

**Specification of APTO medicinal plant recipe extract (Manose RM-024)**

1. **Name of the raw material** : APTO medicinal plant recipe extract
2. **Active components** : Tannins, alkaloids, phenolic compounds<sup>(1)</sup>
3. **Scientific name of the plant / Family** : Containing Emblic (*Phyllanthus emblica* L.)/  
EUPHORBIACEAE, etc.
4. **Physical appearance of the raw material** : Purple solid with specific odor
5. **pH of the raw material** : 2
6. **Standardization of the raw material** : HPLC fingerprint using gallic acid as a marker
7. **Solubility** : Soluble in water and ethanol
8. **Microbial contamination** : None
9. **Biological activities** : Acetylcholine esterase inhibition, anti-oxidant  
(DPPH, lipid peroxidation and chelating activity)
10. **Safety** : No skin irritation in human volunteers / LD<sub>50</sub> > 5  
g/kg BW in rat
11. **Animal / human performance test** : Memory enhancement in animals<sup>(2)</sup>
12. **Pharmaceutical, food supplement or cosmetic applications**  
: Memory enhancement food supplement products for  
Alzheimer's patient
13. **Content (mg) in the product** : 244 mg/capsule
14. **Storage** : Keep in tight and light protection container at room  
temperature
15. **Precautions (if any)** : Discontinue use if there is any adverse effect
16. **Cost per kg** : -

## References

1. Khan KH. Roles of *Emblica officinalis* in medicine-A review. Botany Research International 2009, 2(4): 218-228.
2. Vasudevan M, Parle M. Memory enhancing activity of Anwala churna (*Emblica officinalis* Gaerth.) an Ayurvedic preparation. Physiology & Behavior 2007, 91(1): 46-54.