# Analysis of Allantoin in Cosmetics Using HILIC HPLC

Allantoin is a widely used in products such as pharmaceuticals and cosmetics. Due to its strong water solubility, reversed-phase HPLC using columns such as ODS has little retention, and the effects of ion pairs make analysis difficult. In this application, hydrophilic interactions (HILIC mode) was used to obtain excellent assay results.
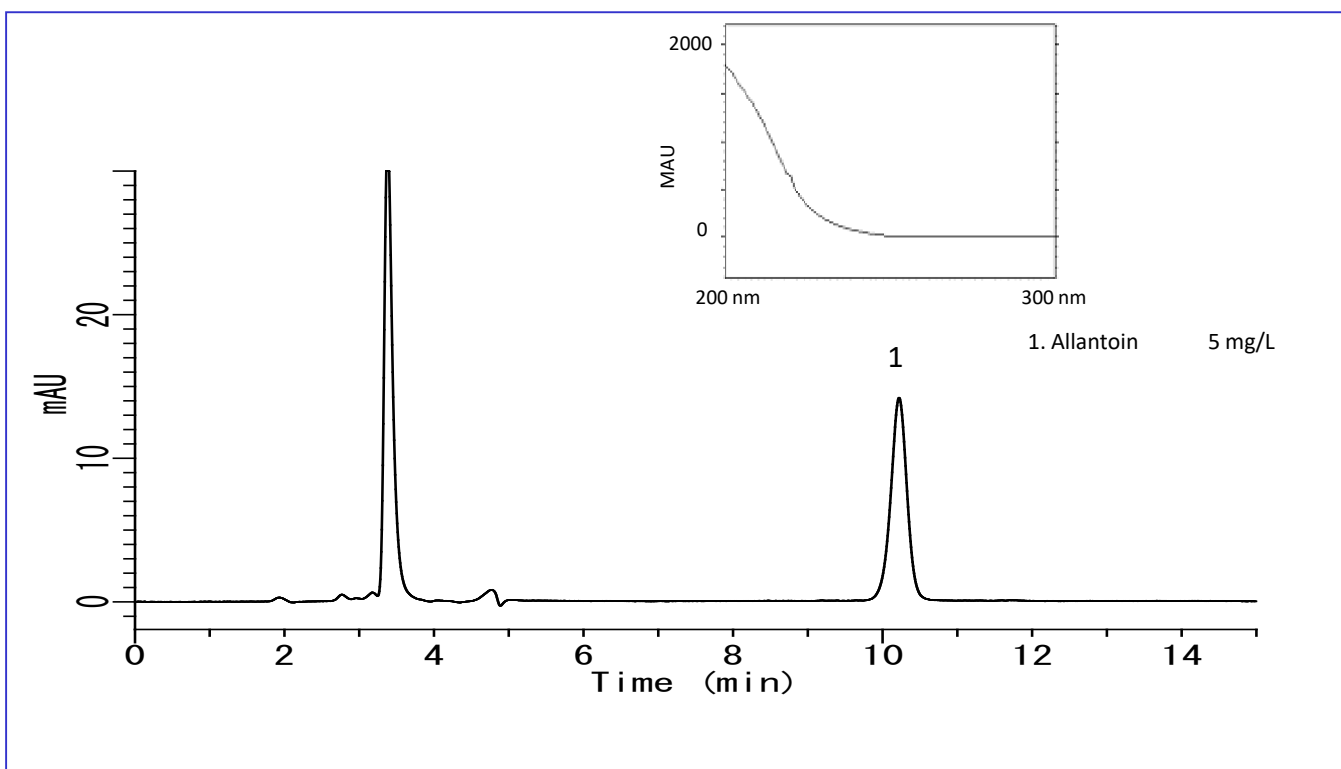
(K.Suzuki)

Structural formula
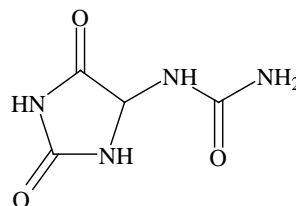
Allantoin

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

Example: Measurement of standard

2000

MAU

0

200 nm   300 nm

1. Allantoin   5 mg/L

HPLC conditions

Column	: Inertsil HILIC
	(5 µm, 250 x 3.0 mm I.D.)
Eluent	: A) CH_3CN
	B) H_2O
	A/B = 95/5, v/v
	(gradient mixer)
Flow rate	: 0.4 mL/min
Column temperature	: 40 ˚C
Detected	: PDA 210 nm
Injection volume	: 20 µL

$R^2 = 1.000$

Concentration (mg/L)

Calibration curve
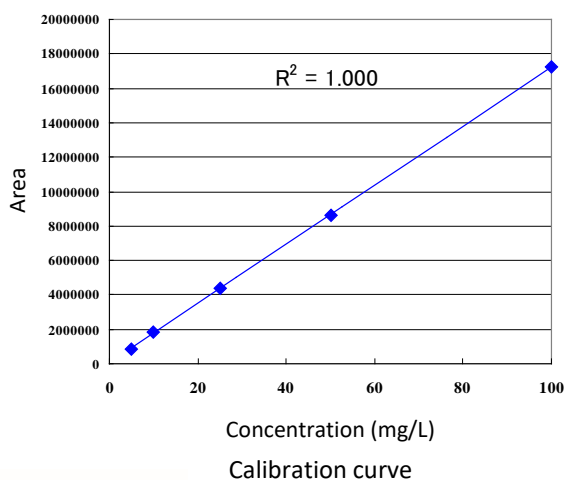
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Examples of analysis of cosmetic solutions

The assay was performed by filtering the cosmetic solution through a 0.45 µm filter and diluting the solution 10-fold with acetonitrile.
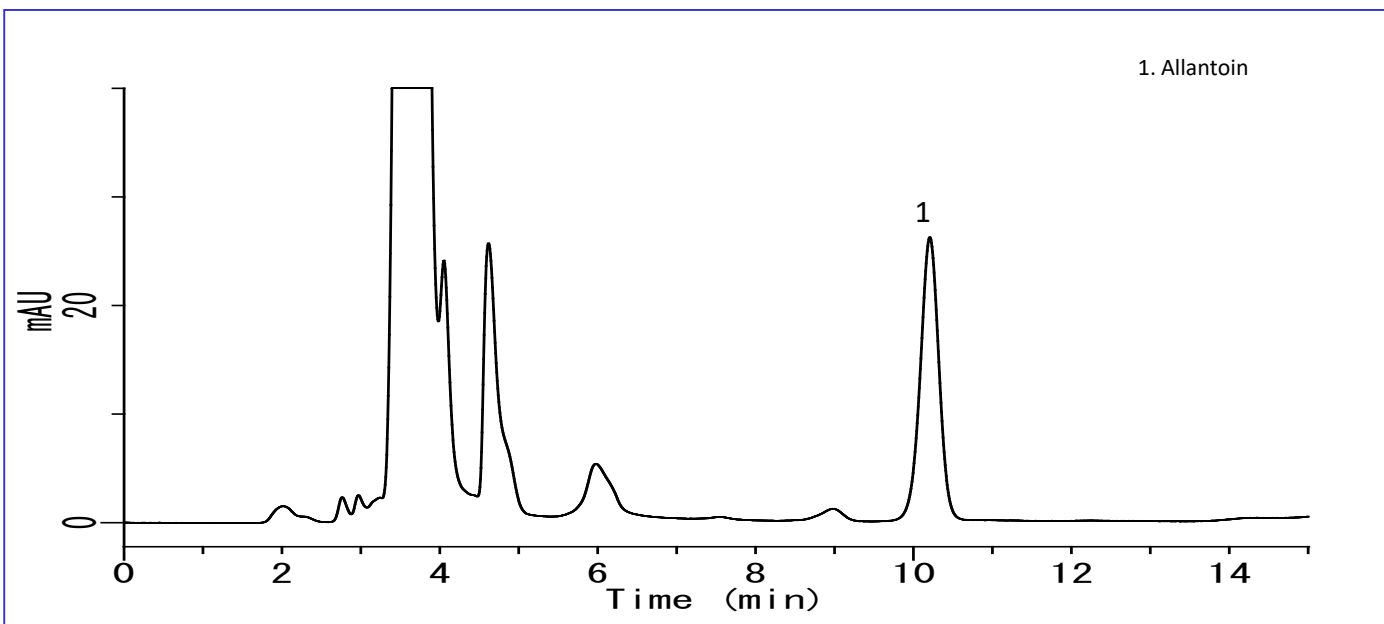
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