Extraction of Liquiritin and Glycyrrhizic Acid from Licorice by using Solid-Phase Extraction with Ionic Liquid-based Silica

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New ionic liquid-based silica sorbent was synthesized by using commercial silica and ionic liquid. The ionic liquid-based particles obtained were used successfully as a special sorbent in a solid-phase extraction process to separate the liquiritin and glycyrrhizic acid from licorice. Different washing and elution solvents, such as water, methanol/water (v/v) and methanol were evaluated. A comparison of the ionic liquid-based silica cartridge and traditional C18 cartridges showed that higher selectivity using ionic liquid-based silica sorbent. Quantitative analysis was carried out by high-performance liquid chromatography using a C18 column with good linearity obtained from 5×10-4 to 0.2 mg/mL (r2＞0.99) with the relative standard deviations ＜1.0%. The target compounds in commercial herbal medicines containing licorice were determined, and the bound rates between the target compounds and protein were obtained by this sorbent.