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Ambroxol in the 21st century: pharmacological and clinical update

[Mario Malerba](#)¹, [Beatrice Ragnoli](#)

[Affiliations expand](#)

Abstract

Background: Belonging to the group of expectorants, ambroxol is an active substance with a long history that influences parameters considered to be the basis for the physiological production and the transport of the bronchial mucus. Therefore, ambroxol's indication is 'secretolytic therapy in acute and chronic bronchopulmonary diseases associated with abnormal mucus secretion and impaired mucus transport'.

Objective: The aim of this review is to evaluate the pharmacological and clinical data on the mucokinetic compound ambroxol.

Methods: The existing database that covers >40 years of pharmacological research and clinical development was analysed. Only studies with adequate study design were evaluated.

Conclusion: Ambroxol is shown to exert several activities: i) secretolytic activity (i.e., promotes mucus clearance, facilitates expectoration, and eases productive cough); ii) anti-inflammatory and antioxidant activity; and iii) a local anaesthetic effect through sodium channel blocking at the level of the cell membrane. The reduction on chronic obstructive pulmonary disease exacerbations is consistent and clinically relevant. The anaesthetic effect is a new pharmacological action that could be beneficial in the management of acute respiratory tract infections. The efficacy and safety of ambroxol is well established.