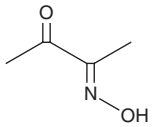
PRODUCT INFORMATION

2,3-Butanedione-2-monoxime

Item No. 20828

CAS Registry No.: 57-71-6
Formal Name: 2,3-butanedione, 2-oxime
Synonyms: BDM, Diacetyl monoxime, NSC 660, NSC 116103
MF: $C_4H_7NO_2$
FW: 101.1
Purity: ≥95%
UV/Vis.: λ_{max}: 229 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

2,3-Butanedione-2-monoxime (BDM) is supplied as a crystalline solid. A stock solution may be made by dissolving the BDM in the solvent of choice. BDM is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide, which should be purged with an inert gas. The solubility of BDM in these solvents is approximately 30 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 BDM can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of BDM in PBS, pH 7.2, is approximately 2 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

BDM is a non-selective, reversible myosin ATPase inhibitor with phosphatase-like properties.[1,2] It demonstrates direct and indirect actions on cardiac and vascular smooth muscle, inhibiting L-type Ca^{2+} channels.[3,4] BDM has been shown to be involved in a number of biological activities, including muscle contraction and synaptic transmission.[1]

References

1. Sellin, L.C. and McArdle, J.J. Multiple effects of 2,3-butanedione monoxime. *Pharmacol. Toxicol.* **74(6)**, 305-313 (1994).
2. Ostap, E.M. 2,3-Butanedione monoxime (BDM) as a myosin inhibitor. *J. Muscle Res. Cell Motil.* **23(4)**, 305-308 (2002).
3. Eisfeld, J., Mikala, G., Varadi, G., *et al*. Inhibition of cloned human L-type cardiac calcium channels by 2,3-butanedione monoxime does not require PKA-dependent phosphorylation sites. *Biochem. Biophys. Res. Commun.* **230(3)**, 489-492 (1997).
4. Adhikari, B.B. and Wang, K. Interplay of troponin- and myosin-based pathways of calcium activation in skeletal and cardiac muscle: The use of W7 as an inhibitor of thin filament activation. *Biophys. J.* **86(1)**, 359-370 (2004).

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