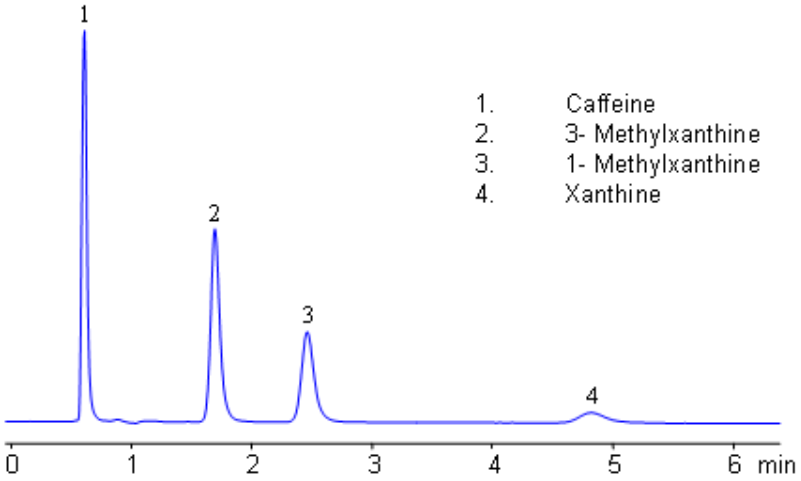
HPLC Separation of Caffeine, 3- Methylxanthine, 1- Methylxanthine, Xanthine

Column:	**SHARC 1**
Size:	3.2 x 100 mm
Mobile phase:	MeCN/MeOH 95/5 with 0.1% Formic acid with 0.01%AmFm
Flow:	1.0 mL/min
Detection:	UV 270 nm



Application Notes: Xanthines are polar neutral compounds which are hard to retain and separate by traditional reversed-phase chromatography. However a hydrogen bonding method makes separation possible due to an observable correlation between the number of hydrogens available for interaction and retention time. Molecules with no hydrogens available for interactions retain less, and compound with multiple hydrogen donors retain the most. Retention time can be controlled by changing ratio of ACN:MeOH. Other protic and aprotic solvents can be used to control retention time and selectivity of separation.

Application Columns: SHARC1, 3.2×100 mm, 5 µm, 100 Å, To learn more about SHARC1columns click here . To order this column click here . To see more chromatographic separations check our web site.

Application Compounds: Caffeine, 3-methylxanthine, 1-methylxanthine, and xanthine

The SHARC™ family of innovative columns represents the first commercially available columns primarily utilizing separation based on hydrogen bonding. SHARC stands for Specific Hydrogen-bond Adsorption Resolution Column . Hydrogen bonding involves an interaction or attraction between a bound hydrogen atom and molecules containing electronegative atoms, such as oxygen, nitrogen, and fluorine.

Method Parameters

Column	Sharc 1, 3.2×100 mm, 5 µm, 100 Å
Mobile Phase	MeCN/MeOH
Buffer	AmFm, Formic acid
Flow Rate	1.0 mL/min
Detection	UV, 270 nm

Quelle: https://sielc.com/separation_of_caffiene_3-methylxanthine_1-methylxanthine_xanthine