

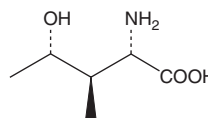
# PRODUCT INFORMATION



## 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<sub>6</sub>H<sub>13</sub>NO<sub>3</sub>  
**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.<sup>1-3</sup> It increases glucose-stimulated insulin release from isolated rat islets and isolated perfused rat pancreas when used at a concentration of 200 μM.<sup>1</sup> *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.<sup>2</sup> 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.<sup>3</sup>

### 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).

#### 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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