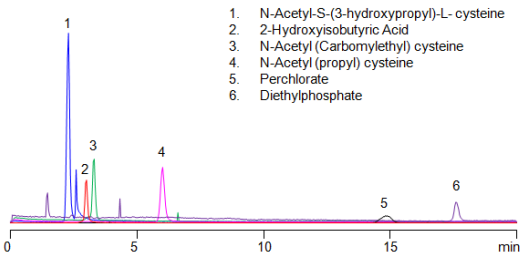
HPLC-MS Method for Separation of Metabolites and Biomarkers on Newcrom B Column



Column:	Newcrom B
Column size:	4.6 × 150 mm, 5 µm, 100A
Column part number:	NB-46.150.0510
Mobile phase:	Gradient MeCN – 5-50%, 20 min
Buffer:	Ammonium acetate pH 4.0 –10-25 mM, 20 min
Flow rate:	1.0 mL/min
Detection:	ESI- and ESI+

#	Compound	Expected m/z	Observed m/z	ESI Mode
1	3HPMA	220	182	*Positive*
2	2HIB	103	103	Negative
3	NAE	233	235	*Positive*
4	NAPR	204	206	*Positive*
5	PERC	99	99	Negative
6	DPP	248	249	Negative

Separation type: Liquid Chromatography Mixed-mode

Metabolites and biomarkers are key terms in the fields of biochemistry, pharmacology, and medicine.

N-Acetyl-S-(3-hydroxypropyl)-L-cysteine (3HPMA) is a common metabolite of the herbicide and pollutant Acrolein. 2-Hydroxyisobutyric Acid (2HIB) is a neuro and adrenal toxin that is a common metabolite of the fuel additives Methyl tert-butyl ether (MTBE) and Ethyl tert-butyl ether (ETBE). N-Acetyl(Carbomylethyl)cysteine (NAE) is a metabolite of Acrylamide which can act as a neuro toxin in cases of long term exposure. N-Acetyl(propyl)cysteine (NAPR) is a metabolite of the popular industrial organic solvent 1-bromopropane (1-BP). Perchlorate (PERC) inhibits thyroid activity and can be used to treat hyperthyroidism, but can be toxic in large amounts or in regularly-functioning thyroids. Diphenylphosphate (DPP) is a metabolite of the popular flame retardant triphenyl phosphate (TPHP). These acidic toxin metabolites can be retained, separated, and analyzed on a mixed-mode Newcrom B column with a mobile phase consisting of water, Acetonitrile (MeCN), and Ammonium Acetate (AmAc). This analytical method can be detected with high resolution and peak symmetry with many evaporative detection methods, including Evaporative Light Scattering Detection (ELSD), Charged Aerosol Detector (CAD), and Electrospray Ionization (ESI) for Mass Spectrometry (MS).

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Method Parameters

Column	Newcrom B, 4.6 x 150 mm, 5 µm, 100 Å, dual ended
Mobile Phase	Gradient MeCN/H2O – 5-50%, 20 min
Buffer	Gradient Ammonium acetate pH 4.0 –10-25 mM, 20 min
Flow Rate	1.0 mL/min
Detection	ESI- and ESI

Quelle: https://sielc.com/hplc-determination-of-biomarkers