Supplementary Materials: A Green and Rapid Analytical Method for the Determination of Hydroxyethoxyphenyl Butanone in Cosmetic Products by Liquid Chromatography

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Preparation of a Laboratory-Made Cosmetic Cream

Reagents

Emulsifier Guinama O/W, avocado pear oil, dimethicone 350, propyleneglycol, hydrovitone, and phenonip were used as cosmetic ingredients. All the ingredients were cosmetic-grade and they were purchased from Guinama S.L. (Valencia, Spain). Hydroxyethoxyphenyl butanone (HEPB) 95 % from Enamine (Riga, Lativa) and deionized water obtained from a Connect water purification system provided by Adrona (Riga, Latvia) were also used.

Formulation

In order to prepare the cosmetic emulsion, a mixture containing the lipophilic ingredients (phase A) and a mixture containing the hydrophilic ingredients (phase B) were prepared separately in two different bakers. In this sense, phase A was composed by emulsifier Guinama O/W (20 %, w/w), avocado pear oil (5 %, w/w), and dimethicone 350 (5 %, w/w); and phase B was composed by propyleneglycol (5 %, w/w), hydrovitone (4 %, w/w), HEPB (0.4 %, w/w), and deionized water (q.s. 100 %, w/w). Additionally, the preservative system (phase C) was composed by phenonip (0.5 %, w/w).

Procedure

First, phase A and phase B were introduced in a hot water bath (70 ºC) until phase A melted. Then, phase B was added dropwise to phase A under continuous mixing in the hot water bath. After that, the mixture was let to cold down to room temperature under continuous mixing. Finally, phase C was added dropwise under continuous mixing until a homogeneous mixture was obtained.