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**Specification : Hair Lotion Harrlos Manose (Manose PR-0009)**

**(Application : For anti-hair loss)**

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1. **Name** : Hair Lotion Harrlos Manose
  2. **Active Compositions** : Cocktails extracts of Thai medicinal plants such as Sorghum (*Sorghum bicolor*) and Soy Bean (*Glycine max* (L.) Merrill) encapsulated in nanovesicles
  3. **FDA Registration No.** : 50-1-6200036256
  4. **Characteristics**
    - **Physical appearance** : Light brownish clear solution
    - **pH** : 6.33
    - **Odor** : Specific herbal odor
    - **Particle size** :  $533.33 \pm 854.76$  nm
  5. **Standardization** : HPLC fingerprint using linoleic acid as a marker (retention time at 8.393 min with the linoleic content of 0.41 mg/g)
  6. **Biological activities** :
    - Antioxidative activity by DPPH radical scavenging with the  $SC_{50}$  value of  $36.90 \pm 0.06$  mg/ml in comparing to vitamin C ( $0.04 \pm 0.02$  mg/ml)
    - Anti-inflammation activity by heat denaturation inhibition of albumin from egg white with the  $IC_{50}$  value of  $10.38 \pm 2.54$  mg/ml which is 0.1 fold of the standard drug, diclofenac ( $IC_{50}$  value of  $10.9 \pm 0.03$  mg/ml)
    - Tyrosinase stimulation activity in cell culture of  $42.43 \pm 4.18\%$  at 0.01 mg/ml in comparing to the standard drug, theophylline of  $280.77 \pm 6.12\%$  at 1 mg/ml
    - $5\alpha$ -reductase inhibition activity of  $2.61 \pm 1.34\%$  which is 0.1 and 0.09 fold of the standard anti-hair loss drugs, dutasteride and finasteride, 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 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 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** : When tested in 15 human volunteers for 8 weeks, most volunteers give an increased 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 cytotoxicity on skin fibroblasts at 0.001-1 mg/ml  
- 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** : Spray on the scalp and gray or less hair are as 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** : 50 ml in a bottle with a sprayer/ 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 Lotion Harrlos Manosē