



(51) International Patent Classification:

C12N 9/12 (2006.01) *C12P* 7/18 (2006.01)
C12N 9/24 (2006.01) *C12P* 7/20 (2006.01)
C12N 15/52 (2006.01) *C12P* 7/42 (2006.01)
C12N 1/21 (2006.01)

(21) International Application Number:

PCT/US2011/060235

(22) International Filing Date:

10 November 2011 (10.11.2011)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

12/960,646 6 December 2010 (06.12.2010) US

(71) Applicant (*for all designated States except US*): **E. I. DU PONT DE NEMOURS AND COMPANY** [US/US];
1007 Market Street, Wilmington, Delaware 19898 (US).

(72) Inventor; and

(75) Inventor/Applicant (*for US only*): **VAN DYK, Tina, K.** [US/US]; 119 Cambridge Drive, Wilmington, Delaware 19803 (US).

(74) Agent: **KOBOS, Robert K.**; E. I. du Pont de Nemours and Company, Legal Patent Records Center, 4417 Lancaster Pike, Wilmington, Delaware 19805 (US).

(81) Designated States (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report (Art. 21(3))
- with sequence listing part of description (Rule 5.2(a))

(54) Title: RECOMBINANT BACTERIA HAVING THE ABILITY TO METABOLIZE SUCROSE

(57) Abstract: Recombinant bacteria capable of metabolizing sucrose are described. The recombinant bacteria comprise in their genome or on at least one recombinant construct: a nucleotide sequence from *Pseudomonas fluorescens* Pf5 (ATCC® BAA-477) encoding a polypeptide having sucrose transporter activity and a nucleotide sequence from *Pseudomonas fluorescens* Pf5 (ATCC® BAA-477) encoding a polypeptide having sucrose hydrolase activity. These nucleotide sequences are each operably linked to the same or a different promoter. Recombinant bacteria capable of metabolizing sucrose to produce glycerol and/or glycerol-derived products such as 1,3-propanediol and 3-hydroxypropionic acid are also described.



WO 2012/078311 A1