

1 **Red Ginseng and *Prunus mira* Koehne Oil: Hair Regrowth**  
2 **via Wnt/ $\beta$ -catenin Pathway**

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4 2024/02/21

5 **Outline**

- 6 1. Introduction  
7 2. Red ginseng oil promotes hair growth and protects skin against UVC radiation  
8 3. Study on the chemical constituents of nut oil from *Prunus mira* Koehne and the  
9 mechanism of promoting hair growth  
10 4. Conclusion

11 **Abstract**

12 Hair loss is a dermatological condition characterized by the loss of hair, which has  
13 a noticeable impact on one's physical appearance. The etiology of this condition is  
14 commonly attributed to factors such as heredity, immune regulation, hormone levels,  
15 mental and psychological factors, and nutritional status. Previous research has also shown  
16 that there is a correlation between the Wnt/ $\beta$ -catenin pathway and hair regeneration.  
17 Therefore, It is worth investigating the potential of manipulating the Wnt/ $\beta$ -catenin  
18 pathway to achieve hair regeneration. The choice of plants as the focus of this  
19 study was based on previous research indicating that plant oils can stimulate hair growth  
20 and enhance skin health. Red ginseng and *Prunus mira* Koehne are rich in linoleic acid,  
21 which can effectively control the expression of proteins in the Wnt/ $\beta$ -catenin pathway, thus  
22 hypothesizing that it could stimulate hair growth. Studies have shown that research on  
23 Both researches use mice for experiments. RGO use C57BL/6 and SKH-1 hairless mice for  
24 animal experiments. Another study use C57BL/6 and KM mice , rabbits for experiments.  
25 RGO can enhance the protein expression of  $\beta$ -catenin, p-GSK3 $\beta$ , and lymphoid  
26 enhancer-binding factor 1 (Lef-1) compared to the control group. Additionally, RGO  
27 can upregulate genes related to hair growth in mouse skin tissue and is formulated to  
28 stimulate hair follicle regeneration and enhance hair growth. On the other hand,  
29 *Prunus mira* Koehne oil divided into different concentrations. When applied at a  
30 concentration of 30.13 mg (cm<sup>2</sup> d)<sup>-1</sup> has a significant effect on increasing the hair weight  
31 and follicle number. On the other hand, has an outstanding effect on increasing the  
32 expression of Wnt10b,  $\beta$ -catenin and GSK-3 $\beta$  of mRNA and protein. These researches  
33 findings demonstrate that RGO and *Prunus mira* Koehne oin can promote hair regrowth by  
34 modulating the expression of  $\beta$ -catenin, Wnt10b and GSK-3 $\beta$  in the Wnt/ $\beta$ -catenin  
35 pathway.  
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