

Title Analysis of sesulfo-glucosinolates by HPLC- electrospray ionization mass spectrometry in Korean Chinese cabbage

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Abstract

Glucosinolates have attracted significant interest due to the chemopreventive properties of some of their transformation products. A selective and sensitive quantitative method for direct determination of desulfo-glucosinolates was developed using High Performance Liquid Chromatography-Electrospray Ionization Mass Spectrometry. We carried out a systematic optimization and validation of a quantitative assay for the direct analysis of desulfo-glucosinolates in Korean Chinese cabbage. Optimum condition for excellent peak shape and resolution was obtained by HPLC on an Inertsil ODS2 (C18) column using solvent system: (A) deionised water and (B) 20% acetonitrile. MS operation conditions were as follows: ion spray voltage 4.8kV (positive ion mode); orifice voltage; nebuliser gas, air; curtain gas, nitrogen. As a result, HPLC profiles of desulfo-glucosinolates isolated in Korean Chinese cabbage; Progoitrin, Glucoraphanin, Sinigrin, Glucoalyssin, Gluconalin, 4-Hydroxy-3-indolylmethyl, Glucobrassicinapin, Glucoerucin, Glucobrassicin and 4-Methoxyglucobrassicin. Those glucosinolates were then confirmed by the mass spectrometry. Level of gluconapin ($2.63 \pm 0.13 \mu\text{mol/g}$ dry weight) was showed the highest individual desulfo-glucosinolates in Korean Chinese cabbage.