

Specification : ED1 Medicinal Plant Extract for Erectile Dysfunction Treatment/  
สารสกัดตำรับยาสมุนไพโร ED1 (Manose RM-0113)

(Application : An active ingredient in food supplements for erectile dysfunction treatment/ สารสำคัญในผลิตภัณฑ์เสริมอาหารสำหรับอาการเสื่อมสมรรถภาพทางเพศในชาย)

1. Name of the raw material : ED1 Medicinal Plant Extract for Erectile Dysfunction Treatment
2. Active components : Flavonoid, alkaloid and triterpenoid/steroid
3. Common and scientific name/ Family of the plant : Extracts from edible and medicinal plants such as Fingerroot<sup>(1)</sup> (*Boesenbergia rotunda* (Linn.) Mansf./ ZINGIBERACEAE) and Phlai (*Zingiber cassumunar* Roxb./ ZINGIBERACEAE)
4. Physical appearance : Brown solid with specific odor
5. pH : 6.18 (1% in distilled water)
6. Standardization : HPLC fingerprint using gallic acid as a marker with the retention time at 2.825 min
7. Stability of active constituent : Stable to strong/weak acid, oxidizing agent and acid salt/Unstable to strong/weak base and reducing agent
8. Solubility : Sparingly soluble in hot water (100 °C), slightly soluble in cold water (25 °C), insoluble in ethanol, methanol, propylene glycol, glycerin and mineral oil
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<sup>(2)</sup> :
  - Antioxidant DPPH radical scavenging ( $SC_{50} = 3.06$  mg/ml) (standard vitamin C = 0.14 mg/ml)
  - PDE5 inhibition at  $5.07 \pm 6.39\%$  which is 0.11 time of the standard drug, sildenafil (Viagra)

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11. Animal / human performance test : -
12. Safety<sup>(2)</sup> : Cell viability 117.05% at 0.1 mg/ml in human skin fibroblasts (standard vitamin C = 140.21%)/safe for topical use/LD<sub>50</sub> > 5000 mg/kg in animals by oral administration considered as practically nontoxic
13. Pharmaceutical, food supplement or cosmetic applications : Food supplement for erectile dysfunction treatment
14. Recommended concentrations in the product : 3.03 g/5 days or as needed
15. Storage : Keep in tight container at cool place (4 °C) protected from light
16. Precautions : None
17. Cost per kg : Please request

## References

1. Manosroi A., Tangjai T., Chankhampan C., Manosroi W., Najarut Y., Kitdamrongtham W. and Manosroi J. Potent phosphodiesterase inhibition and nitric oxide release stimulation of anti-impotence Thai medicinal plants from “MANOSROI III” Database. **Evid Based Complement Alternat Med.** 2017; 2017: 9806976.
2. Manose In-house Project “The Development of Extracts from Thai Medicinal Plant Recipes for Erectile Dysfunction Treatment” **Manose Health and Beauty Research Center** (www.manose.co), unpublished, 2016.