

Specification : Bai-ya-nang Extract (Manose RM-0080)

Application : An active ingredient for hair darkening products

1. **Name of the raw material** : Bai-ya-nang Extract
2. **Active components** : Chlorophyll, tannic acid, gallic acid, rutin, isoquercetin, catechin and quercetin⁽¹⁾
3. **Common and scientific name/ Family of the plant** : Ya-nang (*Tiliacora triandra* Diels)/Menispermaceae
4. **Physical appearance** : Dark reddish brown semi-solid⁽²⁾
5. **pH** : 4.09⁽²⁾
6. **Standardization** : HPLC fingerprint using gallic acid as a marker⁽³⁾
7. **Solubility** : Soluble in alcohol⁽²⁾
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⁽²⁾
9. **Biological activities** :
 - Antioxidative activity by DPPH radical scavenging with the SC₅₀ value of 0.14±0.02 mg/ml (ascorbic acid = 0.10±0.01 mg/ml)⁽²⁾
 - Melanin stimulation activity in melanoma (B16F10) with melanin content relative ratio of 136.87±24.32% at 1 mg/ml 55.32±0.86% (theophylline at 0.1 mg/ml = 131.52±32.30%)⁽²⁾
 - Tyrosinase stimulation activity in melanoma (B16F10) with tyrosinase content relative ratio of 138.23±10.03% at 1 mg/ml (theophylline at 0.1 mg/ml = 116.58±41.25%)⁽²⁾

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10. Animal / human performance test : -
11. Safety : No cytotoxicity on human skin fibroblasts with cell viability of $113.24 \pm 9.44\%$ at $1 \text{ mg/ml}^{(2)}$
12. Pharmaceutical, food supplement or cosmetic applications : Products for hair darkening⁽²⁾
13. Recommended concentrations in the product : $1 - 5 \%w/w^{(2)}$
14. Storage : Keep in tight and light protection container at room temperature
15. Precautions : None
16. Cost per kg : Please request

References

1. Monthana M., Kamonwan R., Min-Hsiung P. and Donporn W. (2018). Some phytochemicals and anti-inflammation effect of juice from *Tiliacora triandra* leaves. Journal of Food and Nutrition Research. 6. 32-38.
2. Manose In-house Project “Development of serum containing extracts from Thai medicinal plants for hair darkening stimulation” Manose Health and Beauty Research Center (www.manose.co), unpublished, 2022.
3. Sriket P. (2014). Chemical components and antioxidant activities of Thai local vegetable. KMITL Science and Technology Journal, 4(1). 18-23.