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Separation and Determination of Yellow Gardenia Pigments for Food and Iridoid Constituents in Gardenia Fruits by Micellar Electrokinetic Chromatography

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Micellar electrokinetic chromatography (MEKC) methods were developed for analyzing crocin and crocetin yellow gardenia pigments, and geniposide and gardenoside in gardenia fruits. Crocin and crocetin pigments were successfully separated by MEKC with a 20 mM SDS solution in 50 mM phosphate buffer (pH 7.0) containing 20% acetonitrile and another MEKC method with a 20 mM ammonium formate buffer (pH 7.0) containing 2.0% butyl acrylate/butyl methacrylate/methacrylic acid copolymer sodium salts (BBMA). Geniposide and gardenoside were also successfully separated by MEKC with a 20 mM sodium dodecyl sulfate (SDS) solution in 30 mM borate buffer (pH 8.5). The crocin and crocetin yellow pigments were extracted from food samples (candies and noodles) by solid-phase extraction cartridges and analyzed by MEKC with SDS. The geniposide and gardenoside in gardenia fruits grown in different habitats were determined by the developed technique.

Keywords: micellar electrokinetic chromatography, crocin, crocetin, geniposide, gardenoside

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