

## A METHOD PRODUCING PALM-BASED KOJIC ACID MONOOLEATE USING SOLVENT FREE SYSTEM

### TECHNOLOGY DESCRIPTION

This method was invented to produce palm-based kojic acid monooleate by using a simple vacuum evaporator apparatus. The kojic acid produced from this method is suitable for the use for cosmetic formulation and other applications.

### TECHNOLOGY FEATURES

Palm-based kojic acid monooleate is formed from the enzymatic esterification reaction between kojic acid and oleic acid in a solvent-free system. This method is able to synthesize a high percentage yield of kojic acid monooleate with reduced steps of purification. The product has an excellent stability on pH, heat and light thus making it easy to store. It also has high oil solubility that can be easily absorbed into the skin for cosmetic formulation.

### ADVANTAGES

- Cost-effective – reduces steps of purification
  - High percentage yield of kojic acid monooleate
    - Excellent stability on pH, heat and light
    - Excellent oil solubility

### INDUSTRY OVERVIEW

#### Prospect: Cosmetic Industry/ Pharmaceutical/Agriculture

The estimated worth of Malaysia's cosmetics and toiletries industry is approximately RM3.6 billion (with a healthy projected annual growth rate of 13%). In estimation, Malaysians annually spend an estimated RM1.6 billion on cosmetics with skin care products being the most purchased. The total market for cosmetics was valued at RM321.2 million with imports of cosmetics and toiletries accounting for 72.3% of the domestic consumption in 2012. The cosmetic products market value is projected to grow at a CAGR of 6.3% from 2012 to 2019 to reach \$635.7 billion.

Analysts forecast the Global Halal Cosmetics and Personal Care market to grow at a CAGR of 13.43 percent over the period 2013-2018. Malaysian cosmetics and skin-care companies also reported an increase in international demand for halal products over the past decade. Among the potential target market of are cosmetic manufacturers, the medical and pharmaceutical industry and agriculture industry. The product produced can be distributed directly to these potential manufacturers.



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