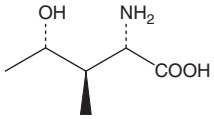
PRODUCT INFORMATION

4-Hydroxyisoleucine

Item No. 11812

CAS Registry No.: 55399-93-4
Formal Name: 2-amino-2,3,5-trideoxy-3-methyl-L-ribonic acid
Synonyms: (4S)-4-Hydroxy-L-isoleucine, 4-OH-Ile
MF: $C_6H_{13}NO_3$
FW: 147.2
Purity: ≥95%
Supplied as: A solid
Storage: -20°C
Stability: ≥4 years
Item Origin: Synthetic



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

Laboratory Procedures

4-Hydroxyisoleucine is supplied as a solid. Aqueous solutions of 4-hydroxyisoleucine can be prepared by directly dissolving the solid in aqueous buffers. The solubility of 4-hydroxyisoleucine in PBS, pH 7.2, is approximately 5 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

4-Hydroxyisoleucine is an amino acid that has been found in fenugreek (*T. foenum graecum*) seeds and has antidiabetic activity.[1-3] It increases glucose-stimulated insulin release from isolated rat islets and isolated perfused rat pancreas when used at a concentration of 200 µM.[1] *In vivo*, 4-hydroxyisoleucine increases PI3K activity in muscle and liver in rats when administered at a dose of 18 mg/kg and in muscle in a rat model of type 2 diabetes induced by nicotinamide (Item No. 11127) and streptozotocin (STZ; Item No. 13104) when administered at 25 mg/kg.[2] 4-Hydroxyisoleucine (50 mg/kg per day for four weeks) decreases plasma glucose, triglyceride, LDL, HDL, and cholesterol levels in an STZ-induced rat model of type 1 diabetes.[3]

References

1. Broca, C., Manteghetti, M., Gross, R., *et al.* 4-Hydroxyisoleucine: Effects of synthetic and natural analogues on insulin secretion. *Eur. J. Pharmacol.* **390(3)**, 339-345 (2000).
2. Broca, C., Breil, V., Cruciani-Guglielmacci, C., *et al.* Insulinotropic agent ID-1101 (4-hydroxyisoleucine) activates insulin signaling in rat. *Am. J. Physiol. Endocrinol. Metab.* **287(3)**, E463-E471 (2004).
3. Haeri, M.R., Limaki, H.K., White, C.J., *et al.* Non-insulin dependent anti-diabetic activity of (2S, 3R, 4S) 4-hydroxyisoleucine of fenugreek (*Trigonella foenum graecum*) in streptozotocin-induced type I diabetic rats. *Phytomedicine* **19(7)**, 571-574 (2012).

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