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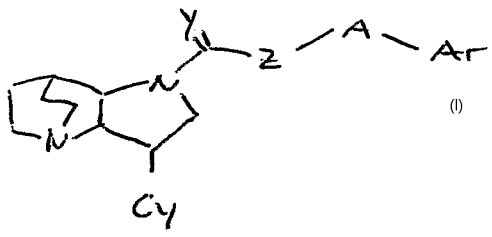
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(54) Title: HETEROARYL-SUBSTITUTED DIAZATRICYCLOALKANES, METHODS FOR ITS PREPARATION AND USE THEREOF



(I)

(57) Abstract: The present invention relates to amide and urea derivatives of heteroaryl- substituted diazatricycloalkanes, of the Formula (I) with the definition as set out in the description pharmaceutical compositions including the compounds, methods of preparing the compounds, and methods of treatment using the compounds. More specifically, the methods of treatment involve modulating the activity of the α7 nAChR subtype by administering one or more of the compounds to treat or prevent disorders mediated by the α7 nAChR subtype. The diazatricycloalkanes typically consist of a 1-azabicyclooctane fused to pyrrolidine ring. The substituent heteroaryl groups are 5- or 6-membered ring heteroaromatics, such as 3-pyridinyl and 5-pyrimidinyl moieties, which are attached directly to the diazatricycloalkane. The secondary nitrogen of the pyrrolidine moiety is substituted with an arylcarbonyl (amide type derivative) or an arylaminocarbonyl (N- arylcarbamoyl) (urea type derivative) group. The compounds are beneficial in therapeutic applications requiring a selective interaction at certain nAChR subtypes. That is, the compounds modulate the activity of certain nAChR subtypes, particularly the α7 nAChR subtype, and do not have appreciable activity toward muscarinic receptors. Radiolabeled versions of the compounds can be used in diagnostic methods.

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