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(54) Title: ARYL SUBSTITUTED CYCLIC AMINES AS SELECTIVE DOPAMINE D3 LIGANDS

(57) Abstract

Compounds and their pharmaceutically acceptable salts suitable for treating central nervous system disorders associated with the dopamine D3 receptor activity of structural Formula (I) where X and Y are at the 5, 6, or 7 position wherein: i) n is 1 then X is (CH₂)_mCONR₄R₅, (CH₂)_mSO₂R₃, (CH₂)_mSO₂NR₄R₅, (CH₂)_mNR₄CONHR₅, (CH₂)_mNHSO₂R₃, (CH₂)_mNHCOR₃, or C(O)R₄ (where m is 0 or 1, except that where m is 0, the Y is not hydrogen or halogen); and -Y is R₄, (CH₂)_pCONR₄R₅, (CH₂)_pCN, (CH₂)_pSO₂NR₄R₅, OR₆, (CH₂)_pSO₂R₃, (CH₂)_pNHSO₂R₃, halogen or (CH₂)_pNHCOR₃ (where p is 0 or 1); ii) n is 0 or 1 then X and Y are in *ortho*-positions relative to each other and are jointly: a) -C(O)NR₁₀C(O)-, b) -C(O)NR₄(CH₂)_nNR₁₀C(O)- (where x is 0 or 1), c) -CH₂NR₁₀C(O)-, d) -(CH₂)₂NR₁₀C(O)-, e) -CH₂C(O)NR₁₀-, f) -N(R₃)-C(O)-N(R₃)-, g) -N(R₃)-C(O)-O-, h) -N-C(R₇)-N(R₃)-, or j) -CH₂N(R₈)CH₂-; or iii) n is 0 and Y is OR₉ then X is (CH₂)_mCONR₄R₅, (CH₂)_mSO₂NR₄R₅, (CH₂)_mNR₄CONHR₅, (CH₂)_mSO₂R₃, (CH₂)_mNHSO₂R₃ or (CH₂)_mNHCOR₃, C(O)R₄ (where m is 0 or 1). A compound of structural Formula (II) or its pharmaceutically acceptable salts where one of A, B, C, or D is nitrogen and remaining positions are CH; n is 1 or 2; X and Y are: i) substituted at positions A, B, C, or D wherein X is (CH₂)_mCONR₄R₅, (CH₂)_mCN, (CH₂)_mSO₂NR₄R₅, OSO₂R₃, (CH₂)_mNR₄CONHR₅, (CH₂)_mSO₂R₃, (CH₂)_mNHSO₂R₃ or (CH₂)_mNHCOR₃, C(O)R₄ (where m is 0 or 1, except that where m is 0, Y is not hydrogen or halogen); and Y is R₄, (CH₂)_pCONR₄R₅, (CH₂)_pCN, (CH₂)_pSO₂NR₄R₅, OR₆, OSO₂R₃, (CH₂)_pSO₂R₃, (CH₂)_pNHSO₂R₃, halogen or (CH₂)_pNHCOR₃ (where p is 0 or 1); or ii) jointly in an *ortho*-positions relative to each other and are: -C(O)NR₄C(O)-, -CH₂NR₄C(O)-, -CH₂C(O)NR₄- or -CH₂N(R₄)CH₂-. A compound of structural Formula (III) or its pharmaceutically acceptable salts wherein one of E or F is N and the other is S; n is 1 or 2. The R₁-10 groups for structural Formula (I), (II) and (III) are as defined above.

