
Subject: Roxithromycin

Posted by [kkoo](#) on Fri, 28 Aug 2009 12:50:27 GMT

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Arch Dermatol Res. 2009 Jun;301(5):347-55. Epub 2008 Sep 27.

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Roxithromycin antagonizes catagen induction in murine and human hair follicles: implication of topical roxithromycin as hair restoration reagent.

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Roxithromycin (RXM) is a 14-member macrolide antibiotics, with a variety of bioregulatory functions including anti-apoptotic activity to keratinocytes. Therefore, RXM has been used for many kinds of skin diseases. In this study, human and murine hair follicles were treated with RXM in order to find the possibility to cure hair loss disease such as androgenetic alopecia (AGA). In AGA, dihydrotestosterone signals apoptosis in dermal papilla cells in susceptible individuals, resting in premature termination of anagen and early entry into catagen. Therefore, anti-apoptotic drug has a possibility of new candidate for AGA. This study revealed RXM antagonized the in vitro inhibitory effect of IFN-gamma on proliferation of keratinocytes and induction of apoptosis in murine and human hair bulb. RXM increases hair elongation and inhibits catagen-like changes induced in vitro with IFN-gamma in murine and human hair follicles. Furthermore, topical 5% RXM solution effectively restores hair growth in about half of individuals with AGA without any local and systemic adverse effects. Therefore, RXM is new candidate as a hair restoration drug for AGA.
