

Specification : Papaya Latex Extract / สารสกัดยางมะละกอ  
(Manose RM-0055)

(Application : An active ingredient for cosmetics and topical products for hypertrophic scar and keloid / สารสำคัญในผลิตภัณฑ์เครื่องสำอางและผลิตภัณฑ์ใช้ทาภายนอกช่วยรักษาแผลเป็นชนิดนูน)

1. Name of the raw material : Papaya Latex Extract
2. Active components : Papain, chymopapain and lysozyme
3. Common and scientific name/ Family of the plant : Papaya (*Carica papaya* L.) / CARICACEAE
4. Physical appearance : Off – white solid with specific herbal odor
5. pH : 5.7
6. Standardization : HPLC fingerprint using papain as a marker with the retention time of 1.660 min
7. Solubility : Soluble in distilled water and insoluble in alcohol and other organic solvents
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 : Antioxidative activity by DPPH radical scavenging with the  $SC_{50}$  value of  $956.10 \pm 62.06$  mg/ml ( $SC_{50}$  value of vitamin C =  $0.002 \pm 0.001$  mg/ml)  
- Antioxidative activity by lipid peroxidation inhibition with the  $IPC_{50}$  value of  $0.38 \pm 1.02$  mg/ml ( $IPC_{50}$  value of vitamin E =  $0.32 \pm 0.10$  mg/ml)  
- MMP-2 stimulation activity with the potency of 2.10

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- folds of the control group (concanavalin A =  $2.59 \pm 0.22$  folds of control group)
10. Animal / human performance test : Gel containing 1 mg/ml of papaya latex extract exhibited the hypertrophic scar reduction in the rabbit ears of  $10.62 \pm 0.06\%$ <sup>(1)</sup>
11. Safety : Skin irritation may be occurred due to cytotoxicity on human skin fibroblast cells with the cell viability of  $19.24 \pm 0.42\%$  at 0.1 mg/ml.
12. Pharmaceutical, food supplement or cosmetic applications : Cosmetics and topical products for keloid and hypertrophic scar reduction as well as skin exfoliation
13. Recommended concentrations in the product : 0.1 – 1% w/w
14. Storage : Keep in tight and light protection container at room temperature
15. Precautions : None
16. Cost per kg : Please request

## References

1. Manosroi A., Chankhampan C., Pattamapun K., Manosroi W. and Manosroi J. Antioxidant and gelatinolytic activities of papain from papaya latex and bromelain from pineapple fruits. Chiang Mai J. Sci., 2014; 41(3) : 635 – 648. **(Corresponding author and co-authors are from Manose Health and Beauty Research Center)**
2. Manosroi A., Chankhampan C., Manosroi W. and Manosroi J. (2013) Transdermal absorption enhancement of papain loaded in elastic niosomes incorporated in gel for scar treatment. European Journal of Pharmaceutical Sciences. 48 : 474 – 483 **(Corresponding author and co-authors are from Manose Health and Beauty Research Center)**