

Specification : Junge Chebula Serum (Manose PR-0026)

(Application : For anti-wrinkle)

1. Name : Junge Chebula Serum
2. Active Compositions : Mixed Thai medicinal plant extracts including Myrobalan Wood (*Terminalia chebula* Retz.) gall and Tomato (*Lycopersicon esculentum* Mill.) fruit entrapped in nanoparticles
3. FDA Registration No. : 50-1-6600022260
4. Characteristics
 - Physical appearance : Brownish-red viscous liquid
 - pH : 5.87
 - Odor : Light specific herbal odor
5. Standardization : HPLC fingerprint using gallic acid as a marker
6. Biological activities :
 - Collagenase inhibition activity with the IC₅₀ of 5.53±1.17 mg/ml which is 0.004 time of vitamin C (IC₅₀ value = 0.022±0.001 mg/ml)
 - Hyaluronidase inhibition activity with the IC₅₀ of 35.72±5.79 mg/ml which is 0.004 time of disodium cromoglycate; DSCG (IC₅₀ value = 0.15±0.08 mg/ml)
 - Antioxidant activity by DPPH radical scavenging with the SC₅₀ value of 9.68±0.23 mg/ml which is 0.002 time of vitamin C (SC₅₀ value of 0.02±0.00 mg/ml)
 - Melanin inhibition activity in melanoma (B16F10) of 61.57±0.57% which is 0.90 time of kojic acid (68.22±2.63%)
 - Tyrosinase inhibition activity in melanoma (B16F10) of 58.18±2.85% which is 0.66 time of kojic acid (87.90±8.35%)
 - *In vitro* tyrosinase inhibition activity with the IC₅₀

value of 0.79 ± 0.20 mg/ml which is 0.051 time of kojic acid (IC_{50} value = 0.04 ± 0.00 mg/ml)

7. **Clinical Performance** : Wrinkle reduction at $18.66 \pm 6.00\%$ after 4 weeks application
8. **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
9. **Safety Evaluation** :
 - No cytotoxicity on human skin fibroblasts at 1 mg/ml with the cell viability of $95.03 \pm 3.64\%$
 - No skin irritation in human volunteers by the 4h closed patch test
10. **Stability** : Physically stable by the heating-cooling process (45 and 4 °C) of 6 cycles
11. **Shelf life at 30 °C** : 2 – 5 years
12. **Indication and use** : Apply and rub gently daily on the wrinkle of face after cleansing in the morning and evening
13. **Packaging and Storage** : 20 ml in a bottle or tube / keep in dry and cool place protected from light
14. **Precaution** : Rinse off and stop using when there is any undesirable effect
15. **Cost** : Please request

Reference :

Manose In-house Project “Development of anti-aging serum containing *Terminalia chebula* Retz. Gall and *Lycopersicon esculentum* extracts entrapped in nanoparticles” Manose Health and Beauty Research Center (www.manose.co), unpublished, 2022.