



ALCALOIDS - XANTHINE DERIVATIVES

INTRODUCTION

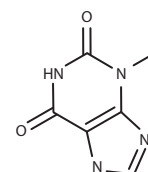
Xanthine alkaloids occur naturally in various plants, such as cocoa, tea and coffee tree. They are commonly used for their effects as mild stimulants. Xanthine alkaloids are monitored in food and drinks, e.g. in chocolate, cocoa powder, and energy drinks.

Substance: Theobromine, Xantheose, diurobromine, CAS Number 83-67-2

Synonym: 3,7-dimethylxanthine

2,6-Dihydroxy-3,7-dimethylpurine

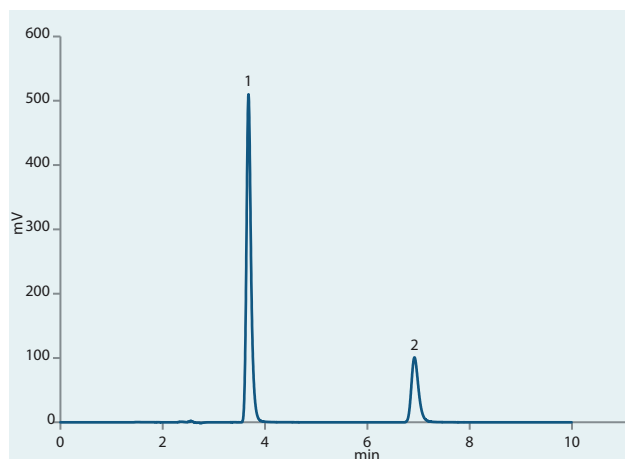
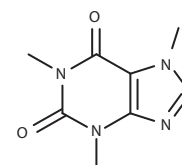
Formula: 3,7-Dimethyl-3,7-dihydro-1H-purine-2,6-dione



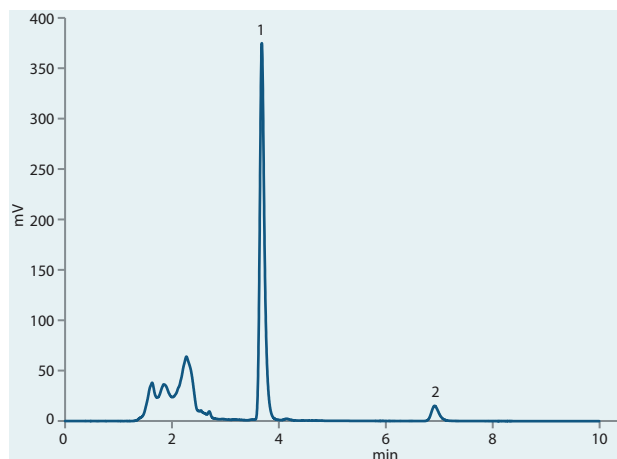
Substance: Caffeine, Guanine, Methyltheobromine, Theine, CAS Number 58-08-2

Synonym: 1,3,7-Trimethylxanthine

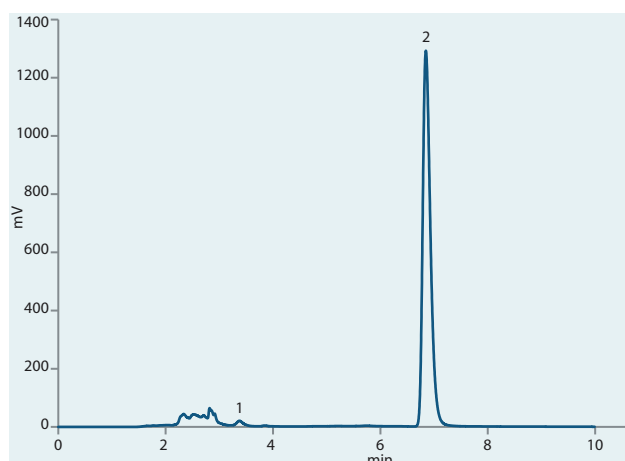
Formula: 1,3,7-Trimethyl-3,7-dihydro-1H-purine-2,6-dione



Theobromine and caffeine standard



Cocoa sample



Energy drink

Column	ARION® Plus C18, 5.0 µm
Dimensions	250 mm x 4.6 mm
Part number	ARI-5720-LM46
Mobile phase	methanol/water (30/70 v/v)
Flow rate	1.0 ml/min
Temperature	30 °C
Detection	UV @280 nm
Analytes	1. Theobromine 2. Caffeine