

Specification : Mixed Thai Medicinal Plant Extract for Bad Breath No.2 /

สารสกัดสมุนไพรไทยผสมระงับกลิ่นปาก 2 (Manose RM-0071)

(Application : An active ingredient for oral care of breath freshener and caries protection products / สารสำคัญสำหรับผลิตภัณฑ์ในช่องปาก/ฟัน เพื่อระงับกลิ่นปากและป้องกันฟันผุ)

1. Name of the raw material : Mixed Thai Medicinal Plant Extract for Bad Breath No.2
2. Active components : Tannins, phenolic compounds (gallic acid⁽¹⁾ flavonoids, curcumin and volatile oils⁽²⁾)
3. Common and scientific name/ Family of the plant : Myrobalan gall (*Terminalia chebula* Retz. gall)/ COMBRETACEAE and turmeric (*Curcuma longa* L)/ZINGIBERACEAE
4. Physical appearance : Brownish-yellow solid with specific herbal odor
5. pH : 3.5⁽³⁾
6. Standardization : HPLC fingerprint using gallic acid⁽¹⁾ and curcumin⁽²⁾ as a marker
7. Solubility : Soluble in ethanol⁽³⁾
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⁽³⁾
9. Biological activities :
 - Myrobalan gall extract, one of the composition in RM-0071 showed anti-proliferative activity in mouth epidermal carcinoma (KB cells) with IC₅₀ of 262.65±34.66 µg/ml (IC₅₀ of doxorubicin = 10.19±0.50 µg/ml).⁽³⁾
 - Myrobalan gall extract, one of the composition in RM-0071 showed anti-oxidative activities (DPPH free radical scavenging and metal chelating) with SC₅₀ of

0.021±0.004 mg/ml and MC₅₀ of 0.282±0.002 mg/ml, respectively.⁽³⁾

- Turmeric extract, one of the composition in RM-0071 showed anti-bacterial activity against *Staphylococcus aureus* and *Streptococcus mutans* with MIC of 0.5 and 2 mg/ml, respectively.⁽⁴⁾

- Turmeric powder, one of the composition in RM-0071 showed anti-inflammation activity of inhibiting denaturation by heat of albumin from egg white with the IC₅₀ value of 114.73±0.41 mg/ml (salicylic acid = 92.97±0.33 mg/ml).⁽⁵⁾

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| 10. | Animal / human performance test | : | - |
| 11. | Safety | : | Turmeric powder, one of the composition in RM-0071 showed no cytotoxicity on human periodontal ligament fibroblast. ⁽⁶⁾ |
| 12. | Pharmaceutical, food supplement or cosmetic applications | : | Oral and teeth care products (toothpaste and throat spray) |
| 13. | Recommended concentrations in the product | : | 0.01-0.5 % w/w for the concentrated extract / 5-15 % w/w for the extract in 10% propylene glycol solution |
| 14. | Storage | : | Keep in tight and light protection container at room temperature |
| 15. | Precautions | : | None |
| 16. | Cost per kg | : | Please request |

References

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2. Akram M., Uddin S., Ahmed A., Usmanghani K., Hannan A., Mohiuddin E., Asif M. (2010) *Curcuma longa* and curcumin: A review article. *Romanian Journal of Biology-Plant Biology*. 55(2): 65-70.
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4. Rahman A.N.A.A., Sarmin N.I.M., Jamil N.S.N.A., Hanifah N.A.M. (2021). Anti-microbial properties of turmeric extracts against common oral pathogens as a potential therapeutic alternative in dentistry. In: *Enhancing Halal Sustainability*. Springer, Singapore.
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