

Specification : Rice Bran Extract/ สารสกัดรำข้าว (Manose RM-0123)

(Application : An active ingredient for female hormone replacement food supplements and anti-hair loss cosmetics/ สารสำคัญในผลิตภัณฑ์เสริมอาหารทดแทนฮอร์โมนเพศหญิง และผลิตภัณฑ์เครื่องสำอางป้องกันผมร่วง)

1. Name of the raw material : Rice Bran Extract
2. Active components : Phenolic compounds, flavonoids, sterols, triterpenes, ferulic acid and γ -Oryzanol⁽¹⁾
3. Common and scientific name/ Family of the plant : Rice (*Oryza sativa* L.)/ GRAMINEAE
4. Physical appearance : Brown solid with herbal odor
5. pH : 5
6. Standardization : HPLC fingerprint using γ -Oryzanol as a marker
7. Stability of active constituent : γ -Oryzanol 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-diabetic⁽¹⁾, lipid lowering⁽¹⁾, anti-hypertensive⁽¹⁾, estrogenic⁽²⁾, anti-oxidant⁽¹⁾, anti-inflammatory⁽¹⁾ and anti-hair loss⁽³⁾ activity
11. Animal / human performance test : Estrogenic⁽²⁾ and anti-hair loss⁽³⁾ activity in animals
12. Safety : No skin irritation in human volunteers / LD₅₀ > 5 g/kg BW in rats

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13. **Pharmaceutical, food supplement or cosmetic applications** : Female hormone replacement, anti-diabetic, lipid lowering and anti-hypertensive in food supplements/ anti-hair loss, anti-oxidant and anti-inflammatory in cosmetics
14. **Recommended concentrations in the product** : 0.1-1.0% w/w in food supplements and cosmetics
15. **Storage** : Keep in tight and light protection container at room temperature
16. **Precautions** : None
17. **Cost per kg** : Please request

References

1. Sapwarobol S, Saphyakhajorn S, Astina J. (2021) Biological functions and activities of rice bran as a functional ingredient: A review. **Nutrition and Metabolic Insights**. 14: 1-11.
2. Lim DW, Jeon H, Kim M, Yoon M, Jung J, Kwon S, Cho S, Um MY. (2020) Standardized rice bran extract improves hepatic steatosis in Hep G2 cells and ovariectomized rats. **Nutrition Research and Practice**. 14(6): 568-579.
3. Choi JS, Jeon MH, Moon WS, Moon JM, Cheon EJ, Kim JW, Jung SK, Ji YH, Son SW, Kim MR. (2014) *In vivo* hair-growth promoting effect on rice bran extract prepared by supercritical carbon dioxide fluid. **Biological and Pharmaceutical Bulletin**. 37(1): 44-53.
4. Manose In-house Project “The Development of Extract from Thai Medicinal Plants for Female Hormone Replacement and Anti-Hair Loss”, Manose Health and Beauty Research Center (www.manose.co), unpublished, 2015.