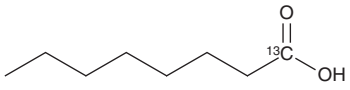
PRODUCT INFORMATION

Octanoic Acid-^{13}C

Item No. 29461

CAS Registry No.:	59669-16-8
Formal Name:	octanoic-1-^{13}C acid
Synonym:	Caprylic Acid-^{13}C
MF:	$C_7[^{13}C]H_{16}O_2$
FW:	145.2
Purity:	≥98%
Supplied as:	A solution in ethanol
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-^{13}C is supplied as a solution in ethanol. To change the solvent, simply evaporate the ethanol under a gentle stream of nitrogen and immediately add the solvent of choice. Solvents such as DMSO and dimethyl formamide purged with an inert gas can be used. The solubility of octanoic acid-^{13}C in these solvents is approximately 30 mg/ml.

Description

Octanoic acid-^{13}C is intended for use as an internal standard for the quantification of octanoic acid by GC- or LC-MS. 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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