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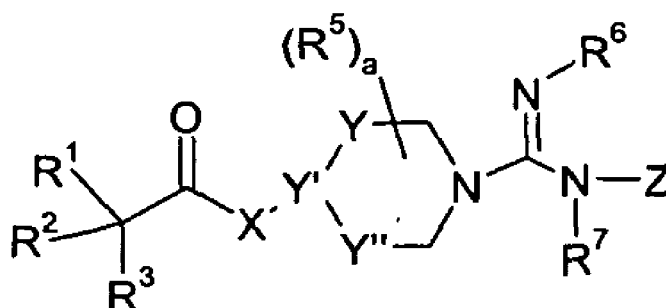
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(I)

(57) Abstract: The invention provides compounds of formula (I) or a pharmaceutically acceptable salt thereof, wherein R^{1-3} , R^{5-7} , a, X, Y, Y', Y'', and Z are as defined in the specification. These compounds are muscarinic receptor antagonists. The invention also provides pharmaceutical compositions containing such compounds, processes for preparing such compounds and methods of using such compounds to, for example, treat pulmonary disorders such as chronic obstructive pulmonary disease and asthma.

