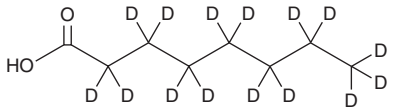
PRODUCT INFORMATION

Octanoic Acid-d_{15}

Item No. 29074

CAS Registry No.: 69974-55-6
Formal Name: octanoic-2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-d_{15} acid
Synonym: Caprylic Acid-d_{15}, FA 8:0-d_{15}
MF: $C_8HD_{15}O_2$
FW: 159.3
Chemical Purity: ≥98% (Octanoic Acid)
Deuterium Incorporation: ≥99% deuterated forms (d_1-d_{15}); ≤1% d_0
Supplied as: A liquid
Storage: -20°C
Stability: ≥2 years



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

Laboratory Procedures

Octanoic acid-d_{15} is intended for use as an internal standard for the quantification of octanoic acid by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated *versus* unlabeled).

Octanoic acid-d_{15} is supplied as a liquid. A stock solution may be made by dissolving the octanoic acid-d_{15} in the solvent of choice, which should be purged with an inert gas. Octanoic acid-d_{15} is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of octanoic acid-d_{15} in these solvents is approximately 30 mg/ml.

Description

Octanoic acid is a medium-chain saturated fatty acid. It has been found in Teleme cheeses made from goat, ovine, or bovine milk.[1] Octanoic acid is active against the bacteria *S. mutans*, *S. gordonii*, *F. nucleatum*, and *P. gingivalis* (IC_{80}s = <125, <125, 1,403, and 2,294 µM, respectively).[2] Levels of octanoic acid are increased in the plasma of patients with medium-chain acyl-CoA dehydrogenase (MCAD) deficiency, an inborn error of fatty acid metabolism characterized by hypoketotic hypoglycemia, medium-chain dicarboxylic aciduria, and intolerance to fasting.[3,4]

References

1. Mallatou, H., Pappa, E., and Massouras, T. Changes in free fatty acids during ripening of Teleme cheese made with ewes', goats', cows' or a mixture of ewes' and goats' milk. *Int. Dairy J.* **13(1-3),** 211-219 (2003).
2. Hyang, C.B., Alimova, Y., Myers, T.M., *et al.* Short- and medium-chain fatty acids exhibit antimicrobial activity for oral microorganisms. *Arch. Oral Biol.* **56(7),** 650-654 (2011).
3. Onkenhout, W., Venizelos, V., van der Poel, P.F.H., *et al.* Identification and quantification of intermediates of unsaturated fatty acid metabolism in plasma of patients with fatty acid oxidation disorders. *Clin. Chem.* **41(10),** 1467-1474 (1995).
4. Rinaldo, P., O'Shea, J.J., Coates, P.M., *et al.* Medium-chain acyl-CoA dehydrogenase deficiency. Diagnosis by stable-isotope dilution measurement of urinary n-hexanoylglycine and 3-phenylpropionylglycine. *N. Engl. J. Med.* **319(20),** 1308-1313 (1988).

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