

Specification : Anti-acne Mixed Thai Medicinal Plant Extract /

สารสกัดสมุนไพรไทยผสมต้านเชื้อสิว (Manose RM-0069)

(Application : An active ingredient for anti- acne topical product/

สารสำคัญในผลิตภัณฑ์ใช้ทาภายนอกเพื่อต้านเชื้อสิว)

1. Name of the raw material : Anti-acne Mixed Thai Medicinal Plant Extract
2. Active components : Naphthoquinones, steroids, triterpenoids, tannins and flavonoids^(1, 2)
3. Common and scientific name/ Family of the plant : *Plumbago indica* L./ PLUMBAGINACEAE
Caesalpinia sappan L./ LEGUMINOSAE-CAESALPINOIDEAE
4. Physical appearance : Brown reddish solid with specific herbal odor⁽³⁾
5. pH : 5⁽³⁾
6. Standardization : HPLC fingerprint using plumbagin as a marker⁽⁴⁾
7. Solubility : Soluble in water and ethanol
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 : Anti-bacterial, anti-inflammatory and anti-oxidative activities^(3, 5)
 - Anti-bacterial activity against *Cutibacterium acnes* of 48.38±1.67 mm at 1 mg, while the standard clindamycin at 0.002 mg gave 56.27±1.32 mm⁽³⁾
 - Anti-bacterial activity against

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- Staphylococcus aureus* of 21.47 ± 0.67 mm at 2.5 mg, while the standard erythromycin at 0.015 mg gave 25.13 ± 0.21 mm⁽³⁾
- Anti-bacterial activity against *Staphylococcus epidermidis* of 32.01 ± 1.93 mm at 2.5 mg, while the standard erythromycin at 0.015 mg gave 34.59 ± 0.20 mm⁽³⁾
 - Anti-inflammation activity by inhibiting of denaturation of albumin from egg white with the IC₅₀ value of 11.22 ± 5.84 mg/ml. The activity of the standard diclofenac gave the IC₅₀ value of 0.57 ± 0.003 mg/ml⁽³⁾
10. Animal / human performance test : Anti-bacterial and anti-inflammatory in animals^(6, 7)
11. Safety : No skin irritation in human volunteers and the LD₅₀ value of >5 g/kg BW in rats⁽³⁾
12. Pharmaceutical, food supplement or cosmetic applications : Topical anti-acne and anti-inflammatory products
13. Recommended concentrations in the product : 0.01 – 5 %
14. Storage : Keep in tight and light protection container at room temperature
15. Precautions : -
16. Cost per kg : Please request

References

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5. Nirmal NP, Panichayupakaranant P. Antioxidant, antibacterial and anti-inflammatory activities of standardized brazilin-rich *Caesalpinia sappan* extract. Pharmaceutical Biology 2015, 53(9): 1339-1343.
6. Kamal MA, Ramchender RP. Modulatory effect of plumbagin (5-hydroxy-2-methyl-1,4-naphthoquinone) on macrophage functions in BALB/c mice. I. Potentiation of macrophage bactericidal activity. Immunopharmacology 1995, 30(3): 231-236.
7. Washiyama M, Sasaki Y, Hosokawa T, et al. Anti-inflammatory constituents of sappan lignum. Biological and Pharmaceutical Bulletin 2009, 32(5): 941-944.