



## Preparation of readily-to-use stilbenoids extract from *Morus alba* callus using a natural deep eutectic solvent

The consumer and cosmetic industries have recently placed a greater emphasis on ecofriendly solvents for botanical extraction, including natural deep eutectic solvents (NADES).

In this study, NADES were prepared for *Morus alba* callus extraction. The efficiency of extraction from the NADES and methanol was investigated by comparison of the stilbenoids yield and antimelanogenesis activity. Prior to testing the irritability of a suitable NADES on the reconstructed human epidermis (RhE), the effect of the selected NADES on stilbenoids stability was determined. The results showed that the highest yields of stilbenoids were obtained from choline chloride-glycerol mixtures (Ch1G2) and methanol extracts, with no significant difference in yields ( $5.06 \pm 0.05$  and  $6.32 \pm 0.40$  mg/g callus dry weight, respectively). The NADES extracts of *M. alba* callus showed comparable anti-melanogenesis activity compared to methanol. In term of stability, stilbenoids in Ch1G2 remained stable after six months of storage at 4 °C except resveratrol. Furthermore, Ch1G2 had no irritation effect on RhE.

Thus, based on the findings of this study, Ch1G2 is an intriguing green solvent alternative for the extraction of *M. alba* callus and may be advantageous for the preparation of skin-lightening cosmetics.



แคลลัสหม่อน (*Morus alba* callus) ก่อนนำมาอบแห้ง

### Reference:

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