Technical Bulletin

Steroids Standard Mixture

Catalogue number SMB00968

Product Description

Steroid hormones are essential in numerous physiological processes including metabolism, homeostasis, development, growth, reproduction, and energy metabolism. They also have profound roles in molecular and cellular mechanisms.

Thus, an accurate quantitative or qualitative analysis is required for research purposes. This can be achieved by using stable labeled steroid standards.

A method of choice for target or untargeted metabolomics analysis of different classes of steroid's is Liquid Chromatography – Mass Spectrometry (LC-MS). For targeted or untargeted metabolomics overcoming ion suppression, ion variability and drifting signal are challenging aspects of analysis. Use of a deuterated steroids mixture could overcome the challenges mentioned above.

The Steroids 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 steroids are dissolved in methanol and ready to use. Total vial volume is 1 mL.
- This mixture can be used for targeted and untargeted approaches.
- Ideal for LC-MS studies as internal standards.

Components of the deuterated Steroids Standard Mixture

* See batch-specific CoA for measured concentrations

Components
Aldosterone-d7
11-Deoxycortisol-d5
Androstenedione-c3
Pregnenolone-c2d2
Carticosterone-d4
Allopregnanolone-d5
Etiocholanolone-d5
Hydrocortisone sulfate-d4
Cortisone-d8
Testosteron-d3
Cortisol-d4
5α-Dihydrotestosteron-d3
Progesterone-d9
17-OH Progesterone-d8
Dehydroepiandrosterone-d6 sulfate sodium salt

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 Steroids Standard Mixture is a ready-to-use solution.

Procedure

1. To 50 µL plasma Samples add 6.25 µL of deuterated Steroid Standard Mixture.
2. Add 10.0 µL of antioxidant (butylated hydroxytoulene 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.

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.

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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