9900628-0
IPOS

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International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 6 : C07D 211/46, 405/12, 405/14, 211/58, A61K 31/445 — A1

(11) International Publication Number: WO 98/06697

(43) International Publication Date: 19 February 1998 (19.02.98)

(21) International Application Number: PCT/US97/13894

(22) International Filing Date: 13 August 1997 (13.08.97)

(30) Priority Data:
08/700,722 15 August 1996 (15.08.96) US

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(81) Designated States: AL, AM, AU, AZ, BA, BB, BG, BR, BY, CA, CN, CZ, EE, GE, HU, IL, IS, JP, KG, KR, KZ, LC, LK, LR, LT, LV, MD, MG, MK, MN, MX, NO, NZ, PL, RO, RU, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UZ, VN, YU, ARIPO patent (GH, KE, LS, MW, SD, SZ, UG, ZW), 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

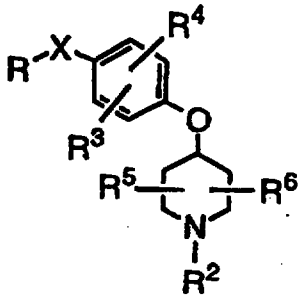
With international search report.

Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.

(54) Title: ETHER MUSCARINIC ANTAGONISTS

(57) Abstract

1,4 Di-substituted piperidine muscarinic antagonists of formula (I) or an isomer, pharmaceutically acceptable salt, ester or solvate thereof, wherein X is a bond, -O-, -S-, -SO-, $-SO_2-$, -CO-, $-C(OR^7)_2-$, $-CH_2-O-$, $-O-CH_2-$, -CH=CH-, $-CH_2-$, $-CH(C_1-C_6$ alkyl)-, $-C(C_1-C_6$ alkyl$)_2-$, $-CONR^{17}-$, $-NR^{17}CO-$, $-O-C(O)NR^{17}-$, $-NR^{17}C(O)-O-$, $-SO_2NR^{17}-$ or $-NR^{17}SO_2-$; R is cycloalkyl, optionally substituted phenyl or optionally substituted pyridyl; R^2 is H, alkyl, optionally substituted cycloalkyl, cycloalkenyl, t-butoxycarbonyl or optionally substituted piperidinyl; and the remaining variables are as defined in the specification, are disclosed. Compounds of formula (I) are useful for treating cognitive disorders such as Alzheimer's disease. Also disclosed are pharmaceutical compositions, methods of preparation and combinations of compounds of formula (I) with ACh'ase inhibitors.



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