

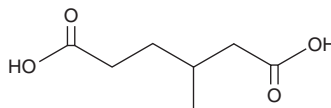
# PRODUCT INFORMATION



## 3-Methyladipic Acid

Item No. 36452

CAS Registry No.: 3058-01-3  
Formal Name: 3-methyl-hexanedioic acid  
Synonyms: FA 7:1;O2, NSC 22069  
MF:  $C_7H_{12}O_4$   
FW: 160.2  
Purity:  $\geq 95\%$   
Supplied as: A solid  
Storage:  $-20^{\circ}\text{C}$   
Stability:  $\geq 4$  years



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

### Laboratory Procedures

3-Methyladipic acid is supplied as a solid. A stock solution may be made by dissolving the 3-methyladipic acid in the solvent of choice, which should be purged with an inert gas. 3-Methyladipic acid is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of 3-methyladipic acid in these solvents is approximately 5, 12, and 14 mg/ml, respectively.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of 3-methyladipic acid can be prepared by directly dissolving the solid in aqueous buffers. The solubility of 3-methyladipic acid in PBS (pH 7.2) is approximately 5 mg/ml. We do not recommend storing the aqueous solution for more than one day.

### Description

3-Methyladipic acid is a catabolite of the branched-chain fatty acid phytanic acid (Item No. 90360), which is ingested via the diet.<sup>1</sup> It is formed from phytanic acid via  $\omega$ - and then  $\beta$ -oxidation in patients with adult Refsum disease, a disorder characterized by high levels of phytanic acid in the blood and tissues due to a deficiency in phytanoyl-CoA hydroxylase, the enzyme that converts phytanoyl-CoA (Item No. 10011499) to 2-hydroxyphytanoyl-CoA during peroxisomal  $\beta$ -oxidation.<sup>1-3</sup> Urinary levels of 3-methyladipic acid have been used as a biomarker for the  $\omega$ -oxidation of phytanic acid in patients with adult Refsum disease.<sup>1</sup>

### References

1. Wierzbicki, A.S., Mayne, P.D., Lloyd, M.D., *et al.* Metabolism of phytanic acid and 3-methyl-adipic acid excretion in patients with adult Refsum disease. *J. Lipid Res.* **44**(8), 1481-1488 (2003).
2. Verhoeven, N.M., Wanders, R.J., Poll-The, B.T., *et al.* The metabolism of phytanic acid and pristanic acid in man: A review. *J. Inherit. Metab. Dis.* **21**(7), 697-728 (1998).
3. Van Veldhoven, P.P. Biochemistry and genetics of inherited disorders of peroxisomal fatty acid metabolism. *J. Lipid Res.* **51**(10), 2863-2895 (2010).

#### 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.

#### WARRANTY AND LIMITATION OF REMEDY

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 02/20/2024

#### CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD  
ANN ARBOR, MI 48108 · USA

PHONE: [800] 364-9897  
[734] 971-3335

FAX: [734] 971-3640

CUSTSERV@CAYMANCHEM.COM  
WWW.CAYMANCHEM.COM