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International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 6 : C12N 15/55, 9/16, 1/21 // (C12N 1/21, C12R 1:19, 1:37) — A1

(11) International Publication Number: WO 96/40938

(43) International Publication Date: 19 December 1996 (19.12.96)

(21) International Application Number: PCT/US96/08509

(22) International Filing Date: 4 June 1996 (04.06.96)

(30) Priority Data:
08/481,179 7 June 1995 (07.06.95) US

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(81) Designated States: AL, AM, AU, BB, BG, BR, CA, CN, CZ, EE, FI, GE, HU, IL, IS, JP, KG, KP, KR, LK, LR, LT, LV, MD, MG, MK, MN, MX, NO, NZ, PL, PT, RO, SG, SI, SK, TR, TT, UA, UZ, VN, ARIPO patent (KE, LS, MW, SD, SZ, UG), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).

Published
With international search report.

(54) Title: CHONDROITINASE PRODUCTION IN RECOMBINANT PROTEUS VULGARIS STRAINS

(57) Abstract

Plasmids pLP^2-1531, which encodes chondroitinases I and II, and pLP^2-1521, which encodes chondroitinase I, are provided. These plasmids are used to transform wild-type *E. coli* and *P. vulgaris* cells. The transformed cells produce DNA encoding the production of chondroitinases I and II or chondroitinase I in the absence of natural exogenous chondroitinases I and II inducers. Additionally, the transformed *P. vulgaris* cells in the absence of exogenous chondroitinases I and II inducers, produce the respective enzymes in amounts in excess of those produced by wild-type *P. vulgaris* in the presence of exogenous chondroitinases I and II inducer(s). Starting plasmid pLP^2-751 and intermediate plasmids pLP^2-770, pLP^2-1512, pLP^2-1263, pLP^2-1508, pLP^2-1510, pLP^2-1514, pLP^2-1518, and pLP^2-1525 are also provided. These intermediate plasmids are typically used in the preparation of pLP^2-1531 and pLP^2-1521. A BglII/EcoRI fragment of about 3970 bp derived from pLP^2-1512, a EcoRI/SmaI fragment of about 2550 bp derived from pLP^2-1514, and a BglII/SmaI(AvaI) fragment of about 6520 bp derived from pLP^2-1518 are further disclosed. Also contemplated is the use of transformed *P. vulgaris* cells to produce chondroitinase I and/or II. The *P. vulgaris* cells above are cultured in a bacterial culture medium and in the absence of an exogenous chondroitinase I and II inducer. The cells are then harvested from the culture, and the chondroitinase I and/or II enzymes are recovered.