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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
30 March 2006 (30.03.2006)

PCT

(10) International Publication Number
WO 2006/032631 A1

(51) International Patent Classification:
C07D 401/12 (2006.01) *C07D 403/12* (2006.01)
A61K 31/4709 (2006.01) *C07D 487/04* (2006.01)
A61P 35/00 (2006.01) *C07D 413/14* (2006.01)
A61K 31/4439 (2006.01) *A61K 31/519* (2006.01)
C07D 401/14 (2006.01) *A61K 31/501* (2006.01)

(21) International Application Number:
PCT/EP2005/054604

(22) International Filing Date:
16 September 2005 (16.09.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
04077630.4 22 September 2004 (22.09.2004) EP
60/613,902 28 September 2004 (28.09.2004) US

(71) Applicant *(for all designated States except US)*: **JANSSEN PHARMACEUTICA N.V.** [BE/BE]; Turnhoutseweg 30, B-2340 Beerse (BE).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **LACRAMPE, Jean, Fernand, Armand** [FR/FR]; Janssen-Cilag, Campus de Maigremont B.P. 615, F-27106 Val de Reuil Cedex (FR). **MEYER, Christophe** [FR/FR]; Janssen-Cilag, Campus de Maigremont B.P. 615, F-27106 Val de Reuil Cedex (FR). **LIGNY, Yannick, Aimé, Eddy** [FR/FR]; Janssen-Cilag, Campus de Maigremont B.P. 615, F-27106 Val de Reuil Cedex (FR). **CSOKA, Imre, Christian, Francis** [FR/FR]; Janssen-Cilag, Campus de Maigremont B.P. 615, F-27106 Val de Reuil Cedex (FR). **VAN HIJFTE, Luc** [BE/FR]; Janssen-Cilag, Campus de Maigremont B.P. 615, F-27106 Val de Reuil Cedex (FR). **ARTS, Janine** [NL/NL]; Janssen Pharmaceutica N.V., Turnhoutseweg 30, B-2340 Beerse (BE). **SCHOENTJES, Bruno** [FR/FR]; Janssen-Cilag, Campus de Maigremont B.P. 615, F-27106 Val de Reuil Cedex (FR). **WERMUTH, Camille, Georges** [FR/FR]; Prestwick Chemical Inc., Boulevard Gonthier d'Andernach Parc d'Innovation, F-67400 Illkirck (FR). **GIETHLEN, Bruno** [FR/FR]; Prestwick Chemical Inc., Boulevard Gonthier d'Andernach Parc d'Innovation, F-67400 Illkirch (FR). **CONTRERAS, Jean-Marie** [FR/FR]; Prestwick Chemical Inc., Boulevard Gonthier d'Andernach Parc d'Innovation, F-67400 Illkirch (FR). **JOUBERT, Muriel** [FR/FR]; Prestwick Chemical Inc., Boulevard Gonthier d'Andernach Parc d'Innovation, F-67400 Illkirch (FR).

(74) Common Representative: **JANSSEN PHARMACEUTICA N.V.**; Turnhoutseweg 30, B-2340 Beerse (BE).

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

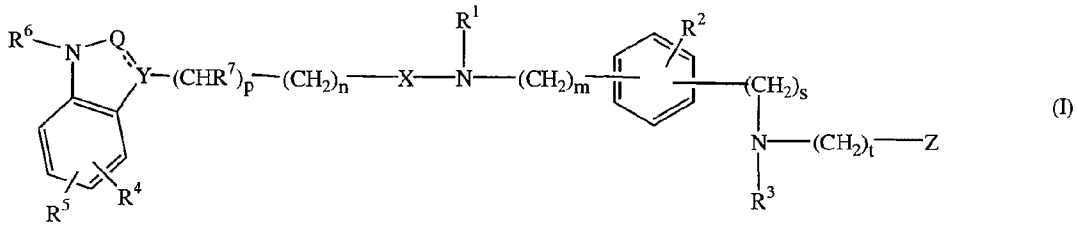
(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, 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)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG,*

[Continued on next page]

(54) Title: INHIBITORS OF THE INTERACTION BETWEEN MDM2 AND P53



(I)

(57) Abstract: The present invention provides compounds of formula (I), their use as an inhibitor of a p53-MDM2 interaction as well as pharmaceutical compositions comprising said compounds of formula (I) wherein n, m, p, s, t, R^1, R^2, R^3, R^4, R^5, R^6, R^7, X, Y, Q and Z have defined meanings.

WO 2006/032631 A1

SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

— *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for all designations*

— *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for all designations*

— *of inventorship (Rule 4.17(iv)) for US only*

Published:

— *with international search report*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.