

Specification : Kao Kam Lang Chang San Extract / สารสกัดแก้กำลังข้างสาร
(Manose RM-0032)

(Application : An active ingredient for anti-aging and whitening cosmetics
and immunomodulatory food supplements / สารสำคัญในผลิตภัณฑ์
เครื่องสำอางชะลอวัย / ช่วยให้ผิวขาวและผลิตภัณฑ์เสริมอาหารกระตุ้นภูมิคุ้มกัน)

1. Name of the raw material : Kao Kam Lang Chang San Extract
2. Active components : Alkaloids and tannins
3. Common and scientific name/
Family of the plant : Kao Kam Lang Chang San (*Peristrophe bivalvis* (L.)
Merr.)/ ACANTHACEAE
4. Physical appearance : Dark green-reddish semi solid with specific herbal odor
5. pH : 5.30
6. Standardization : HPLC fingerprint using tannin as a marker (retention time = 2.978 min)
7. Solubility : Slightly soluble in methanol, very slightly soluble in ethanol and propylene glycol, practically insoluble in hot and cold water, glycerin and mineral oil

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8. 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
9. Biological activities : - Antioxidative activity by DPPH radical scavenging with the SC₅₀ value of 3.04±0.33 mg/ml (ascorbic acid = 0.04±0.01 mg/ml)
- Antioxidative activity by lipid peroxidation inhibition with the IPC₅₀ value of 0.28±0.06 mg/ml (α-tocopherol = 0.08±0.03 mg/ml)
- Tyrosinase inhibition activity with the IC₅₀ value of 0.23±0.06 mg/ml (kojic acid = 0.01±0.00 mg/ml)
- Human skin fibroblast proliferation stimulation activity of 42.87±4.79% at 0.1 mg/ml (ascorbic acid = 50.46±3.87%)
- MMP-2 inhibition activity of 100.00±0.00% at 1 mg/ml (ascorbic acid 0.01 mg/ml = 37.93±2.87%)
- Immunomodulatory activity with phagocytosis of 34.00±8.00% at 10 mg/ml (lipopolysaccharide 20 µg/ml = 58.00±8.72%)
10. Animal / human performance test : -

11. Safety : No cytotoxicity on human skin fibroblasts with cell viability of $124.11 \pm 9.41\%$ at 1 mg/ml (SLS 1 mg/ml = $21.71 \pm 3.56\%$)
12. Pharmaceutical, food supplement or cosmetic applications : Anti-aging and whitening cosmetic products and immunomodulatory food supplements
13. Recommended concentrations in the product : 0.1-5 % w/w
14. Storage : Keep in tight and light protection container at room temperature
15. Precautions : None
16. Cost per kg : Please request