

Title (en)

METHOD FOR PRODUCING MULTIPLE UNSATURATED FATTY ACIDS IN PLANTS

Title (de)

VERFAHREN ZUR HERSTELLUNG MEHRFACH UNGESÄTTIGTER FETTSÄUREN IN PFLANZEN

Title (fr)

PROCEDE POUR PRODUIRE DES ACIDES GRAS POLYINSATURES DANS DES PLANTES

Publication

**EP 1501932 A2 20050202 (DE)**

Application

**EP 03747357 A 20030425**

Priority

- DE 10219203 A 20020429
- EP 0304297 W 20030425

Abstract (en)

[origin: WO03093482A2] The invention relates to a method for producing fatty acid esters which contain unsaturated fatty acids with at least three double-bonds, and free unsaturated fatty acids having a content of at least 1 wt.-%, in relation to the total amount of fatty acids contained in plants, by expression of at least one nucleic acid sequence which codes for a polypeptide having D-6-desaturase activity, and at least one nucleic acid sequence which codes for a polypeptide having D-6-elongase activity. Advantageously, said nucleic acid sequences can be expressed, optionally, together with a third nucleic acid sequence in the transgenic plant, which codes for a polypeptide having D-5-desaturase activity. The invention also relates to the use of defined nucleic acid sequences which code for polypeptides having a D-6-desaturase activity, D-6-elongase activity or D-5-desaturase activity, selected from a group of nucleic acid sequences, or to the use of nucleic acid structures containing the above-mentioned nucleic acid sequences.

IPC 1-7

**C12N 15/82; C12P 7/64**

IPC 8 full level

**C12P 7/6432** (2022.01); **C12N 9/02** (2006.01); **C12N 15/82** (2006.01); **C12P 7/6472** (2022.01); **C12P 7/6481** (2022.01)

CPC (source: EP US)

**C12N 9/0083** (2013.01 - EP US); **C12N 15/8247** (2013.01 - EP US); **C12P 7/6432** (2022.01 - EP US); **C12P 7/6472** (2013.01 - EP US); **C12P 7/6481** (2013.01 - EP US)

Citation (examination)

- WO 02057464 A2 20020725 - BASF PLANT SCIENCE GMBH [DE], et al
- BEAUDOIN FREDERIC ET AL: "Heterologous reconstitution in yeast of the polyunsaturated fatty acid biosynthetic pathway", PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES, NATIONAL ACADEMY OF SCIENCES, US, vol. 97, no. 12, 6 June 2000 (2000-06-06), pages 6421 - 6426, XP002200201, ISSN: 0027-8424, DOI: 10.1073/PNAS.110140197
- DOMERGUE F ET AL: "Acyl carriers used as substrates by the desaturases and elongases involved in very long-chain polyunsaturated fatty acids biosynthesis reconstituted in yeast", JOURNAL OF BIOLOGICAL CHEMISTRY, AMERICAN SOCIETY FOR BIOCHEMISTRY AND MOLECULAR BIOLOGY, US, vol. 278, no. 37, 12 September 2003 (2003-09-12), pages 35115 - 35126, XP002313880, ISSN: 0021-9258, DOI: 10.1074/JBC.M305990200
- ALLAN G GREEN: "From alpha to omega-producing essential fatty acids in plants", NATURE BIOTECHNOLOGY, vol. 22, no. 6, 1 June 2004 (2004-06-01), pages 680 - 682, XP055210838, ISSN: 1087-0156, DOI: 10.1038/nbt0604-680

Designated contracting state (EPC)

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LU MC NL PT RO SE SI SK TR

DOCDB simple family (publication)

**WO 03093482 A2 20031113; WO 03093482 A3 20041104**; AU 2003232512 A1 20031117; AU 2003232512 B2 20090827; CA 2485060 A1 20031113; CA 2870809 A1 20031113; CA 2870809 C 20180213; CA 2977570 A1 20031113; DE 10219203 A1 20031113; EP 1501932 A2 20050202; US 2007028326 A1 20070201; US 7893320 B2 20110222

DOCDB simple family (application)

**EP 0304297 W 20030425**; AU 2003232512 A 20030425; CA 2485060 A 20030425; CA 2870809 A 20030425; CA 2977570 A 20030425; DE 10219203 A 20020429; EP 03747357 A 20030425; US 51162104 A 20041019