

Specification : Hair Serum Darlos Manose (Manose PR-0004)

(Application : For anti-hair loss and hair blackening)

1. Name : Hair Serum Darlos Manose
2. Active Compositions : Extracts of Thai medicinal plants such as False Daisy (*Eclipta prostrata*), Sorghum (*Sorghum bicolor*) and Soy Bean (*Glycine max*) encapsulated in nanovesicles
3. FDA Registration No. : 50-1-6200033628
4. Characteristics
  - Physical appearance : Light yellowish viscous liquid
  - pH : 6
  - Odor : Specific herbal odour
  - Particle size :  $965.95 \pm 59.11$  nm
5. Standardization : HPLC fingerprint using linoleic acid as a marker (retention time at 8.42 min with the linoleic content of 0.59 mg/g)
6. Biological activities :
  - Antioxidative activity by DPPH radical scavenging with the  $SC_{50}$  value of  $249.03 \pm 61.84$  mg/ml in comparing to vitamin C ( $0.08 \pm 0.01$  mg/ml)
  - Metal chelating activity with the  $MC_{50}$  value of  $228.82 \pm 59.20$  mg/ml in comparing to EDTA ( $0.09 \pm 0.00$  mg/ml)
  - Anti-inflammatory activity by heat denaturation inhibition of albumin from egg white with the  $IC_{50}$  value of  $0.34 \pm 0.05$  mg/ml which is similar to the standard anti-inflammatory drug, diclofenac (the  $IC_{50}$  value of  $0.35 \pm 0.02$  mg/ml)
  - $5\alpha$ -reductase inhibitory activity of  $10.06 \pm 3.25\%$  at 1 mg/ml which is 0.89 and 0.79 fold of the standard anti-hair loss drugs, finasteride and dutasteride, respectively

- Melanin induction activity in cultures of  $64.90 \pm 10.34\%$  which is 0.35 fold of the standard drug, theophylline ( $186.76 \pm 9.45\%$ )
  - Tyrosinase stimulation activity in cultures of  $122.62 \pm 3.78\%$  which is 0.23 fold of the standard drug, theophylline ( $525.93 \pm 20.44\%$ )
7. **Animal study** : - Increase numbers of hair on aged black mice more than the negative control and the dutasteride groups after 6 weeks of topical application
- For histopathological observation, increase numbers of hair follicles of the aged black mice more than the negative control and the dutasteride treated groups after 3 and 6 weeks of topical application
  - 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
8. **Clinical Performance** : When tested in 15 human volunteers for 8 weeks, most volunteers give an increase number of hair with decreasing of falling hair more than when applied with 1% minoxidil
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 irritation in human skin fibroblasts and human volunteers
11. **Stability** : Physically and chemically stable by the heating-cooling process ( $45$  and  $4$  °C) of 6 cycles with 95% remaining of linoleic acid content
12. **Shelf life at 30 °C** : 5 years

13. Indication and use : Apply on the scalp, the gray and less hair area with 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 : 15-20 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



**Hair Serum Darlos Manose**