

## A study on effect of different vehicles in sustainability of essence in eau de cologne

H. Valizadeh<sup>1</sup>, P. Zakeri-Milani<sup>1</sup>, S. Ghanbarzadeh<sup>1,\*</sup>, M. Gholami<sup>2</sup>

<sup>1</sup> *Research Center for Pharmaceutical Nanotechnology, Faculty of Pharmacy, Tabriz University of Medical Sciences, Tabriz, Iran*

<sup>2</sup> *Faculty of Pharmacy, Tabriz University of Medical Sciences, Tabriz, Iran*

**Background and Aims:** The aim of this study was to prepare eau de cologne formulation with low release rate of essence, using accessible vehicles with simple and economical method.

**Methods:** Four vehicles were selected from seventeen solvent which had appropriate characteristics and two essences (geraniol and exotic fruit) were used in this study. A routine formulation included water (10%), essence (10%), alcohol (60%), and different vehicles (20%) was prepared. The release profile of the prepared eau de cologne evaluated by thermal gravimetric technique indicated different release characteristics amongst the four formulations.

**Results:** Glycerin and Propylene glycol showed the slow release, while the two type of Polyethylene glycol showed the fast release with essentially no retention by these vehicles.

**Conclusions:** Concerning the low cost and accessibility of these vehicles and simplicity of the process, this method improves the performance of eau de cologne in regard to endurance and can be used in eau de cologne manufacturing in industrial scale.

**Keywords:** Essence, Thermogravimetry, Eau de cologne, Geraniol, Exotic fruit