

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
9 October 2008 (09.10.2008)

PCT

(10) International Publication Number
WO 2008/119176 A1

(51) International Patent Classification:

C07C 315/04 (2006.01) A61P 19/10 (2006.01)
C07B 43/06 (2006.01) A61K 31/277 (2006.01)
C07C 317/32 (2006.01) A61P 35/04 (2006.01)

(21) International Application Number:

PCT/CA2008/000605

(22) International Filing Date: 31 March 2008 (31.03.2008)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

60/921,321 2 April 2007 (02.04.2007) US

(71) Applicant (for all designated States except US): **MERCK FROSST CANADA LTD.** [CA/CA]; 16711 Trans-Canada Highway, Kirkland, Québec H9H 3L1 (CA).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **O'SHEA, Paul** [IE/CA]; 16711 Trans-Canada Highway, Kirkland, Québec H9H 3L1 (CA). **GOSSELIN, Francis** [CA/CA]; 16711 Trans-Canada Highway, Kirkland, Québec H9H 3L1 (CA).

(74) Agent: **OGILVY RENAULT LLP/S.E.N.C.R.L., s.r.l.**; Suite 1600, 1981 McGill College Avenue, Montréal, Québec H3A 2Y3 (CA).

(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, 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, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, 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, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

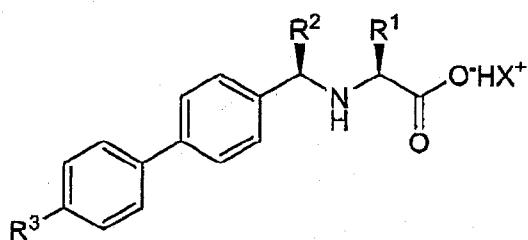
Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))

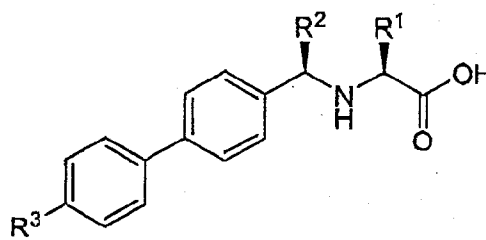
Published:

- with international search report

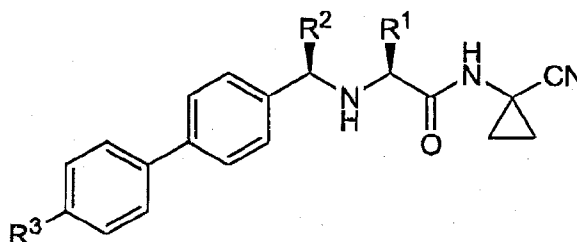
(54) Title: AMIDATION PROCESS FOR THE PREPARATION OF CATHEPSIN K INHIBITORS



IIA



IIB



I

(57) Abstract: This invention describes an amidation process whereby amino acids of the Formulae IIA or IIB can be activated and treated with an amine in the presence of a base to yield amides of the Formula (I), without loss of optical purity.