Title (en)

THERMOPHILIC ORGANISMS FOR CONVERSION OF LIGNOCELLULOSIC BIOMASS TO ETHANOL

Title (de)

THERMOPHILE ORGANISMEN ZUR UMWANDLUNG VON LIGNOZELLULOSE-BIOMASSE IN ETHANOL

Title (fr)

ORGANISMES THERMOPHILES POUR LA CONVERSION DE BIOMASSE LIGNO-CELLULOSIQUE EN ETHANOL

Publication

EP 2021487 A2 20090211 (EN)

Application

EP 07783037 A 20070501

Priority

- US 2007067941 W 20070501
- US 79638006 P 20060501
- US 2006042442 W 20061031

Abstract (en)

[origin: EP2397556A1] Mutant thermophilic organisms that consume a variety of biomass derived substrates are disclosed herein. Strains of Thermoanaerobacterium saccharolyticum with acetate kinase and phosphotransacetylase expression eliminated are disclosed herein. Further, strain ALK1 has been engineered by site directed homologous recombination to knockout both acetic acid and lactic acid production. Continuous culture involving a substrate concentration challenge lead to evolution of ALK1, and formation of a more robust strain designated ALK2. The organisms may be utilized for example in thermophilic SSF and SSCF reactions performed at temperatures that are optimal for cellulase activity to produce near theoretical ethanol yields without expressing pyruvate decarboxylase.

IPC 8 full level

C12P 7/06 (2006.01)

CPC (source: EP)

C12N 1/205 (2021.05); **C12N 9/0006** (2013.01); **C12N 9/1029** (2013.01); **C12N 9/1217** (2013.01); **C12P 7/10** (2013.01); **C12Y 203/01008** (2013.01); **C12Y 207/02001** (2013.01); C12R 2001/145 (2021.05); Y02E 50/10 (2013.01)

Citation (search report)

See references of WO 2007130984A2

Designated contracting state (EPC)

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

Designated extension state (EPC)

AL BA HR MK RS

DOCDB simple family (publication)

EP 2397556 A1 20111221; AU 2007248091 A1 20071115; BR PI0709758 A2 20110726; CA 2651011 A1 20071115; CN 101868548 A 20101020; EP 2021487 A2 20090211; JP 2010504734 A 20100218; ZA 200809352 B 20090826

DOCDB simple family (application)

EP 11177420 A 20070501; AU 2007248091 A 20070501; BR PI0709758 A 20070501; CA 2651011 A 20070501; CN 200780019959 A 20070501; EP 07783037 A 20070501; JP 2009510031 A 20070501; ZA 200809352 A 20081031