

Specification : Manose-MK Extract/ สารสกัดมานะเอ็มเค (Manose RM-0105)

(Application : An active ingredient for anti-aging cosmetics/

สารสำคัญในผลิตภัณฑ์เครื่องสำอางชะลอวัย)

1. Name of the raw material : Manose-MK Extract
2. Active components : Anthocyanins, glycosides, vitamin C, flavonoids and cyanidin 3-glucoside⁽¹⁾
3. Common and scientific name/ Family of the plant : Ma Kieng (Fruit) (*Cleistocalyx nervosum* var. *paniala*)/ MYRTACEAE
4. Physical appearance : Dark brown solid with herbal odor
5. pH : 4
6. Standardization : HPLC fingerprint using cyanidin 3-glucoside as a marker
7. Stability of active constituent : Cyanidin 3-glucoside is stable at room temperature and light protection condition
8. Solubility : Soluble in water and ethanol
9. Microbial contamination : No pathogenic microorganism with less than 1,000 cfu/g of the total plate count of bacteria, yeast and fungi which is conformed to the Thai FDA regulation
10. Biological activities : Anti-oxidant (DPPH free radical scavenging and lipid peroxidation inhibition)⁽²⁾, tyrosinase inhibitory⁽²⁾ and MMP-2 inhibitory⁽²⁾ activity
 - DPPH free radical scavenging activity with the SC₅₀ values of 0.02 mg/ml which was 2.00 folds of ascorbic acid (SC₅₀ = 0.04 mg/ml)
 - Lipid peroxidation inhibition activity with the IPC₅₀ values of 0.23 mg/ml which was 0.22 fold of α -tocopherol (IPC₅₀ = 0.05 mg/ml)

- Tyrosinase inhibition activity with the IC_{50} values of 0.02 mg/ml which was 0.25 fold of kojic acid (IC_{50} = 0.005 mg/ml)
- MMP-2 inhibition activity with the % inhibition of 91.40 % which was 0.92 fold of ascorbic acid (% inhibition = 99.56 %)

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| 11. Animal / human performance test | : | - |
| 12. Safety | : | No skin irritation in human volunteers / LD_{50} > 5 g/kg BW in rats |
| 13. Pharmaceutical, food supplement or cosmetic applications | : | Anti-aging, anti-oxidant and whitening cosmetics |
| 14. Recommended concentrations in the product | : | 0.1-1.0% w/w in cosmetics |
| 15. Storage | : | Keep in tight and light protection container at room temperature |
| 16. Precautions | : | - |
| 17. Cost per kg | : | Please request |

References

1. Jansom C, Bhamarapavati S, Itharat A. (2008) Major anthocyanin from ripe berries of *Cleistocalyx nervosum* var. *paniala*. **Thammasat Medical Journal**. 8(3): 364-370.
2. Manose In-house Project “The Development of Extracts from Thai Medicinal Plants for Anti-Aging”, **Manose Health and Beauty Research Center** (www.manose.co), unpublished, 2015.