

Specification : *Houttuynia cordata* Leaf Extract 0.1 % in Propylene Glycol/

สารสกัดใบพลูควาว 0.1 % ใน Propylene Glycol (Manose RM-0075)

(Application : An active ingredient for anti-aging cosmetic products/ anti-viral  
and anti-cancer topical products

สารสำคัญในผลิตภัณฑ์เครื่องสำอางชะลอวัย/ ผลิตภัณฑ์ทาภายนอกต้านเชื้อไวรัสและมะเร็ง)

1. Name of the raw material : *Houttuynia cordata* Leaf Extract 0.1 % in Propylene Glycol
2. Active components : Flavonoids, alkaloids and essential oils<sup>(1)</sup>
3. Common and scientific name/ Family of the plant : *Houttuynia cordata* Thunb./ SAURURACEAE
4. Physical appearance : Clear light brown yellowish liquid with specific light herbal odor<sup>(2)</sup>
5. pH : 5<sup>(2)</sup>
6. Standardization : HPLC fingerprint using quercetin as a marker<sup>(3)</sup>
7. Solubility : Soluble in water and ethanol<sup>(2)</sup>
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<sup>(2)</sup>
9. Biological activities : Anti-bacterial, anti-viral, anti-cancer and anti-inflammatory and anti-oxidative activities<sup>(4-8)</sup>
10. Animal / human performance test : Anti-viral and anti-cancer in animals<sup>(5, 6)</sup>
11. Safety : No skin irritation in human volunteers<sup>(2)</sup> / LD<sub>50</sub> >5 g/kg BW in rats<sup>(2)</sup>

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12. Pharmaceutical, food supplement or cosmetic applications : Anti-aging cosmetic products/ anti-viral and anti-cancer topical products
  13. Recommended concentrations in the product : 1 – 10 % in cosmetic and topical products<sup>(2)</sup>
  14. Storage : Keep in tight and light protection container at room temperature
  15. Precautions : -
  16. Cost per kg : Please request

#### References

1. Bauer R, Proebstle A, Lotter H. Cyclooxygenase inhibitory constituents from *Houttuynia cordata*. *Phytomedicine* 1996, 2(4): 305-308.
2. Manose In-house Project “*Houttuynia cordata* Leaf Extract” Manose Health and Beauty Research Center (www.manose.co), unpublished, 2022.
3. Nakamura H, Ota T, Fukuchi G. The constituents of diuretic drugs II. The flavonol glucoside of *Houttuynia cordata* Thumb. *Journal of the Pharmaceutical Society of Japan* 1936, 56(3): 68.
4. Zhang W, Lu F, Pan S, et al. Extraction of volatile oil from *Houttuynia cordata* and its anti-biotic and anti-virus activities. *Practical Preventive Medicine* 2008, 15(2): 312-316.
5. Yan Y, Chen X, Yang S, et al. Cooperative anti-influenza virus activities of amantadine, riboflavin and herb *Houttuynia*. *Virologica Sinica* 2002, 2: 192-194.
6. Ha H, Jung DY, Park SW. Anticancer effect of *Houttuynia cordata* extract on cancered ICR mouse and L1210 cells with changes of SOD and GPx activities. *Yakhak Hoechi* 2004, 48(4): 219-225.

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7. Park E, Kum S, Wang C, et al. Anti-inflammatory activity of herbal medicines: Inhibition of nitric oxide production and tumor necrosis factor-alpha secretion in an activated macrophage-like cell line. American Journal of Chinese Medicine 2005, 33(3): 415-424.
  8. Cho E, Yokozawa T, Rhyu D, et al. Study on the inhibitory effects of Korean medicinal plants and their main compounds on the 1,1-diphenyl-2-picrylhydrazyl radical. Phytomedicine 2003, 10(6-7): 544-551.