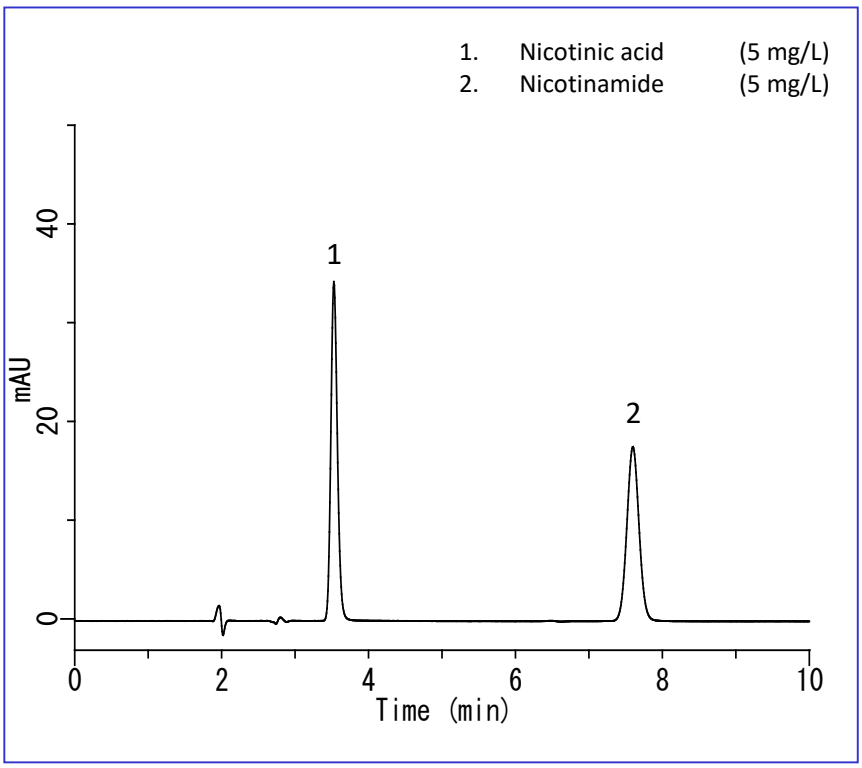
Analysis of Niacin in Foods

Niacin is a generic name for nicotinic acid and nicotinamide, which are also present in foods as derivatives. Microbial assays are known to be sensitive, but the use of reversed-phase HPLC with ion-pairing methods allows both the analysis and isolation of niacin. The HPLC method described in the Guideline for Food Hygiene Inspection suggests an Inertsil ODS-2 analytical column. This report demonstrates improved results using an Inertsil ODS-3, which is a low-pressure column and hence is more durable.

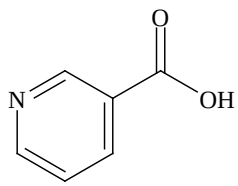
(K.Suzuki)

Example: Measurement of standards

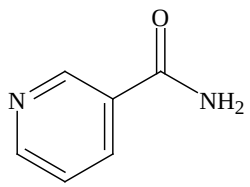


Structural formula

Niacin(Vitamin B3)



Nicotinic acid



Nicotinamide

Structures are created using Chemistry 4-D Draw which is provided By ChemInnovation Software, Inc.

HPLC conditions

Column : Inertsil ODS-3
(5 µm, 150 x 4.6 mm I.D.)

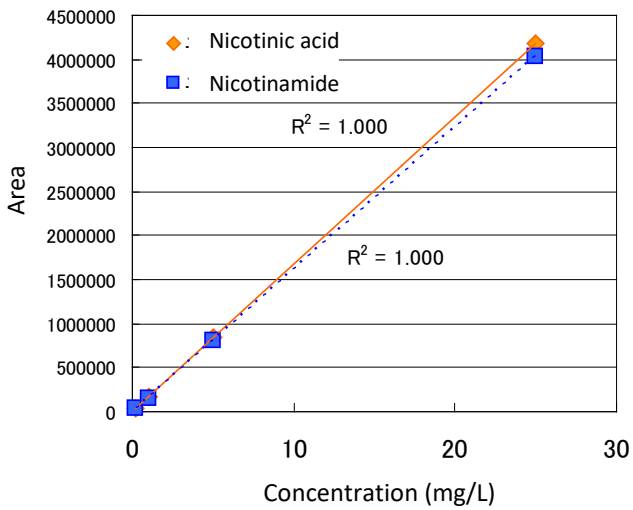
Eluent : A) CH_3OH
B) 0.1 % CH_3COOH, 5 mM IPCC-06
(IPCC-06 : Sodium 1-Hexanesulfonate)
A/B = 7 / 93, v/v
(Mixed by a gradient mixer)

Flow rate : 1.0 mL/min

Column temperature : 40 ˚C

Detected : UV 230 nm

Injection volume : 20 µL



Calibration curve

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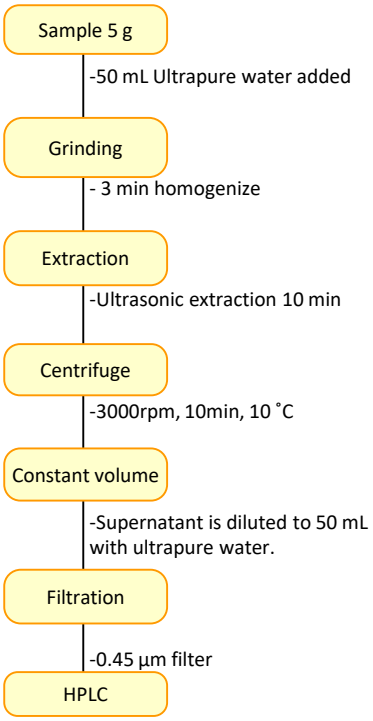
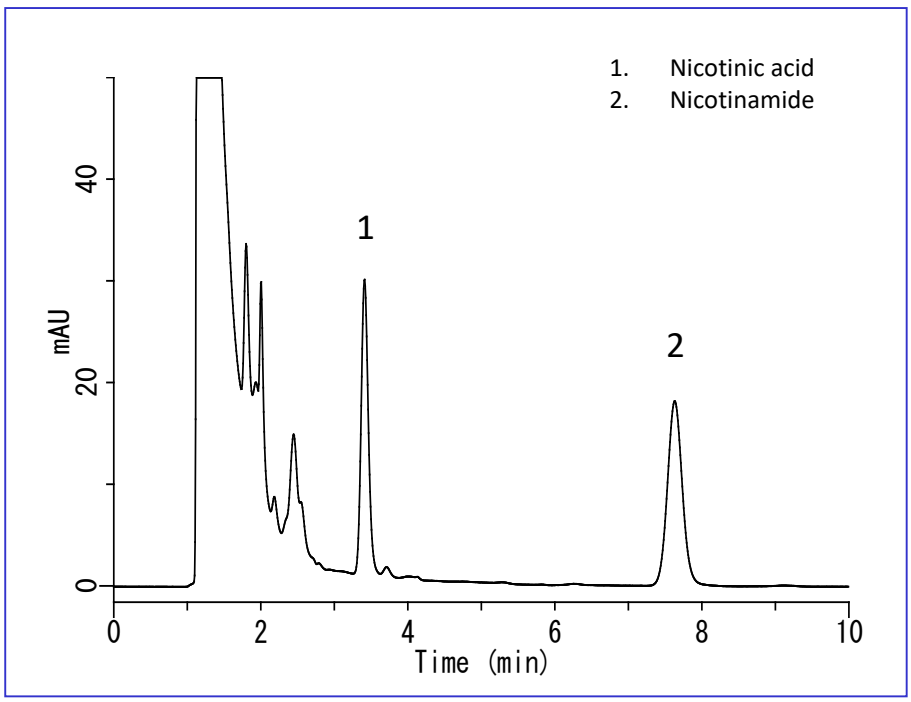
Example of spinach analysis

Example of pretreatment





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