

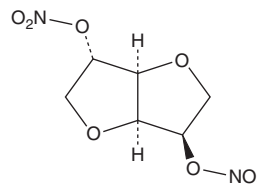
PRODUCT INFORMATION



Isosorbide Dinitrate

Item No. 44834

CAS Registry No.: 87-33-2
Formal Name: 1,4:3,6-dianhydro-D-glucitol, 2,5-dinitrate
Synonyms: ISDN, NSC 80038
MF: $C_6H_8N_2O_8$
FW: 236.1
Purity: $\geq 98\%$
Supplied as: A solid (stabilized with 60% lactose)
Storage: -20°C
Stability: ≥ 4 years



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

Laboratory Procedures

Isosorbide dinitrate is supplied as a solid (stabilized with 60% lactose). A stock solution may be made by dissolving the isosorbide dinitrate in the solvent of choice, which should be purged with an inert gas. Isosorbide dinitrate is slightly soluble (0.1-1 mg/ml) in acetonitrile.

Isosorbide dinitrate is slightly soluble in aqueous solutions. To enhance aqueous solubility, dilute the organic solvent solution into aqueous buffers or isotonic saline. If performing biological experiments, ensure the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. We do not recommend storing the aqueous solution for more than one day.

Description

Isosorbide dinitrate is an organic nitrate ester and nitric oxide (NO) donor in the same class as nitroglycerin.^{1,2} It induces vasodilation in norepinephrine-precontracted rabbit femoral vein and arterial strips with IC_{50} values of 0.56 and 1.82 μM , respectively.² Isosorbide dinitrate (0.1 and 0.2 mg/kg) increases oxygenation of tumor tissue *in vivo* in a transplantable mouse liver tumor model.³ It also enhances inhibition of platelet aggregation induced by prostaglandin I_2 (PGI_2 ; Item No. 18220) *in vitro*.⁴ Formulations containing isosorbide dinitrate have been used in the prevention of angina pectoris due to coronary artery disease. This product is stabilized with 60% lactose.

References

1. Ahlner, J., Andersson, R.G., Torfgard, K., *et al.* Organic nitrate esters: Clinical use and mechanisms of actions. *Pharmacol. Rev.* **43**(3), 351-423 (1991).
2. Toyoda, J., Hisayama, T., and Takayanagi, I. Nitro compounds (isosorbide dinitrate, 5-isosorbide mononitrate and glyceryl trinitrate) on the femoral vein and femoral artery. *Gen. Pharmacol.* **17**(1), 89-91 (1986).
3. Jordan, B.F., Misson, P., Demeure, R., *et al.* Changes in tumor oxygenation/perfusion induced by the no donor, isosorbide dinitrate, in comparison with carbogen: Monitoring by EPR and MRI. *Int. J. Radiat. Oncol. Biol. Phys.* **48**(2), 565-570 (2000).
4. De Caterina, R., Giannessi, D., Bernini, W., *et al.* Organic nitrates: Direct antiplatelet effects and synergism with prostacyclin. Antiplatelet effects of organic nitrates. *Thromb. Haemost.* **59**(2), 207-211 (1988).

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