

series	cap color	membrane	pore size	part #
nanofilter Vial™	●	PTFE	0.45µm	15540

Analysis of Sinapoylmalate in the Arabidopsis thaliana Leaf by Using the nanofilter Vial®: Sinapoyl Malate is a major UV protectant in Arabidopsis thaliana

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Introduction

Plants contain rapidly evolving specialized metabolic system, and presumably encounter destabilized evolutionary intermediates along their mutational trajectories. Have plants evolved unique molecular mechanisms that assist folding of those destabilized proteins and/or mitigate proteotoxicity arising from protein misfolding? We use the model plant *Arabidopsis thaliana* to examine the in vivo function and behavior of mutant enzymes that exhibit broadened product promiscuity and/or decreased folding stability in vitro. We attempt to identify genetic components involved in cellular mechanisms that assist folding or alter product profile of these mutant enzymes. We designed a simple sample preparation method for the analysis of Sinapoyl Malate by LC-MS to study its mechanism in UV protection of the *Arabidopsis thaliana*.

Method

- Grind Leaf tissue under liquid nitrogen.
- Extract with 80% MeOH (1mL MeOH to 200mg fresh weight leaves).
- Centrifuge.
- Filter with 0.2µm PTFE nanofilter Vial™.
- Analyze by UHPLC - Orbitrap Mass Spec.

Equipment

HPLC Column: Phenomenex Kinetex 2.6µm C18 150x3.0

Mobile Phase

Solvent A: H₂O + 0.1% Formic Acid

Solvent B: Acetonitrile + 0.1% Formic Acid

Gradient

time	%A	%B
2min	95	5%
40min	20	80%
40.1min	5	95%
44min	5	95%
44.1min	95	5%
48min	95	5%

