ABSTRACT

The use of human CB_2 receptor-specific agonists of formula (I) or (I') for preparing immunomodulating drugs is disclosed. In formulae (I) and (I'), R_1 is a group selected from $-CH_2CHR_{10}NR_6R_{11}$, $-(CH_2)_2NR'_6R'_{11}$, $-CHR_9CH_2NR'_6R'_{11}$, $-(CH_2)_nZ$ and $-COR_8$; R'_1 is a $-CH_2CHR_{10}NR_6R_{11}$ or $-(CH_2)_2NR'_6R'_{11}$ group; R_2 and R'_2 are hydrogen, halogen or C_{1-4} alkyl; R_3 is hydrogen, C_{1-4} alkyl or a group selected from $-CH_2CHR_{10}NR_6R_{11}$, $-(CH_2)_2NR'_6R'_{11}$ and $-COR_8$; R'_3 is a $=CR_6R_8$ group; R_4 has one of the meanings given for R_5 or is a $-COR_8$ group; R_5 is hydrogen, C_{1-4} alkyl, C_{1-4} alkoxy, a halogen atom, a CF_3 group, an OCF_3 group or C_{1-4} alkylthio; R'_5 has one of the meanings given for R_5 and is in the 5 or 6 position of the indene ring; R_6 is hydrogen or C_{1-4} alkyl; R'_6 is C_{1-4} alkyl; R_7 has one of the meanings given for R_5 or R_7 and R_9 together form a $-Y-CH_2-$ group attached to the indole ring in the 7 position by a group Y; R_8 is phenyl substituted one to four times by a substituent selected from halogen, C_{1-4} alkyl or C_{1-4} alkoxy; a polycyclic ring selected from naphth-1-yl, naphth-2-yl, 1,2,3,4-tetrahydronaphth-1-yl, 1,2,3,4-tetrahydronaphth-5-yl, anthryl, benzofuryl, benzothien-2-yl, benzothien-3-yl, 2-, 3-, 4- or 8-quinolyl, said polycyclic rings optionally being substituted once or twice by a substituent selected from C_{1-4} alkyl, C_{1-4} alkoxy, C_{1-4} alkylthio, halogen, cyano, hydroxyl, trifluoromethyl and imidazol-1-yl; R_{10} and R_{11} together are a group selected from $-CH_2-O-CH_2-CR_{12}R_{13}-$ and $-(CH_2)_p-CR_{12}R_{13}-$, wherein the carbon atom substituted by R_{12} and R_{13} is attached to the nitrogen atom; R'_{11} is C_{1-4} alkyl; or R'_{11} and R'_6, taken together with the nitrogen atom to which they are attached, form a group selected from morpholin-4-yl, thiomorpholin-4-yl, piperidin-1-yl and pyrrolidin-1-yl; each of R_{12} and R_{13} is independently hydrogen or C_{1-4} alkyl; n is 2, 3, 4 or 5; p is 2 or 3; Z is a methyl group or a halogen atom; and Y is a methylene group or an oxygen atom.

Application: immunomodulating drugs