

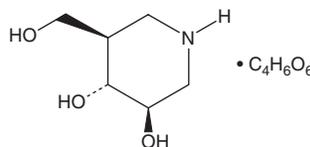
# PRODUCT INFORMATION



## Isfagomine (D-tartrate)

Item No. 16137

**CAS Registry No.:** 957230-65-8  
**Formal Name:** 5R-(hydroxymethyl)-3R,4R-piperidinediol, mono 2S,3S-dihydroxybutanedioate  
**MF:** C<sub>6</sub>H<sub>13</sub>NO<sub>3</sub> • C<sub>4</sub>H<sub>6</sub>O<sub>6</sub>  
**FW:** 297.3  
**Purity:** ≥95%  
**Supplied as:** A solution in ethanol:water (1:1)  
**Storage:** -20°C  
**Stability:** ≥2 years



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

### Laboratory Procedures

Isfagomine (D-tartrate) is supplied as a solution in ethanol:water (1:1). To change the solvent, simply evaporate the ethanol:water (1:1) under a gentle stream of nitrogen and immediately add the solvent of choice. The solvent DMSO purged with an inert gas can be used at a concentration of 2 mg/ml.

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. If an organic solvent-free solution of isfagomine (D-tartrate) is needed, it can be prepared by evaporating the ethanol:water and directly dissolving the neat oil in aqueous buffers. The solubility of isfagomine (D-tartrate) in PBS, pH 7.2, is approximately 5 mg/ml. We do not recommend storing the aqueous solution for more than one day.

### Description

Isfagomine (D-tartrate) is a competitive inhibitor of human lysosomal  $\beta$ -glucosidase ( $K_i = 0.016-0.025 \mu\text{M}$ ;  $\text{IC}_{50} = 0.06 \mu\text{M}$ ).<sup>1</sup> By interacting with the catalytic pocket of  $\beta$ -glucosidase it acts as a chemical chaperone that increases the amount of  $\beta$ -glucosidase by stabilizing and/or promoting the folding of the enzyme.<sup>2</sup> Isfagomine (D-tartrate) has been shown to increase lysosomal  $\beta$ -glucosidase activity by 2- to 3-fold in mutant N370S Gaucher fibroblasts.<sup>1</sup> This compound has been studied in the context of Gaucher disease, a lysosomal storage disorder resulting from substantial deficiency of  $\beta$ -glucosidase and recently identified as a parkinsonism risk factor.<sup>2</sup>

### References

1. Kuriyama, C., Kamiyama, O., Ikeda, K., *et al.* *In vitro* inhibition of glycogen-degrading enzymes and glycosidases by six-membered sugar mimics and their evaluation in cell cultures. *Bioorg. Med. Chem.* **16(15)**, 7330-7336 (2008).
2. Witte, M.D., Kallemeijn, W.W., Aten, J., *et al.* Ultrasensitive in situ visualization of active glucocerebrosidase molecules. *Nat. Chem. Biol.* **6(12)**, 907-913 (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.

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#### 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