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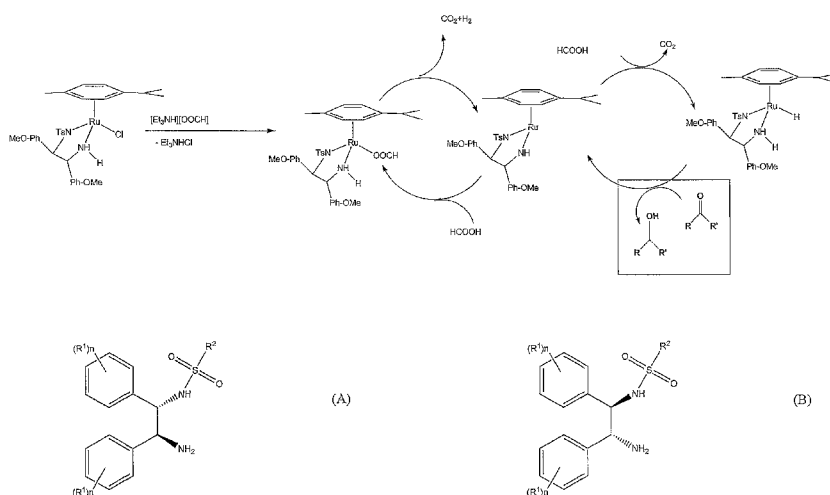
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(54) Title: ASYMMETRIC CATALYTIC REDUCTION OF OXCARBAZEPINE



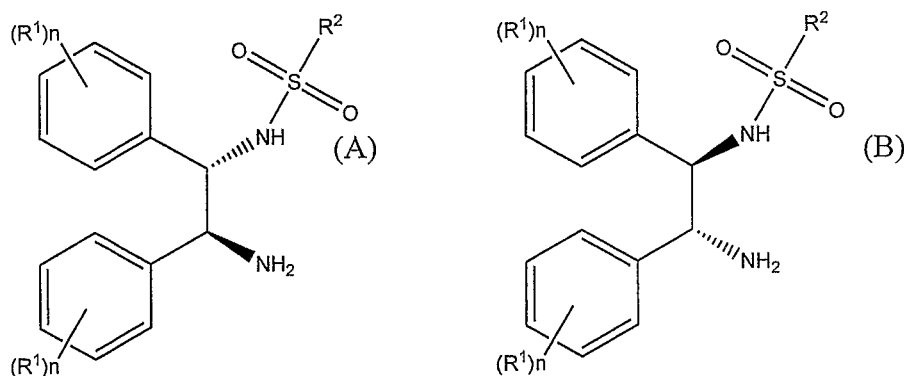
(57) **Abstract:** A process for preparing (S)-(+)- 10,11 -dihydro-10-hydroxy-5H- dibenz/b,f/azepine-5-carboxamide or (R)-(-)-10,11-dihydro-10-hydroxy-5H- dibenz/b,f/azepine-5-carboxamide, by reduction of oxcarbazepine in the presence of a catalyst and a hydride source is disclosed. The catalyst is prepared from a combination of $[RuX_2(L)_2]$ wherein X is chlorine, bromine or iodine, and L is an aryl or aryl-aliphatic ligand, with a ligand of formula (A) or formula (B): wherein R^1 is chosen from C_{1-6} alkoxy and C_{1-6} alkyl, n is a number from 0 to 5, and when n is a number from 2 to 5, R^1 can be the same or different, and R^2 is alkyl, substituted alkyl, aryl, substituted aryl, alkaryl or substituted alkaryl. The hydride source is either $NR^3R^4R^5$ and formic acid, $[R^3R^4R^5NH][OOCH]$ and optionally formic acid, or $[M][OOCH]_x$ and formic acid, wherein R^3 , R^4 and R^5 are C_{1-6} alkyl, M is an alkali metal or alkaline earth metal and x is 1 or 2. A pH from 6.5 to 8 is maintained during the process.

Abstract of the Invention

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ASYMMETRIC CATALYTIC REDUCTION

A process for preparing (S)-(+)-10,11-dihydro-10-hydroxy-5H-dibenz/b,f/azepine-5-carboxamide or (R)-(-)-10,11-dihydro-10-hydroxy-5H-dibenz/b,f/azepine-5-carboxamide, by reduction of oxcarbazepine in the presence of a catalyst and a hydride source is disclosed. The catalyst is prepared from a combination of $[\text{RuX}_2(\text{L})]_2$ wherein X is chlorine, bromine or iodine, and L is an aryl or aryl-aliphatic ligand, with a ligand of formula (A) or formula (B):



wherein R^1 is chosen from C_{1-6} alkoxy and C_{1-6} alkyl, n is a number from 0 to 5, and when n is a number from 2 to 5, R^1 can be the same or different, and R^2 is alkyl, substituted alkyl, aryl, substituted aryl, alkaryl or substituted alkaryl. The hydride source is either $\text{NR}^3\text{R}^4\text{R}^5$ and formic acid, $[\text{R}^3\text{R}^4\text{R}^5\text{NH}][\text{OOCH}]$ and optionally formic acid, or $[\text{M}][\text{OOCH}]_x$ and formic acid, wherein R^3 , R^4 and R^5 are C_{1-6} alkyl, M is an alkali metal or alkaline earth metal and x is 1 or 2. A pH from 6.5 to 8 is maintained during the process.