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Abstract

Quantitative analysis of allantoin in Iranian corn silk

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Background and objectives: *Zea mays* is cultivated in different parts of Iran and corn silk is used in traditional medicine. Allantoin is one of the major compounds in corn silk. The purpose of this research was the quantitatve analysis of allantoin in corn silks belonging to several regions of Iran. **Methods:** The samples of corn silk were prepared from three provinces of Iran (Kermanshah, Fars and Razavi Khorasan). The dried plant materials were infused in boiling distilled water with a temperature of 90-95 °C on magnetic stirrer for 30 min. The levels of allantoin in aqueous extracts were determined by HPLC. Quantification was achieved using an C18 column (250×4.6 mm, 5 µm) under isocratic conditions and phosphate buffer solution (pH 3.0) as the mobile phase at a flow rate of 0.5 mL/min. Column effluent was monitored at 210 nm. The calibration curve of allantoin standard was plotted with concentrations from 6.25 to 100 µg/mL. **Results:** The calibration curve of standard was linear over the concentration range used (R^2=0.9999). The results showed that the amount of allantoin in samples was between 205 and 374 mg/100g of dry plant material. The corn silk samples of Razavi Khorasan and Fars provinces showed the lowest and highest amount of allantoin, respectively. **Conclusion:** The levels of allantoin obtained in this study were higher than the values reported in other studies; therefore, the researchers of this project are investigating the wound healing effect of corn silk.

Keywords: allantoin, corn silk, HPLC, quantitative analysis

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