

ECKLONIA CAVA

Ecklonia cava is edible brown seaweed. It is mainly harvested in the deep oceans around the islands in Jeju province, South Korea. This seaweed has a very high polyphenolic content and is broadly studied for health properties. Already since the 11th century, there is a belief in Korea and Japan that it is helpful for beauty and growth of hair. Recent studies show that a topical treatment with Ecklonia cava extract can have a positive effect on hair growth.

Hairs are produced from hair follicles which are embedded in the inner layer of the skin (dermis). Hair follicles are made up of [dermal papilla cells](#). Growth of hairs is closely associated with the status of the dermal papilla cells. Ecklonia cava elicits several pathways involved in the multiplication of dermal papilla cells, which ultimately results in hair growth (Kim et al., 2013).

WORKING MECHANISMS OF ECKLONIA CAVA ON HAIR GROWTH

Ecklonia cava, more specifically the active component Dioxinodehydroeckol, enhances the lengthening of hair shaft, enhanced growth of dermal papilla cells and the release of the Insulin-like growth factor 1 ([IGF-1](#)) (Bak et al., 2013).

Ecklonia cava also decreases activity of [5 \$\alpha\$ -reductase](#) and therefore reduces the amount of DHT (di-hydro testosterone) in the body. Dieckol is the most active component in Ecklonia cava for the reduction of 5 α -reductase (Kang et al., 2012).

ECKLONIA CAVA COMPARED WITH MINOXIDIL AND FINASTERIDE

Ecklonia Cava has been studied against two well-known drugs for the treatment of hair loss: finasteride and minoxidil. Finasteride inhibits the activity of 5 α -reductase and minoxidil promotes the growth of dermal papilla cells. Studies have verified that Ecklonia cava performs both of these functions.

In a comparison with minoxidil, Ecklonia cava shows that after 37 days of treatment, there is an increase in the size, depth and length of hair follicles. Whereas the hair follicles of the control group were still in the telogen (resting) stage, those in the Ecklonia Cava and minoxidil treated groups were in the anagen (growing) stage (Bak et al., 2013). In a comparison between lengthening of hair follicles as a result of treatment with Minoxidil and Ecklonia Cava, 1 ug/ml of Ecklonia Cava had a 12,4% average increase in hair follicle length compared to the control group. This is more than the results with 1 ug/ml of Minoxidil (+10,9%) (Kang et al., 2012).

Finasteride is known to significantly decrease 5 α -reductase and lower DHT concentrations in the human body. When mice hair follicles were cultured in 100 ug/ml of Ecklonia Cava, 5 α -reductase was inhibited by over 66%. When applying the enzymatic extract Dieckol, it showed the same level of inhibition of 5 α -reductase as shown by finasteride (Kang et al., 2012).

CONCLUSION

The referenced studies demonstrate that Ecklonia cava and its active components stimulate hair growth through the growth of dermal papilla cells, the inhibition of 5 α -reductase activity, lengthening of hair shaft and the release of IGF-1. These findings indicate that Ecklonia Cava extract is a possible therapeutic compound for treatment of hair loss and could be used in topical form as a natural alternative to finasteride and minoxidil.

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