

Kinetex 2.6 µm Biphenyl

PPLICATIONS A

A Rapid, Automatable Solution for Phosphatidylethanol (PEth) LC-MS/MS Analysis in Whole Blood

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Part No::OUB-4622-ANMobile PhaseOBE-4622-ANMobile PhaseA: 10 mM Ammonium Acetate in watermarker for alcohol consumption. PEths are phospholipids with very similar structures, which makes them challenging to separate chromatographically. In this fast analysis, a Kinetex®Gradient:Time (min)%BCore-Shell Biphenyl LC column was used with a direct, in-plate blood. The automatable LC-MS/MS workflow, including sample preparation and column selection, greatly simplifies the analysis while achieving excellent analytical performance.Time (min)%BSample Preparation200 µL whole blood5.1100Add:1 mL Acetonitrile6.010Centrifuge: @ 13,500 rpm for 10 min96-Well Plate:Phree M Phospholipid Removal PlateNS/MS (MRM, SCIEX® 4000 QTRAP®)Sample:200 µL whole blood2. PEth 16:0 /16:02. PEth 16:0 /16:0Add:1 mL Acetonitrile into each well3. PEth 18:1 /18:1Pice a collection plate below the Phree plate Wash Plate:Place a collection plate below the Phree plate Place a new collection plate below the Phree Place a new collection plate below the Phr			Dimension:	50 x 2.1 mm		
WaterPhosphatidylethanol (PEth) has emerged as an ethanol specific marker for alcohol consumption. PEths are phospholipids with very similar structures, which makes them challenging to separate chromatographically. In this fast analysis, a Kinetex® Core-Shell Biphenyl LC column was used with a direct, in-plate phospholipid enrichment and cleanup for PEth from whole blood. The automatable LC-MS/MS workflow, including sample preparation and column selection, greatly simplifies the analysis while achieving excellent analytical performance.Gradient:Time (min) W&BSample: 200 μL whole blood Add: 1 mL Acetonitrile Generifuge: @ 13,500 rpm for 10 min 96-Well Plate: Place a collection plate below the Phree plate to collect wash fraction 1 mL of 1% Ammonia in 2-propanol and apply Vacuum, positive pressure, or centrifuge Place a new collection plate below the Phree Plate to collect on elution fraction 1 mL of 1% Ammonia in 2-propanol and apply Pry Down: Under a stream of nitrogen @ 40 °C Reconstitute: 50 μL of 30:70 Water/Acetonitrile (v/v)water Bit analysis, an ethanol specific manual specific <b< th=""><th></th><th></th><th>Part No.:</th><th><u>00B-4622-AN</u></th><th></th></b<>			Part No.:	<u>00B-4622-AN</u>		
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Inject: 10 μL onto LC-MS/MS		• • • • • • •		Tene . eni n		
	Inject:	10 μL onto LC-MS/MS				

Linearity Based on Standards in Neat Matrix

PEth	16:0/18:1	18:1/18:1	16:0/16:0
Range (ng/mL)	23.4 - 750	9.4 - 300	9.4 - 300
LLOQ (ng/mL)	3	0.6	0.6
R^2	0.9955	0.9923	0.9971

Recovery Value (%), CVs (%)

PEth	16:0/18:1	18:1/18:1	16:0/16:0
CV (n=8)	3.6	3.8	4.1
Recovery (%)	98.1	99.2	107.3

Highlights of the Workflow

Column:

1. Kinetex Core-Shell Biphenyl LC Column

- a. Efficiently resolved the PEth homologs
- b. Simple mobile phase solution
- 2. Phree Phospholipid Removal Plate
 - a. Effectively retains the PEth from complex matrix
 - b. Further cleanups prolonged LC column usage and reduces the risk for contaminants on the mass spectrometer

Have questions or want more details on implementing this method? We would love to help! Visit www.phenomenex.com/ChatNow to get in touch with one of our Technical Specialists

PHEN-RUO-00121



Need a different column size or sample preparation format?

PPLICATIONS

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