

## Abstract

This research project was intended to utilize the highland plants: *Camellia sinensis* var. *assamica* and *Momordica cochinchinnensis* (Lour.) Spreng (gac) in development of facial night creams for commercial use. Fermented tea leaves was dried and extracted with methanol by maceration and further separated by column chromatography. The semi-purified reddish brown catechin solid was obtained. As for *Momordica cochinchinnensis* (Lour.) Spreng, the sarcotesta part was dried and extracted with hexane and ethyl acetate (7:3 by volume) by maceration and followed by evaporation off the solvent. The gag extract obtained was dark red liquid. This two extracts were tested for ABTS<sup>+</sup> antioxidant activity, assayed for total phenolic content and evaluated for anti-tyrosinase activity. It was found that catechin extract has better ABTS<sup>+</sup> antioxidant and anti-tyrosinase activities and more total phenolic content than gag extract. Both catechin extract and gag extract were used in the preparation of water in oil facial night cream. Catechin extract cream obtained was smooth texture pleasant odor light beige cream. Gag extract cream was light yellow cream, smooth texture, light pleasant odor. Catechin cream C3 shows better ABTS<sup>+</sup> antioxidant and anti-tyrosinase activities and contain more total phenolic compounds than formulation C4. Gag extract cream FK3 also shows better ABTS<sup>+</sup> antioxidant and anti-tyrosinase activities and contain more total phenolic compounds than formulation FK2 and FK4. Catechin cream formulation C3 and gag extract cream formulation FK3 were chosen for stability testing by storage at alternate temperature of 4°C and 45°C for 4 cycles as well as stored at fixed temperature of 4 °C, room temperature and 45°C for 30 days. It was found that cream C3 was stable at all storage conditions except the color of cream slightly changed at high storage temperature but cream FK3 was not stable at high storage temperature. Therefore, gag extract cream formulation FK4 was selected for stability study and shows good stability at all storage conditions except the color of cream slightly changed at high storage temperature. The two formulations C3 and FK4 were also tested for skin irritation in female and male volunteers age 23-74 years 20 volunteers per product. Both creams did not cause any skin irritation in all tested subjects. As for satisfaction test in volunteers and compared with the similar marketed products, both creams were well satisfied equally to market products.

**Keywords:** *Camellia sinensis*, *Momordica cochinchinnensis*, gag, highland plants, cosmeceuticals, night cream, water in oil cream.