

## Phosphatidylethanol (PEth) 16:0/18:1 Calibrator curve in blood

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Introducing new phosphatidylethanol (PEth) reference material for clinical diagnostic & forensic toxicology testing applications by LC-MS/MS

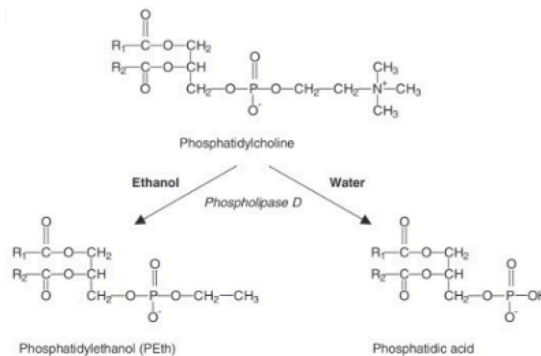
### Background:

PEth, or phosphatidylethanol, is a group of phospholipids formed only in the presence of ethanol from the action of phospholipase D. The super-sensitivity and specificity of blood PEth over other alcohol biomarkers for determining alcohol consumption has resulted in a wide use and recommendation in the EU and US as a confirmatory test for recent drinking.

There are two observations that should be made analyzing PEth.

The first is that there are about 48 known homologues of PEth with PEth 16:0/18:1 being the predominant species, 40 to 60 %. PEth 16:0/18:2 is about 10 to 25 %. A negative PEth 16:0/18:1 result does not necessarily mean total abstinence of alcohol.

The second key challenge in generating PEth calibration curves using a human blood matrix is the difficulty of obtaining blood from individuals with verified total abstinence from alcohol. To address this issue, we use porcine blood as an alternative matrix.



Our redhot certified spiking solutions are manufactured using validated processes that ensure the highest level of accuracy for critical LC-MS/MS application from TDM, diagnostic, research, and clinical chemistry.

### Quantity:

ready in blood 0, 0.05, 0.1, 0.2, 0.5 1.0 and 2.0  $\mu\text{M}$ . The concentrations are guideline values, certificate with exact values is added to each package.

Seven vials containing 0.4 mL /vial.

### Storage (ref 4):

Shelf life: storage at  $-20^{\circ}\text{C}$ , 18 months from production (Expiration date on the vial).

Short term storage: Room temperature max 8h and fridge 2 days.

### Application note:

For use as calibrator (standard curve) in LC-MS/MS applications for the qualitative and quantitative analysis of PEth-16:0/18:1.



Important Safety Notes:

The pharmacological and toxicological properties of this product have not been fully investigated. Use general laboratory practice and caution in the use and handling of this product. This product must not be used in humans.

References:

1. Gustavsson L, Alling C. Formation of phosphatidylethanol in rat brain by phospholipase D. *Biochem Biophys Res Com* 1987, 142(3):958-63.
2. Helander A. and Zheng Y. Molecular Species of the Alcohol Biomarker Phosphatidylethanol in Human Blood Measured by LC-MS. *Clinical Chemistry* 2009, 55(7):1395-1405.
3. Gnann H, Engelmann C, Skopp G, Winkler M, Auwärter V, Dresen S, Ferreirós N, Wurst FM, Weinmann W. Identification of 48 homologues of phosphatidylethanol in blood by LC-ESI-MS/MS. *Anal Bioanal Chem* 2010, 396(7):2415-23.
4. Isaksson A, Walther L, Hansson T, Andersson A, Stenton J and Blomgren B. High-Throughput LC-MS/MS Method for Determination of the Alcohol Use Biomarker Phosphatidylethanol in Clinical Samples by Use of a Simple Automated Extraction Procedure-Preanalytical and Analytical Conditions. *JALM* 2018, 2(6): 880-892