

Specification : Long Pepper Extract/ สารสกัดดีป्ली (Manose RM-0110)

(Application : An active ingredient for anti-hypertensive food supplements/  
สารสำคัญในผลิตภัณฑ์เสริมอาหารสำหรับโรคความดันโลหิตสูง)

1. Name of the raw material : Long Pepper Extract
2. Active components : Alkaloids, essential oils, flavonoids, steroids and piperine<sup>(1)</sup>
3. Common and scientific name/ Family of the plant : Long Pepper (*Piper longum* L.)/ PIPERACEAE
4. Physical appearance : Brown solid with herbal odor
5. pH : 5
6. Standardization : HPLC fingerprint using piperine as a marker
7. Stability of active constituent : Piperine 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-oxidant<sup>(1)</sup>, anti-inflammatory<sup>(1)</sup>, analgesic<sup>(1)</sup>, anti-microbial<sup>(1)</sup>, anti-cancer<sup>(1)</sup> and anti-hypertensive<sup>(2)</sup> activity
11. Animal / human performance test : Anti-hypertensive activity in animals<sup>(2)</sup>  
- Anti-hypertensive activity of the extract (% relative activity = 63.87 %) (% relative activity of the standard drug, prazosin = 45.43 %)
12. Safety : No skin irritation in human volunteers / LD<sub>50</sub> > 5 g/kg BW in rats

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13. Pharmaceutical, food supplement or cosmetic applications : Anti-hypertensive, anti-oxidant, anti-inflammatory analgesic, anti-microbial and anti-cancer in food supplements
14. Recommended concentrations in the product : 0.1-1.0% w/w in food supplements
15. Storage : Keep in tight and light protection container at room temperature
16. Precautions : None
17. Cost per kg : Please request

## References

1. Yadav V, Krishnan A, Vohora D. (2020) A systemic review on *Piper longum* L.: Bridging traditional knowledge and pharmacological evidence for future translation research. **Journal of Ethnopharmacology**. 247: 112255.
2. Inchan A, Promma P, Chintana P, Chootip K. (2008) Cardiovascular action on *Piper longum*. **Planta Medica**. 74: PA15.
3. Manose In-house Project “The Development of Extract from Thai Medicinal Plants for Anti-hypertensive Food Supplements”, **Manose Health and Beauty Research Center** (www.manose.co), unpublished, 2013.