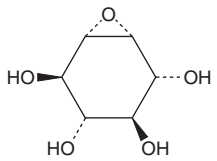
PRODUCT INFORMATION

Conduritol B epoxide

Item No. 15216

CAS Registry No.: 6090-95-5
Formal Name: 1,2-anhydro-*myo*-inositol
Synonym: CBE
MF: $C_6H_{10}O_5$
FW: 162.1
Purity: ≥95%
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥4 years



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

Laboratory Procedures

Conduritol B epoxide (CBE) is supplied as a crystalline solid. A stock solution may be made by dissolving the CBE in the solvent of choice, which should be purged with an inert gas. CBE is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of CBE in these solvents is approximately 25 and 10 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 CBE can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of CBE in PBS (pH 7.2) is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

CBE is an irreversible inhibitor of glucocerebrosidase, also known as acid β-glucosidase, glucosylceramidase, GBA, or GBA1 (IC_{50} = 9 µM).[1,2] Inhibition of this lysosomal glucosidase results in the accumulation of glucocerebroside without affecting cell viability, lysosomal enzyme release, or the activity of intracellular enzymes.[3] It also does not inhibit non-lysosomal glucosylceramidase or cytosolic β-glucosidase.[4] As glucocerebrosidase deficiency results in Gaucher disease, a common lysosomal storage disorder that can involve defects in blood, bone, neurological, and liver development, CBE is used in *in vitro* and animal models of the disease.[2,4]

References

1. Ogawa, S., Uetsuki, S., Tezuka, Y., *et al.* Synthesis and evaluation of glucocerebrosidase inhibitory activity of anhydro deoxyinositols from (+)-*epi*- and (-)-*vibo*-quercitols. *Bioorg. Med. Chem. Lett.* **9(11)**, 1493-1498 (1999).
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).
3. Newburg, D.S., Yatziv, S., McCluer, R.H., *et al.* β-Glucosidase inhibition in murine peritoneal macrophages by conduritol-B-epoxide: An *in vitro* model of the Gaucher cell. *Biochim. Biophys. Acta.* **877(1)**, 121-126 (1996).
4. Ishibashi, Y., Kohyama-Koganeya, A., and Hirabayashi, Y. New insights on glucosylated lipids: metabolism and functions. *Biochim Biophys. Acta.* **1831(9)**, 1475-1485 (2013).

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