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Promotion of hair growth by Rosmarinus officinalis leaf extract

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Abstract

Topical administration of Rosmarinus officinalis leaf extract (RO-ext, 2 mg/day/mouse) improved hair regrowth in C57BL/6NCrSlc mice that experienced hair regrowth interruption induced by testosterone treatment. In addition, RO-ext promoted hair growth in C3H/He mice that had their dorsal areas shaved. To investigate the antiandrogenic activity mechanism of RO-ext, we focused on inhibition of testosterone 5α-reductase, which is well recognized as one of the most effective strategies for the treatment of androgenic alopecia. RO-ext showed inhibitory activity of 82.4% and 94.6% at 200 and 500 μg/mL, respectively. As an active constituent of 5α-reductase inhibition, 12-methoxycarnosic acid was identified with activity-guided fractionation. In addition, the extract of R. officinalis and 12-methoxycarnosic acid inhibited androgen-dependent proliferation of LNCaP cells as 64.5% and 66.7% at 5 μg/mL and 5 μM, respectively. These results suggest that they inhibit the binding of dihydrotestosterone to androgen receptors. Consequently, RO-ext is a promising crude drug for hair growth.

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Rosemary oil vs minoxidil 2% for the treatment of androgenetic alopecia: a randomized comparative trial

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Abstract

Rosmarinus officinalis L. is a medicinal plant with diverse activities including enhancement microcapillary perfusion. The present study aimed to investigate the clinical efficacy of rosemary oil in the treatment of androgenetic alopecia (AGA) and compare its effects with minoxidil 2%. Patients with AGA were randomly assigned to rosemary oil (n = 50) or minoxidil 2% (n = 50) for a period of 6 months. After a baseline visit, patients returned to the clinic for efficacy and safety evaluations every 3 months. A standardized professional microphotographic assessment of each volunteer was taken at the initial interview and after 3 and 6 months of the trial. No significant change was observed in the mean hair count at the 3-month endpoint, neither in the rosemary nor in the minoxidil group (P > .05). In contrast, both groups experienced a significant increase in hair count at the 6-month endpoint compared with the baseline and 3-month endpoint (P < .05). No significant difference was found between the study groups regarding hair count either at month 3 or month 6 (> .05). The frequencies of dry hair, greasy hair, and dandruff were not found to be significantly different from baseline at either month 3 or month 6 trial in the groups (P > .05). The frequency of scalp itching at the 3- and 6-month trial points was significantly higher compared with baseline in both groups (P < .05). Scalp itching, however, was more frequent in the minoxidil group at both assessed endpoints (P < .05). The findings of the present trial provided evidence with respect to the efficacy of rosemary oil in the treatment of AGA.