

Simultaneous Extraction of Bioactive Limonoid Aglycones and Glucoside from *Citrus aurantium* L. Using Hydrotropy

Deepak V. Dandekar, Guddadarangavvanahally K. Jayaprakasha,
and Bhimanagouda S. Patil*

Vegetable and Fruit Improvement Center, Department of Horticultural Sciences,
Texas A&M University, College Station, TX 77845, USA. Fax: 979-862-4522.
E-mail: b-patil@tamu.edu

* Author for correspondence and reprint requests

Z. Naturforsch. **63c**, 176–180 (2008); received August 15/September 28, 2007

Citrus limonoids were demonstrated to possess potential biological activities in reducing the risk of certain diseases. Limonoids are present in citrus fruits in the form of aglycones and glucosides. At present, limonoid aglycones and limonoid glucosides are extracted in multiple steps using different solvents. In order to understand their potential bioactivity, it may be beneficial to isolate and purify these compounds using environment friendly methods. A new method of extraction and purification of limonoids was established using a hydrotrope polystyrene adsorbent resin. Extraction of aglycones and glucosides was achieved in a single step, using an aqueous solution of sodium cumene sulphonate (Na–CuS). Sour orange (*Citrus aurantium* L.) seed powder was extracted with 2 M Na–CuS solution at 45 °C for 6 h. The filtered extract was diluted with water and loaded on an SP 700 adsorbent column. The column was washed with distilled water to remove the hydrotrope and then eluted using water and methanol in different compositions to obtain three compounds. The structures of the isolated compounds were confirmed by NMR spectroscopy as deacetyl nomilinic acid glucoside (DNAG), deacetyl nomilin (DAN) and limonin (LIM).

Key words: Citrus, Deacetyl Nomilinic Acid Glucoside, Deacetyl Nomilin, Sodium Cumene Sulphonate