

Development of a herbal fairness cream using four medicinal plants

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There are reports in the public domain which state that artificially synthesized fairness creams have shown side effects on humans. The purpose of a fairness cream is to get a fairer skin by blocking harmful Ultraviolet (UV) rays which can activate the melanin biosynthesis in the body. When there is an excess production of melanin, it can lead to several hyperpigmentation diseases and finally result in a darker or tanned skin. This excess melanin formation can be inhibited by avoiding exposure to UV light, using tyrosinase inhibitors and anti-oxidants, which can reduce melanin proliferation. In this research study, a herbal fairness cream was prepared using four traditional medicinal plants found in Sri Lanka to inhibit excess melanin production in the body. The four plants chosen for this study were, *Hemidesmus indicus* (Heen Iramusu), *Ixora coccinea* (Rathmal), *Hibiscus rosa sinensis* (Pokuru Wadamal) and *Citrus reticulata* (Heen Naran). The plant extracts and the cream were separately subjected to anti-oxidant (DPPH and ABTS) assays and anti-tyrosinase assay. In addition, the anti-bacterial activity of this cream was studied. The methanol extracts of these four plant species displayed a high antioxidant activity and a significant tyrosinase inhibitory activity. The herbal cream was formulated using equal proportions of these extracts. Anti-tyrosinase studies of the cream revealed that it has a good anti-tyrosinase activity compared to the positive standard, Kojic acid. In addition, anti-bacterial studies revealed that the cream can inhibit bacteria *Staphylococcus aureus* and *Bacillus subtilis*. The ABTS assay showed that this polyherbal cream can act as an excellent anti-oxidant (IC_{50} : 0.54 ± 3.86) with respect to the control BHT (IC_{50} : 9.99 ± 1.76). The cream was prepared using 100% natural ingredients which helped to enhance the therapeutic benefits of this cream. Thus, this cream can be used as a substitute for the synthetic fairness creams already available in the market.

Keywords: Fairness creams, Anti-tyrosinase, Anti-oxidant, Anti-bacterial

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