology techniques and are expressed in bacterial and yeast (Pichia) systems and Arabidopsis thaliana. The recombinant proteins showed both chitinase and antifreeze activities. The invention includes the DNA and protein sequences of the chitinase-like antifreeze proteins, any modifications of the said sequences, the expression of these proteins and their appplication in agriculture, food industry and medicine.

IPC 1-7

**C12N 15/56; C12N 15/82; C12N 9/24; C12N 1/19; C12N 1/21; A01H 5/00; A01K 67/027; A23L 3/36; A23G 9/00**

IPC 8 full level

**C07K 14/415 (2006.01); C12N 1/21 (2006.01); C12N 9/24 (2006.01); C12N 15/29 (2006.01); C12N 15/82 (2006.01); A61K 38/00 (2006.01)**

CPC (source: EP)

**C07K 14/415 (2013.01); C12N 9/2442 (2013.01); C12N 15/8261 (2013.01); C12N 15/8273 (2013.01); C12Y 302/01014 (2013.01); A01K 2217/05 (2013.01); A61K 38/00 (2013.01); C07K 2319/02 (2013.01); Y02A 40/146 (2017.12)**

Citation (search report)

See references of WO 9906565A2

Designated contracting state (EPC)

AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE

DOCDB simple family (publication)

**WO 9906565 A2 19990211; WO 9906565 A3 19990603; AU 8620698 A 19990222; CA 2299620 A1 19990211; CN 1273604 A 20001115; EP 1002101 A2 20000524**

DOCDB simple family (application)

**CA 9800745 W 19980731; AU 8620698 A 19980731; CA 2299620 A 19980731; CN 98809742 A 19980731; EP 98937376 A 19980731**