PRODUCT INFORMATION

BSA-Docosahexaenoate-d_5 Polyunsaturated Fatty Acid Complex (1 mM)

Item No. 43591

Synonyms: Bovine Serum Albumin-DHA-d_5, Bovine Serum Albumin-Docosahexaenoate-d_5, BSA-Cervonate-d_5, BSA-DHA -d_5

Supplied as: 1 mM Docosahexanoate d_5:0.17 mM BSA (6:1 docosahexanoate d_5:BSA) in 150 mM sodium chloride, pH 7.4

Storage: -20°C (as supplied)

Stability: ≥2 years

Item Origin: Animal/Bovine

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Description

BSA-Docosahexaenoate-d_5 Polyunsaturated Fatty Acid Complex (1 mM) is composed of docosahexaenoic acid-d_5 (DHA-d_5; Item No. 10005057) and fatty acid-free bovine serum albumin (BSA) at an approximately 6:1 molar ratio of docosahexaenoate-d_5:BSA. It is intended for the quantification of DHA-d_5 uptake and incorporation by GC- or LC-MS. BSA-Docosahexaenoate-d_5 Polyunsaturated Fatty Acid Complex (1 mM) can be used for efficient fatty acid delivery to cells in culture for the purpose of monitoring lipid metabolism, inflammatory signaling pathways, fatty acid uptake and efflux, and ferroptotic cell death.[1-5] Cayman's BSA-Docosahexaenoate-d_5 Polyunsaturated Fatty Acid Complex (1 mM) is suitable for use in short-term cell culture applications (acute treatment to 18 hours); however, for long-term applications (25+ hours) the product should be filter-sterilized using a 0.2 µm filter and sterile receptacle, which will not affect its performance. For best results, it is recommended that this product be used in conjunction with Cayman's BSA Control for BSA-Fatty Acid Complexes (1 mM) (Item No. 34932), prepared with fatty acid-free BSA.

References

1. Alsabeeh, N., Chausse, B., Kakimoto, P.A., *et al.* Cell culture models of fatty acid overload: Problems and solutions. Biochim. *Biophys. Acta Mol. Cell Biol. Lipids* **1863(2)**, 143-151 (2018).
2. Katsnelson, G. and Ceddia, R.B. Docosahexaenoic and eicosapentaenoic fatty acids differentially regulate glucose and fatty acid metabolism in L6 rat skeletal muscle cells. *Am. J. Physiol. Cell Physiol.* **319(6)**, C1120-C1129 (2020).
3. Low, Y.L., Pan, Y., Short, J.L., *et al.* Profiling the expression of fatty acid-binding proteins and fatty acid transporters in mouse microglia and assessing their role in docosahexaenoic acid-d5 uptake. *Prostaglandins Leukot. Essent. Fatty Acids* **171:102303**, (2021).
4. Ochiai, Y., Uchida, Y., Tachikawa, M., *et al.* Amyloid beta$_{25-35}$ impairs docosahexaenoic acid efflux by down-regulating fatty acid transport protein 1 (FATP1/SLC27A1) protein expression in human brain capillary endothelial cells. *J. Neurochem.* **150(4)**, 385-401 (2019).
5. von Krusenstiern, A.N., Robson, R.N., Qian, N., *et al.* Identification of essential sites of lipid peroxidation in ferroptosis. *Nat. Chem. Biol.* **19(6)**, 719-730 (2023).

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