

Isolation, structure elucidation, identification and quantitative analysis of di(2-ethylhexyl) phthalate (DEHP) from the roots of *Chlorophytum borivilianum* (safed musli)

ABSTRACT

Chlorophytum borivilianum (safed musli) is a traditional herbaceous medicinal plant belonging to family Liliaceae. Its roots are being employed in folk medicine. The crude extract of *C. borivilianum* has been consumed due to its versatile therapeutic uses. The scientific studies related to the important pharmacological properties are widely conducted and the remarkable bioactivities of *C. borivilianum* are proven in literatures. So far, the isolated chemical compounds are mainly saponins. In this research, the isolation was focused on compounds other than saponins and bis(2-ethylhexyl) benzene-1,2-dicarboxylate was isolated for the first time from the roots of *C. borivilianum*. The structure was identified based on the spectral data of ¹H NMR, ¹³C NMR, DEPT, COSY, HMBC, HMQC and also based on the comparison with the previous literature data. This is the first report regarding the presence of this compound in *C. borivilianum* as well as its genus. A high performance liquid chromatographic (HPLC) method with photodiode array detection was established to identify and quantify bis(2-ethylhexyl) benzene-1,2-dicarboxylate.

Keyword: *Chlorophytum borivilianum*; Isolation; Bis(2-ethylhexyl) benzene-1,2-dicarboxylate; Structure elucidation; Quantification