Research Journal of Pharmacognosy (RJP) 4(Supplement), 2017: 24

First Iranian Pharmacognosy Congress; Nov 29-30, 2017

Abstract

Processing and stabilization of *Aloe Vera* leaf gel by adding chemical and natural preservatives

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Background and objectives: *Aloe vera* has been used as a medicinal herb for thousands of years. *Aloe vera* leaves can be separated into latex and gel which have biological effects. Aloe gel is a potent source of polysaccharides. When the gel is exposed to air, it quickly decomposes and decays and loses most of its biological activity. There are various processing techniques for sterilizing and stabilizing the gel. The aim of this study was to improve stabilization of the gel by adding some chemical and natural preservatives. **Methods:** The gel was obtained from *Aloe vera* leaves and after some processing chemical and natural preservatives were added. Chemicals included citric acid, ascorbic acid, vitamin E and potassium sorbate while natural preservatives were two essential oils derived from *Cinnamomum zeylanicum* and *Eugenia caryophyllata*. All these operations were performed under sterile conditions and they were evaluated at different temperatures and times. Appearance and taste changes of gel were studied organoleptic. Microbiological tests and some physical assays such as pH, refractometry and viscosity properties as well as determination of total sugars were measured. NMR and FT-IR analyses were performed for determining the quality of samples. **Results:** After data analyzing, the results showed that the samples formulated with chemical additives together with essential oils were more suitable and stable compared to the control samples after 90 days and the effective ingredient acemannan, remained stable. **Conclusion:** The stable gel can be considered for therapeutic properties and be used for edible and medicinal purposes.

Keywords: *Aloe vera*, chemical preservatives, essential oils, gel, stabilizing

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