



(51) International Patent Classification:

C12N 9/10 (2006.01) *C12N 1/14* (2006.01)
C12P 21/00 (2006.01) *C12N 15/80* (2006.01)
C12N 5/10 (2006.01)

(21) International Application Number:

PCT/EP2011/070956

(22) International Filing Date:

24 November 2011 (24.11.2011)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

61/417,144 24 November 2010 (24.11.2010) US

(71) Applicants (for all designated States except US): **NO-VARTIS INTERNATIONAL PHARMACEUTICAL LTD.**; 131 Front Street, Hamilton (BM). **GLYKOS FINLAND Oy** [FI/FI]; Viikinkaari 6, FI-00790 Helsinki (FI).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **NATUNEN, Jari** [FI/FI]; Oolannintie 10 E 18, FI-01520 Vantaa (FI). **KANERVA, Anne** [FI/FI]; Riihikallionkuja 8, FI-00890 Helsinki (FI). **HILTUNEN, Jukka** [FI/FI]; Hakaniemenranta 28 B 72, FI-00530 Helsinki (FI). **SALOHEIMO, Markku**

[FI/FI]; Kyntäjantie 18b, FI-00390 Helsinki (FI). **VIS-KARI, Heli** [FI/FI]; Penkaskuja 3, FI-03100 Nummela (FI). **HUUSKONEN, Anne** [FI/FI]; Mechelininkatu 47 A 29, FI-00250 Helsinki (FI).

(74) Agent: **CABINET PLASSERAUD**; Group No. 280, 235 cours Lafayette, F-69006 Lyon (FR).

(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.

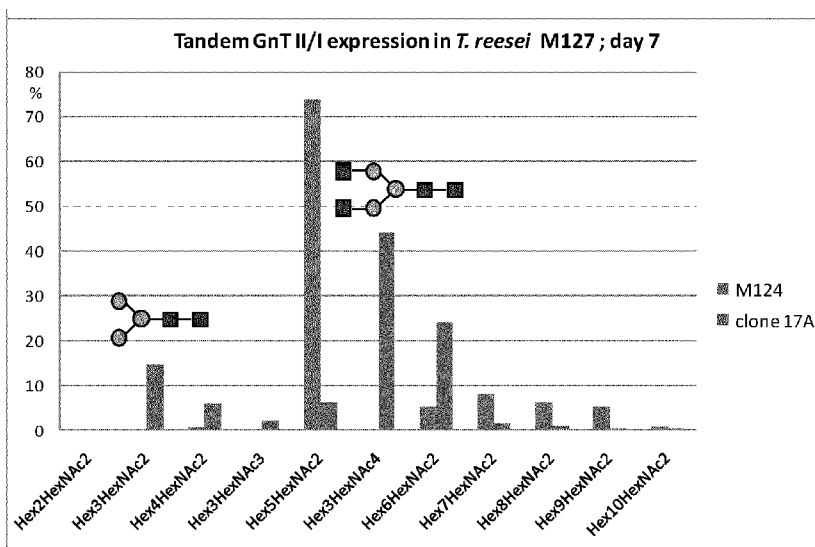
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK,

[Continued on next page]

(54) Title: FUSION ENZYMES HAVING N-ACETYLGLUCOSAMINYLTRANSFERASE ACTIVITY

Figure 27

D.



(57) Abstract: The present disclosure relates to recombinant proteins having N-acetylglucosaminyltransferase activity. The present disclosure further relates to methods for producing complex N-glycans including the steps of providing host cells containing such recombinant proteins and culturing the host cells such that the recombinant proteins are expressed.



SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

— *with sequence listing part of description (Rule 5.2(a))*

Published:

(88) Date of publication of the international search report:

3 January 2013

— *with international search report (Art. 21(3))*

— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*