Study of Stability and Properties of Kefiran and Succinyl Kefiran for Application to Cosmetics and Foods

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Abstract

Kefir is a popular fermented milk produced by a starter, the so-called Kefir grains, in the Caucasus region of Russia. Kefiran contained in Kefir is a polysaccharide with a repeating unit of Glc-Gal-(-Glc)-Gal-Gal-Glc, and its molecular weight is 1,000-4,000 kDa. Lactobacillus kefiranofaciens KF-75 isolated from the Kefir grains was improved to yield an industrial Kefiran production of 2 kg per day of purified Kefiran, at present. An aqueous solution of 1%(w/v) Kefiran was gelatinized automatically by standing at low temperature (5 ºC). In contrast, Kefiran chemically modified by acylation, which was Succinyl Kefiran, did not gelatinize under at low temperature (5 ºC), nor aqueous solution of 1%(w/v) Succinyl Kefiran in 40%(v/v) ethanol concentration. Because of the high viscosity (60mPas, at 20 ºC) of 1%(w/v) Succinyl Kefiran aqueous solution (pH6.5), showed useful properties, both as a beverage ingredient for adding viscous accretion property, and as a cosmetic ingredient for human skin for giving moisture and good feeling accretion properties.

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