

Technical Bulletin

## Oxylipins Standard Mixture

Catalogue Number **SMB00965**

### Product Description

Oxylipins are oxidized lipids that are known to have a role in numerous biological and physiological processes like inflammation, communication between cells, proliferation, and apoptosis. The metabolic role of oxylipins in different physiological processes with includes pathways of signaling is a growing interest for research.

Thus, an accurate qualitative or quantitation of oxylipins is required for research purposes. This can be achieved by use of stable labeled oxylipins standards.

A method of choice for target or untargeted metabolomics analysis of different classes oxylipins is Liquid Chromatography – Mass Spectrometry (LC-MS). Typically, targeted or untargeted metabolomics approach is used for the study of oxylipins. However, overcoming ion suppression, ion variability and drifting signal are challenging aspects of analysis in both approaches. Use of a deuterated oxylipins mixture could overcome the challenges mentioned above.

The Oxylipin Standard Mixture is dissolved in Methanol. This mixture is formulated for use as a concentration standard for high-throughput LC/MS metabolomic analysis.

- All deuterated oxylipins are dissolved in methanol. Total vial volume is 200 µL.
- This is a ready to use solution.
- This mixture can be used for targeted and untargeted approaches.
- Ideal for LC-MS studies as internal standards.

### Components of the deuterated Oxylipins Standard Mixture

\*See batch-specific CoA for measured concentrations

Components
20-HETE-d6
9(S)-HODE-d4
Leukotriene B4-d4
Prostaglandin d2-d4
Prostaglandin F2 $\alpha$ -d4
Arachidonic Acid-d8
Leukotriene E4-d5
Palmitoyl Ethanolamide-d4

### Reagents required and not provided

Butylated Hydroxytoluene – B1378; EDTA – EDS; 1-cyclohexyluriedo-3-dodecanoic acid (CUDA) and 1-Phenyl 3-Hexadecanoic Acid Urea (PHAU); acetonitrile (ACN) - 34851; Methanol (CH3OH) – 34860.

### Precautions and Disclaimer

This product is for R&D use only. Not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

### Storage/Stability

Store the sealed vials at -20 °C.

### Preparation Instructions

The Oxylipin Standard Mixture is a ready-to-use solution.

## Procedure

1. To 50 µL plasma samples add 0.42 µL deuterated Oxylipins Standard Mixture.
2. Add 10µL of antioxidant butylated hydroxytoluene and ethylenediaminetetraacetic acid (EDTA) and 10 µL of 1000 nM 1-cyclohexyluriedo-3-dodecanoic acid and 1-phenyl-3-hexadecanoic acid urea.
3. Dilute to final volume of 250 µL with 1:1 acetonitrile: methanol.

4. Vortex and incubate at 20 °C for 30 minutes to precipitate protein, and centrifugate at 15,000 rcf for 5 minutes.
5. Pass through a 0.2 µm PVDF filter plate and store at -20 °C until analysis.

## References

Barupal, D.K.; *et al.*, "A Comprehensive Plasma Metabolomics Dataset for a Cohort of Mouse Knockouts within the International Mouse Phenotyping Consortium." *Metabolites* **9**, 101 (2019)

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