

Identification and quantification of flavonol glycosides in almond seedcoats using MALDI-TOF MS.

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Abstract:

Interest in the molecular composition of almonds is growing, due to their popularity in a wide variety of food formulations. Matrix-assisted laser desorption/ionization time-of-flight mass spectrometry (MALDI-TOF MS) is a powerful new technique that can be used to rapidly identify and quantify possible bioactive compounds in these popular tree nuts. Four flavonol glycosides were identified in almond seedcoats for the first time: isorhamnetin rutinoside, isorhamnetin glucoside, kaempferol rutinoside, and kaempferol glucoside. A MALDI-TOF MS methodology was developed using rutin (quercetin-3-rutinoside) as an internal standard to quantitatively determine each of the four flavonol glycosides. Results of MALDI-TOF MS analysis were verified by high performance liquid chromatography.