

**TECH OFFER**

## King of Siam Flower Extract for Hydration Boost and Anti-senescence Properties



### KEY INFORMATION

**TECHNOLOGY CATEGORY:**

**Sustainability** - Sustainable Living

**Personal Care** - Cosmetics & Hair

**Personal Care** - Wellness & Spa

**Chemicals** - Bio-based

**TECHNOLOGY READINESS LEVEL (TRL):** **TRL9**

**COUNTRY:** **THAILAND**

**ID NUMBER:** **TO175257**

### OVERVIEW

Due to weather and air pollution challenges, skincare brands are increasingly focusing on products that can deliver deep hydration to combat environmental stress. Hyaluronic acid (HYA) plays an important role in these formulations because of its unique ability to retain high levels of moisture. In Thailand alone, there are over 2,000 FDA-registered products featuring HYA in their formulas.

King of Siam Flower, a tropical water lily, is a species unique to Thailand. Through a network of 700 contract farming households and using industrial-scale extraction technology, a Thai company is able to produce King of Siam Flower Extract (KSE) in a cost-efficient manner. Their extract was found to be able to boost skin's HYA production by over 300%. It also offers anti-senescence properties and was found to inhibit aging in mature skin cells. KSE requires low active concentration and is 10 times cheaper as compared to other commercially available ingredients.

The company is seeking collaborators to co-create innovative products incorporating the King of Siam Flower Extract.

## TECHNOLOGY FEATURES & SPECIFICATIONS

The technology owner oversees the cultivation and utilisation of native Thai lotus strains to ensure high quality extracts. The extraction technology consists of a maceration pump system, followed by industrial-scale extraction technology. The efficacy of the KSE to boost HYA production and its anti-senescence properties for use in cosmetic applications was verified through research.

KSE was tested in primary human dermal fibroblasts, adult (HDFa) and was shown to help reduce  $\beta$ -galactosidase, a biomarker for the detection of cellular senescence, demonstrating its potential to inhibit aging in mature skin cells under the tested conditions. Tests also showed that 5 mg/mL of KSE boosted HYA synthesis by up to 335.1% and anti-senescence properties compared to retinol and bakuchiol.

In an aged human *ex vivo* skin model, it was also demonstrated that KSE can be considered as a dermatologically tested non-irritation cosmetic.

## POTENTIAL APPLICATIONS

The King of Siam Flower Extract can be used in various products for the cosmetic Industry to provide intense hydration, including but not limited to:

- Skin care (Moisturising, Skin hydration, Anti-aging)
- Personal care (Cleaning)
- Hair care (Shampoo, Conditioner, Treatment)

## MARKET TRENDS & OPPORTUNITIES

The estimated market share of KSE will be approximately USD 1.15 million, representing 0.25% of the value of extracts used in cosmetics containing HYA. This projection is set against the backdrop of the global hyaluronic acid market, which was valued at USD 3.26 billion in 2023 and is expected to grow at a compound annual growth rate (CAGR) of 8.50% from 2023 to 2033, potentially reaching USD 7.36 billion (Future Market Insights, 2023).

## UNIQUE VALUE PROPOSITION

King of Siam Flower Extract offers a more effective cosmetic solution by boosting HYA production by over 300% and providing anti-senescence properties. The unique value proposition includes requiring low concentration of the active ingredient and is 10 times more affordable as compared to other HYA-boosting ingredients.