

Specification : APTO extract / สารสกัดตำรับยาสมุนไพร APTO
(Manose RM-0024)

(Application : An active ingredient for memory enhancement
food supplements for Alzheimer's patient /

สารสำคัญในผลิตภัณฑ์เสริมอาหารเพิ่มความจำสำหรับผู้ป่วยอัลไซเมอร์)

1. Name of the raw material : APTO extract
2. Active components : Tannins, alkaloids, phenolic compounds⁽¹⁾
3. Common and scientific name/
Family of the plant : Containing Emblic (*Phyllanthus emblica* L.)/
EUPHORBIACEAE, etc.
4. Physical appearance : Purple solid with specific herbal odor
5. pH : 2
6. Standardization : HPLC fingerprint using gallic acid as a marker
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** : Acetylcholine esterase inhibition, anti-oxidant (DPPH, lipid peroxidation and chelating activity)
10. **Animal / human performance test** : Memory enhancement in animals⁽²⁾
11. **Safety** : No skin irritation in human volunteers / LD₅₀ > 5 g/kg BW in rat
12. **Pharmaceutical, food supplement or cosmetic applications** : Memory enhancement food supplement products for Alzheimer's patient
13. **Recommended concentrations in the product** : Content (mg) in the product : 244 mg/capsule
14. **Storage** : Keep in tight and light protection container at room temperature
15. **Precautions** : Discontinue use if there is any adverse effect
16. **Cost per kg** : Please request

References

1. Khan KH. (2009). Roles of *Emblica officinalis* in medicine-A review.

Botany Research International. 2(4): 218-228

2. Vasudevan M, Parle M. (2007) Memory enhancing activity of

Anwala churna (*Emblica officinalis* Gaerth.) an Ayurvedic preparation.

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