

Specification : Holy Basil Leaf extract / สารสกัดใบกะเพรา

(Manose RM-0091)

(Application : An active ingredient for anti-oxidant, anti-microbial, wound healing in cosmetics/ anti-cancer, anti-diabetic, immunomodulatory and memory enhancement in food supplements/ สารสำคัญในผลิตภัณฑ์เครื่องสำอาง ต้านปฏิกิริยาออกซิเดชัน ต้านเชื้อจุลินทรีย์ สมานแผล และผลิตภัณฑ์เสริมอาหาร ต้านมะเร็ง ต้านเบาหวาน กระตุ้นภูมิคุ้มกัน ช่วยเพิ่มความจำ)

1. Name of the raw material : Holy Basil Leaf extract (solid crude extract/ extract solution)
2. Active components : Oleanolic acid, ursolic acid, rosmarinic acid, carvacrol, linalool, β -caryophyllene and eugenol⁽¹⁾
3. Common and scientific name/ Family of the plant : Holy Basil Leaf extract (*Ocimum tenuiflorum* L.)/ LABIATAE
4. Physical appearance : Dark brownish semi solid with herbal odor (for solid crude extract) and brown clear solution with herbal odor (for 1% extract solution)
5. pH : 5
6. Standardization : HPLC fingerprint using eugenol as a marker
7. Stability of active constituent : Eugenol was 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

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| 10. Biological activities | : | - Anti-oxidant ⁽²⁾ , anti-microbial ⁽²⁾ , wound healing ⁽²⁾ ,
anti-cancer ⁽²⁾ , anti-diabetic ⁽²⁾ ,
immunomodulatory ⁽²⁾ and memory
enhancement ⁽²⁾ activity |
| 10. Animal / human
performance test | : | Wound healing activity in animals ⁽²⁾
Anti-diabetic, immunomodulatory and memory
enhancement activity in human volunteers ⁽³⁾ |
| 11. Safety | : | No skin irritation in human volunteers / LD ₅₀ > 5
g/kg BW in rats |
| 12. Pharmaceutical, food
supplement or cosmetic
applications | : | Anti-oxidant, anti-microbial, wound healing in
cosmetics/ anti-cancer, anti-diabetic,
immunomodulatory and memory enhancement in
food supplements |
| 13. Recommended
concentrations in the
product | : | 0.1-10% w/w (0.1-1.0% for solid crude extract), (5-
10% for extract solution prepared as 1% w/w of
the solid crude extract in propylene glycol) in
cosmetics and food supplements |
| 14. Storage | : | Keep in tight and light protection container at
room temperature |
| 15. Precautions | : | None |
| 16. Cost per kg | : | Please request |

References

1. Ravi P, Elumalai A, Eswaraiah MC, Karsala R. (2012) A review of Krishna tulsi, *Ocimum tenuiflorum* Linn. **International Journal of Research in Ayurveda and Pharmacy**. 3(2): 291-293.

2. Siva M, Shanmugam KR, Shanmugam B, Venkata Subbaiah G, Ravi S, Sathyavelu Reddy K, Mallikarjuna K. (2016) *Ocimum sanctum*: a review on the pharmacological properties.

International Journal of Basic & Clinical Pharmacology. 5(3): 558-565.

3. Jamshidi N, Cohen MM. (2017) The clinical efficacy and safety of tulsi in humans: a systemic review of the literature. **Evidence-Based Complementary and Alternative Medicine.** Article ID 9217567.