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Abstract

# Formulation and quality control of a topical gel product for treatment of melasma

A. Ketabi[1], Sh. Fahimi[2], S. Ghafari[3*], Z. Hesari[4], S. Sahranavard[2]

[1]*Department of Pharmacognosy, Faculty of Pharmacy, Pharmaceutical Sciences Branch, Islamic Azad University, Tehran, Iran (IAUPS).*
[2]*Departments of Traditional Pharmacy, School of Traditional Medicine, Shahid Beheshti University of Medical Sciences, Tehran, Iran.*
[3]*Traditional Medicines and Materia Medica Research Center, Shahid Beheshti University of Medical Sciences, Tehran, Iran.*
[4]*Department of Pharmaceutics, School of Pharmacy, Guilan University of Medical Sciences, Rasht, Iran*.

**Background and objectives:** Melasma is one of the most common pigmentary disorders. It has a considerable impact on quality of life. The treatment of melasma has still remained a challenge because the efficient treatment has not been proven until now and there is still a need to find new depigmenting products. *Allium cepa* L. and *Cucumis melo* L. seeds as well as tragacanth have been introduced in Iranian traditional medicine (ITM) as depigmenting agents. Moreover, modern studies have shown their antioxidant and inhibitory mushroom tyrosinase effect. In this study, a topical gel containing *Allium cepa* L. and *Cucumis melo* L. seeds extract was prepared with tragacanth and quality control evaluations have been accomplished. **Method:** After performing quality control of plants seeds and tragacanth according to pharmacopoeia, the ethanol extract of *A. cepa* and hydroalcoholic extract of *C. melo* seeds were prepared. An appropriate gel formulation was selected on the base of suitable viscosity. The gel product was formulated using 5% of each plant extracts in tragacanth gel base. In addition, the herbal gel was evaluated using pharmaceutical behavior such as physical appearance, pH, viscosity, spreadability as well as phenolics content. **Results**: The herbal gel product showed acceptable pharmaceutical behavior as well as considerable phenolic content (1.43±0.01 mg/g). **Conclusion:** The prepared topical gel product could be a good natural formulation candidate for clinical studies in the field of hyperpigmentation. Moreover, phenolic content of the product could be considered as an indicator for its quality control.

**Keyword:** gel product, Iranian traditional medicine, ITM, melasma, phenolic content

Available at: http://rjpharmacognosy.ir 
*Corresponding author: sa.ghafari@sbmu.ac.ir*, Tel: +9821-88776027