

Preliminary investigation of *kshara* powder of *Erythrina variegata* used in Ayurveda Treasurer

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Kshara an alkaline caustic substance derived from ashes of medicinal plants and minerals, is a key component of indigenous Ayurvedic medicines. There are three main categories of *kshara* powders according to the potency as *Tikshana*, *Madhya* and *Mridu*. Accordingly, the *Erythrina variegata kshara* was prepared as the method mentioned by Acharya Sushruta Samhita in 11th chapter of Sutra sthana. In this study, *Kshara* powder of *Erythrina variegata* was evaluated due to its medicinal value, antioxidant, anti-inflammatory and anti-microbial properties. The antioxidant property was assessed using DPPH and FRAP assays, revealing potent radical scavenging and ferric reducing capacities; results in the EC₅₀ for DPPH of *Tikshana* and *Mridu* were 161.1 ppm and 206.2 ppm, respectively, with compared EC₅₀ of 55.63 ppm obtained from BHT standard. The anti-inflammatory effect was evaluated using the HRBC membrane stabilization method, demonstrating IC₅₀ of *Tikshana* - 443.1 ppm and IC₅₀ of *Mridu* 240.3 ppm of inflammation. Further laboratory experiments were conducted under physicochemical parameters such as total Ash value, pH value (around pH 11), acid insolubility, water solubility, moisture content, identification and heavy metal analysis. Functional groups and heavy metal analysis were conducted by FTIR and ICPMS, respectively, and ensured some important functional groups and unavailability of most heavy metals, which impact human health also, confirmed that *Erythrina variegata Kshara* powders have antioxidant, anti-inflammatory and antimicrobial properties against *staphylococcus aureus*, *Escherichia coli*, *Bacillus subtills*, *Streptococcus pyogenes* and *proteus mirabills* (Inhibition zones ranging from 1.0 ± 1.20 cm to 3.5 ± 0.94 cm). Finally, it was confirmed that this product was successfully formulated & evaluated. Also, it can be further developed for commercialization purposes. Continuous research is recommended to elucidate the mechanisms and clinical applications of *Kshara* powders of *Erythrina variegata* to ensure the human usage.

Keywords: Anti-inflammatory, Antioxidant, Ayurveda, *Kshara*, *Erythrina*.

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