(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
19 January 2012 (19.01.2012)

PCT

(10) International Publication Number
WO 2012/007587 A1

(51) International Patent Classification:
C12N 15/82 (2006.01)

(21) International Application Number:
PCT/EP2011/062180

(22) International Filing Date:
15 July 2011 (15.07.2011)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
10169888.4 16 July 2010 (16.07.2010) EP

(71) Applicant *(for all designated States except US)*: **PHILIP MORRIS PRODUCTS S.A.** [CH/CH]; Quai Jeanrenaud 3, CH-2000 Neuchatel (CH).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **CARRARO, Andrea** [IT/CH]; Rebstockweg 51, CH-3232 Ins (CH). **FAULKNER, John** [GB/CH]; Rue de la gare 24, CH-2023 Gorgier (CH). **KLIPFEL, Yorick** [CH/CH]; Chemin du Petit-Bois 16, CH-1113 St-Saphorin-sur-Morges (CH). **MIRONOV, Oleg** [CH/CH]; Rue des Battieux 1, CH-2000 Neuchatel (CH). **OISHI, Karen** [US/CH]; Rue des Battieux 15, CH-2000 Neuchatel (CH). **ROESTI, Sandrine** [FR/CH]; Es Males Vignes 6, CH-1422 Grandson (CH).

(74) Agent: **VOSSIUS & PARTNER (No. 31)**; Siebertstraße 4, 81675 München (DE).

(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, RO, RS, RU, 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, 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))*

(54) **Title**: METHODS FOR PRODUCING PROTEINS IN PLANTS

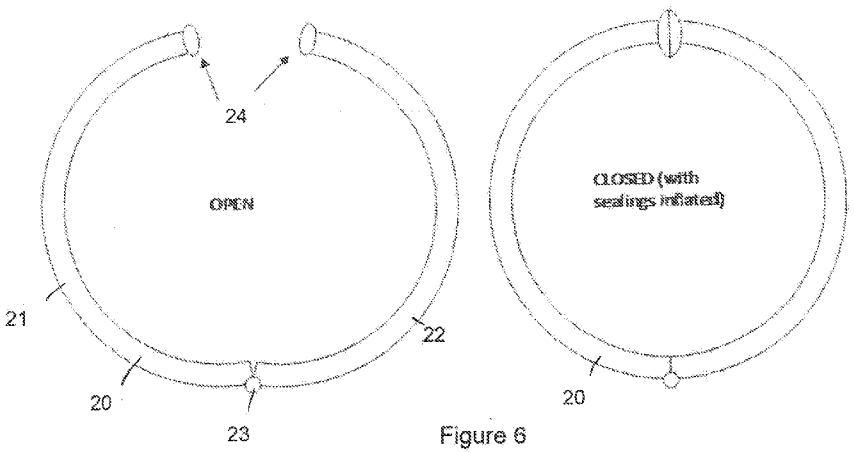


Figure 6

(57) **Abstract**: The present invention relates to methods for expressing proteins of interest, particularly pharmaceutically valuable proteins, transiently in plants. In particular, the invention provides an improved method for introducing Agrobacterium cells into a whole plant or a plant organ. The methods of the invention provides efficient agroinfiltration of many plants singly or simultaneously resulting in a yield of recombinant proteins that is higher than that obtained by other methods. The methods can be readily scaled and automated to meet changing demands of the recombinant protein.

WO 2012/007587 A1