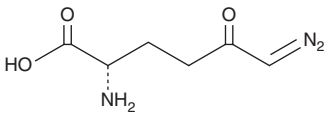
PRODUCT INFORMATION

6-diazo-5-oxo-L-nor-Leucine

Item No. 17580

CAS Registry No.: 157-03-9
Formal Name: 6-diazo-5-oxo-L-norleucine
Synonyms: DON, NSC 7365
MF: $C_6H_9N_3O_3$
FW: 171.2
Purity: ≥95%
UV/Vis.: λ_{max}: 274 nm
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

6-diazo-5-oxo-L-nor-Leucine (DON) is supplied as a crystalline solid. A stock solution may be made by dissolving the DON in the solvent of choice, which should be purged with an inert gas. DON is soluble in the organic solvent DMSO at a concentration of approximately 1 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. Organic solvent-free aqueous solutions of DON can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of DON in PBS, pH 7.2, is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

DON is a glutamine analog that inhibits glutaminases (K_i = 6 µM) and other glutamine-utilizing enzymes, including cytidine triphosphate synthase (CTPS), which uses glutamine in the synthesis of CTP.[1-3] DON is commonly used in cells or tissues but its use in whole animals is limited by its teratogenicity.[3-5]

References

1. Willis, R.C. and Seegmiller, J.E. The inhibition by 6-diazo-5-oxo-l-norleucine of glutamine catabolism of the cultured human lymphoblast. *J. Cell Physiol.* **93**, 375-382 (1977).
2. Thangavelu, K., Chong, Q.Y., Low, B.C., *et al.* Structural basis for the active site inhibition mechanism of human kidney-type glutaminase (KGA). *Sci. Rep.* **4**, 1-7 (2014).
3. Thomas, A.G., Rojas, C., Tanega, C., *et al.* Kinetic characterization of ebselen, chelerythrine and apomorphine as glutaminase inhibitors. *Biochem. Biophys. Res. Commun.* **438(2)**, 243-248 (2013).
4. Botman, D., Tigchelaar, W., and Van Noorden, C.J.F. Determination of phosphate-activated glutaminase activity and its kinetics in mouse tissues using metabolic mapping (quantitative enzyme histochemistry). *J. Histochem. Cytochem.* **62(11)**, 813-826 (2014).
5. Greene, R.M. and Kochhar, D.M. Limb development in mouse embryos: Protection against teratogenic effects of 6-diazo-5-ox-L-norleucine (DON) *in vivo* and *in vitro*. *J. Embryol. Exp. Morphol.* **33(2)**, 355-370 (1975).

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