

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
15 December 2005 (15.12.2005)

PCT

(10) International Publication Number
WO 2005/118578 A1

(51) International Patent Classification⁷: **C07D 417/06**,
417/04, 233/84, 233/90, 409/04, 413/04, 403/04, 401/04,
C07C 211/29, A61K 31/4439, 31/501, 31/502, 31/427,
31/422, 31/4245

KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, 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.

(21) International Application Number:

PCT/EP2005/052369

(22) International Filing Date: 24 May 2005 (24.05.2005)

(25) Filing Language: English

(26) Publication Language: English

(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, 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).

(30) Priority Data:

PCT/EP2004/050933 26 May 2004 (26.05.2004) EP

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

(72) Inventors; and

(75) Inventors/Applicants (for US only): **BOECKX, Gustaaf,**
Maria [BE/BE]; c/o Janssen Pharmaceutica N.V., Turn-
houtseweg 30, B-2340 Beerse (BE). **VAN LOMMEN,**
Guy, Rosalia, Eugeen [BE/BE]; c/o Janssen Pharma-
ceutica N.V., Turnhoutseweg 30, B-2340 Beerse (BE).
DOYON, Julien, Georges, Pierre-Olivier [FR/BE]; c/o
Janssen Pharmaceutica N.V., Turnhoutseweg 30, B-2340
Beerse (BE). **COESEMANS, Erwin** [BE/BE]; c/o Janssen
Pharmaceutica N.V., Turnhoutseweg 30, B-2340 Beerse
(BE).

(74) Common Representative: **JANSSEN PHARMACEU-**
TICA 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,

Declarations under Rule 4.17:

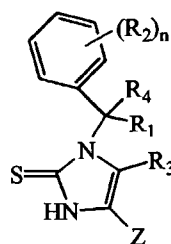
- as to applicant's entitlement to apply for and be granted
a patent (Rule 4.17(ii)) for the following designations AE,
AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ,
CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE,
EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS,
JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV,
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, 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, 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
- of inventorship (Rule 4.17(iv)) for US only

Published:

- with international search report

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

(54) Title: **MERCAPTOIMIDAZOLES AS CCR2 RECEPTOR ANTAGONISTS**



(I)

(57) Abstract: The present invention relates to a compound of formula (I) a N-oxide, a pharmaceu-
tically acceptable addition salt, a quaternary amine, a polymorphic form or a stereochemically iso-
meric form thereof, wherein R_1 represents hydrogen, C_{1-6} alkyl, C_{3-7} cycloalkyl, C_{1-6} alkyloxy C_{1-6} alkyl,
di(C_{1-6} alkyl)amino C_{1-6} alkyl, aryl or heteroaryl; each R_2 independently represents halo, C_{1-6} alkyl,
 C_{1-6} alkyloxy, C_{1-6} alkylthio, polyhalo C_{1-6} alkyl, polyhalo C_{1-6} alkyloxy, cyano, aminocarbonyl, amino,
mono- or di(C_{1-6} alkyl)amino, nitro, aryl or aryloxy; R_3 represents hydrogen, cyano, optionally subst
ituted C_{1-6} alkyl, $C(=O)-O-R_5$, $C(=O)-NR_{6a}R_{6b}$, $C(=S)-NR_{6a}R_{6b}$, $S(=O)_2-NR_{6a}R_{6b}$ or $C(=O)-R_7$; R_4
represents hydrogen or C_{1-6} alkyl; n is 1, 2, 3, 4 or 5; Z represents a cyclic ring system. The invention
also relates to processes for preparing the compounds of formula (I), their use as CCR2 antagonists

and pharmaceutical compositions comprising them.