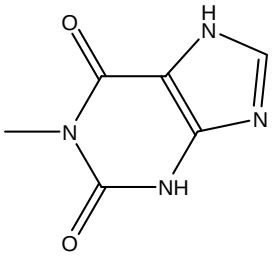
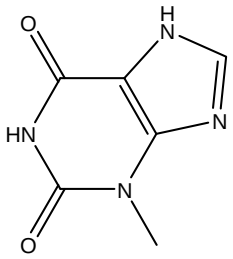
キサンチン類　Xanthines

6 種のキサンチン類，3-メチルキサンチン，1-メチルキサンチン，テオブロミン，1,7-ジメチル尿酸，テオフィリン及びカフェインの一斉分析例を示します．カラムにはアダマンチル基を導入した表面極性の高い CAPCELL CORE ADME S2.7（2.1 mm i.d. x 50 mm）を用い，流速を通常の 3 倍とすることで，7 分以内で測定することが可能です．

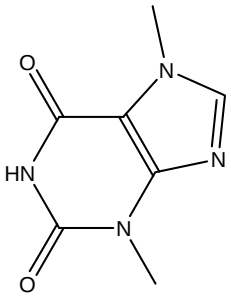
Six xanthines of 3-methylxanthine, 1-methylxanthine, theobromine, 1,7-Dimethyluric acid, Theophylline and caffeine were analyzed simultaneously. Good separation could be completed within 7 minutes under a 3-times fast flow rate by using CAPCELL CORE ADME S2.7 (2.1 mm i.d. x 50 mm), which is a column introduced with high polar adamantyl group.



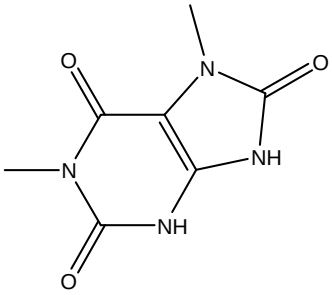
1. 3-メチルキサンチン (10 μg/mL)
   3-Methylxanthine (M.W. 166.1)



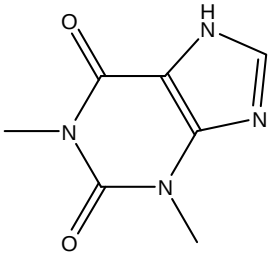
2. 1-メチルキサンチン (10 μg/mL)
   1-Methylxanthine (M.W. 166.1)



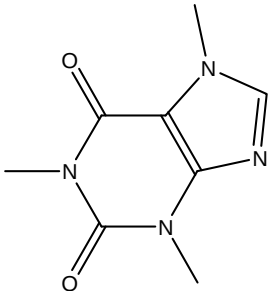
3. テオブロミン (10 μg/mL)
   Theobromine (M.W. 180.2)



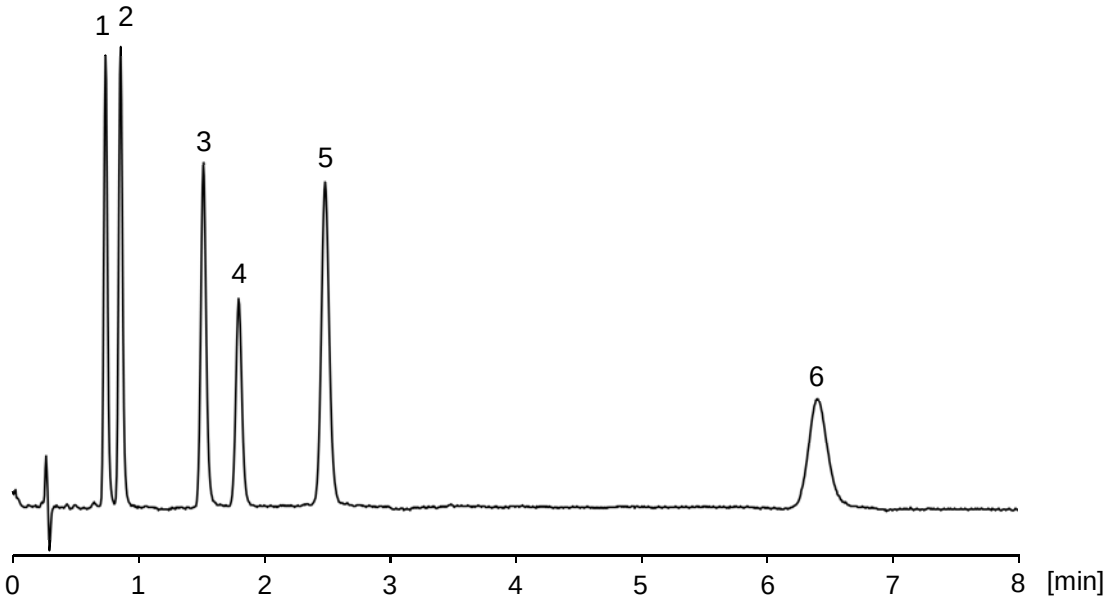
4. 1,7-ジメチル尿酸 (10 μg/mL)
   1,7-Dimethyluric acid (M.W. 196.2)



5. テオフィリン (10 μg/mL)
   Theophylline (M.W. 180.2)



6. カフェイン (10 μg/mL)
   Caffeine (M.W. 194.2)



【HPLC Conditions】

Column	: CAPCELL CORE ADME S2.7 ; 2.1 mm i.d. x 50 mm
Mobile phase	: 0.1 vol% HCOOH, H_2O / CH_3CN = 98 / 2
Flow rate	: 600 μL/min
Temperature	: 40 ˚C
Detection	: UV 254 nm
Inj. vol.	: 1 μL
Sample dissolved in	: 1-Methylxanthine, 3-Methylxanthine and 1,7-Dimethyluric acid were dissolved in 0.15 mol/L NH_3 aq at 1 mg/mL. All the other compounds were dissolved in water at 1 mg/mL. Equal amount of all the solutions were mixed together, and further diluted to 10 μg/mL with water.

※ 1 μg/mL = 1 ppm