

Specification : Hair Serum Harrlos Manose (Manose PR-0010)

(Application : For anti-hair loss)

1. Name : Hair Serum Harrlos Manose
2. Active Compositions : Extracts of Thai medicinal plants including Sorghum (*Sorghum bicolor*) and Soy Bean (*Glycine max*) encapsulated in nanovesicles
3. FDA Registration No. : 50-1-6200034932
4. Characteristics
 - Physical appearance : Reddish-brown viscous liquid
 - pH : 5.81
 - Odor : Specific herbal odour
5. Standardization : HPLC fingerprint using linoleic acid as a marker (retention time at 8.287 min with the linoleic content of 1.38 mg/g)
6. Biological activities :
 - Antioxidative activity by DPPH radical scavenging with the SC_{50} value of 1.42 ± 0.10 mg/ml in comparing to vitamin C (0.03 ± 0.03 mg/ml)
 - Anti-inflammatory activity of by heat denaturation inhibition of egg white albumin with the IC_{50} value of 5.39 ± 0.23 mg/ml which is 0.13 fold of the standard anti-inflammatory drug, diclofenac (IC_{50} value of 0.71 ± 0.06 mg/ml)
 - 5α -reductase inhibition activity of $8.82 \pm 0.83\%$ at 1 mg/ml, while the standard anti-hair loss drugs, dutasteride and finasteride give the values of 23.14 ± 0.68 and $20.78 \pm 2.96\%$, respectively
7. Animal study : - Increase numbers of hair on aged black mice more than the negative control and the dutasteride treated

groups after 6 weeks of topical application

- For histopathological observation, increase of hair follicle numbers of the aged black mice more than the negative control and the dutasteride treated groups after 3 and 6 weeks of topical application are observed
- More numbers of growth and density of hair on rabbit's back in comparing to the negative control and the group applied with 5% minoxidil
- No irritation of the product when applied on the shaved rabbit's back

8. **Clinical Performance** : Hair Serum for anti-hair loss showed anti-hair loss activity. When applied with the hair serum for anti-hair loss for 2 months, an increase number of hairs with the percentages of 25.84% was observed. A decrease number of hair loss with the percentages of $12.11 \pm 5.06\%$ was indicated.
9. **Microbial Contamination** : No pathogenic microorganism contamination. The amounts of the aerobic bacteria, yeast and fungi are less than 1,000 cfu/g which is in the acceptable range of Thai FDA, Ministry of Public Health
10. **Safety Evaluation** : No skin irritation in human volunteers by the closed patch test
11. **Stability** : Physically stable by the heating-cooling process (45 and 4 °C) of 6 cycles
12. **Shelf life at 30 °C** : 3 years
13. **Indication and use** : Apply on the scalp and gray or less hair area with gently massage for 1 minute every day, after shampooing in the evening without rinsing off and shampooing in the next morning. Use continuously for 1-2 months.
14. **Packaging and Storage** : 30 ml in a bottle / keep in dry and cool place protected

- from light
15. Precaution : - For external use only
- Avoid from inhalation and getting into eyes
- Rinse off and stop using when there is any undesirable effect
16. Cost : Please request



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