

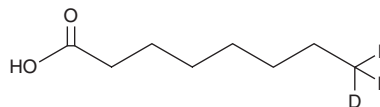
# PRODUCT INFORMATION



## Octanoic Acid-d<sub>3</sub>

Item No. 28869

**CAS Registry No.:** 156779-05-4  
**Formal Name:** octanoic-8,8,8-d<sub>3</sub> acid  
**Synonyms:** Caprylic Acid-d<sub>3</sub>, FA 8:0-d<sub>3</sub>  
**MF:** C<sub>8</sub>H<sub>13</sub>D<sub>3</sub>O<sub>2</sub>  
**FW:** 147.2  
**Chemical Purity:** ≥98% (Octanoic Acid)  
**Deuterium Incorporation:** ≥99% deuterated forms (d<sub>1</sub>-d<sub>3</sub>); ≤1% d<sub>0</sub>  
**Supplied as:** A liquid  
**Storage:** -20°C  
**Stability:** ≥4 years



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

### Laboratory Procedures

Octanoic acid-d<sub>3</sub> 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<sub>3</sub> is supplied as a liquid. A stock solution may be made by dissolving the octanoic acid-d<sub>3</sub> in the solvent of choice, which should be purged with an inert gas. Octanoic acid-d<sub>3</sub> is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of octanoic acid-d<sub>3</sub> 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.<sup>1</sup> Octanoic acid is active against the bacteria *S. mutans*, *S. gordonii*, *F. nucleatum*, and *P. gingivalis* (IC<sub>50</sub>s = <125, <125, 1,403, and 2,294 μM, respectively).<sup>2</sup> 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.<sup>3,4</sup>

### 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).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

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