

Analysis of Allantoin

Introduction

Allantoin has anti-inflammatory effect and cellular activator action and therefore is used widely for pharmaceutical products and cosmetics. Allantoin is a highly hydrophilic substance, and so by utilizing the column for the hydrophilic interaction chromatography (HILIC), the commercial eye drops was measured as reported in this note.

Keyword: Allantoin, HILIC, Eye Drops, UV Detection

Experimental

[Equipment]

Eluent Pump: PU-2080
 Degasser: DG-2080-53
 Column Oven: CO-2060
 Autosampler: AS-2057
 Detector: UV-2075

[Conditions]

Column: Finepak SIL NH2-5
 (4.6 mm I.D. x 250 mm L, 5 μm)
 Eluent: Acetonitrile/Water (80/20)
 Eluent Flow Rate: 1.0 mL/min
 Column Temperature: 40 °C
 Wavelength: 210 nm
 Injection Volume: 10 μL
 Standard Sample: Allantoin 5 μg/mL in eluent

The structural formula of allantoin is shown in Fig. 1.

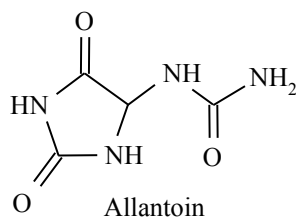


Fig. 1 The structural formula of allantoin

Results

The chromatograms of standard allantoin and eye drops are shown in Fig. 2.

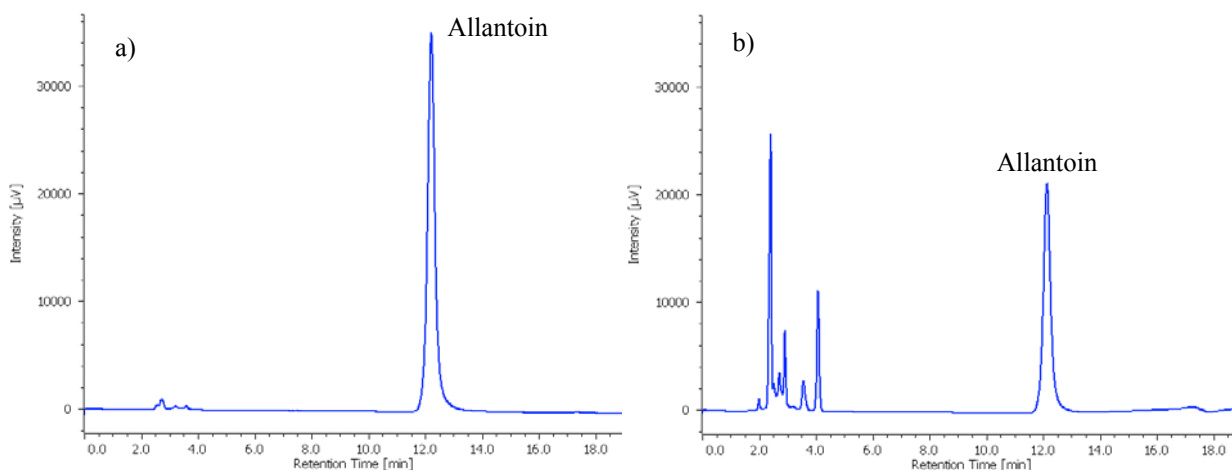


Fig. 2 Chromatogram of standard allantoin and eye drops

a) Standard allantoin, b) Eye drops

Preparation: Dilute the eye-drops by mobile phase about 10 times, then filtrate by 0.45 μm membrane filter