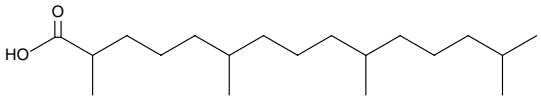
Product Information

Pristanic Acid

Item No. 17264

CAS Registry No.: 1189-37-3
Formal Name: 2,6,10,14-tetramethyl-pentadecanoic acid
MF: $C_{19}H_{38}O_2$
FW: 298.5
Purity: ≥95%
Stability: ≥1 year at -20°C
Supplied as: A solution in ethanol



Laboratory Procedures

For long term storage, we suggest that pristanic acid be stored as supplied at -20°C. It should be stable for at least one year.

Pristanic acid is supplied as a solution in ethanol. To change the solvent, simply evaporate the pristanic acid under a gentle stream of nitrogen and immediately add the solvent of choice. Solvents such as ethanol, DMSO, and dimethyl formamide purged with an inert gas can be used. The solubility of pristanic acid in these solvents is approximately 20, 10, and 30 mg/ml, respectively.

Pristanic acid is sparingly soluble in aqueous solutions. To enhance aqueous solubility, dilute the organic solvent solution into aqueous buffers or isotonic saline. If performing biological experiments, ensure the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. We do not recommend storing the aqueous solution for more than one day.

Pristanic acid is a natural terpenoid acid present at micromolar concentrations in the plasma of healthy individuals. It is obtained from dietary sources or by the α-oxidation of phytanic acid (Item No. 90360), which occurs predominantly in peroxisomes.[1,2] Pristanic acid is an agonist of PPARα (EC_{50} = 40 µM).[3] It is also a substrate of the mammalian peroxisomal ATP-binding cassette (ABC) transporter ABCD3, which facilitates its delivery into peroxisomes for β-oxidation.[4]

References

1. 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**, 697-728 (1998).
2. Verhoeven, N.M. and Jakobs, C. Human metabolism of phytanic acid and pristanic acid. *Prog. Lipid Res.* **40**, 453-466 (2001).
3. Zomer, A.W.M., van der Burg, B., Jansen, G.A., *et al.* Pristanic acid and phytanic acid: Naturally occurring ligands for the nuclear receptor peroxisome proliferator-activated receptor α *J. Lipid Res.* **41(11)**, 1801-1807 (2000).
4. Kemp, S., Theodoulou, F.L., and Wanders, R.J.A. Mammalian peroxisomal ABC transporters: From endogenous substrates to pathology and clinical significance. *Br. J. Pharmacol.* **164(7)**, 1753-1766 (2011).

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