

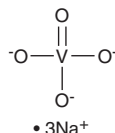
PRODUCT INFORMATION



Sodium Orthovanadate

Item No. 34328

CAS Registry No.: 13721-39-6
Formal Name: sodium vanadium oxide
Synonym: NSC 79534
MF: $\text{Na}_3\text{O}_4\text{V}$
FW: 183.9
Supplied as: A 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

Sodium orthovanadate is supplied as a solid. A stock solution may be made by dissolving the sodium orthovanadate in the solvent of choice, which should be purged with an inert gas.

Sodium orthovanadate 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

Sodium orthovanadate is a protein tyrosine phosphatase inhibitor.¹⁻⁴ It inhibits autocrine growth of A549 lung, A498 kidney, and DU145 prostate cancer cells when used at concentrations ranging from 1 to 20 μM .¹ Sodium orthovanadate (20 mg/kg) protects mice from radiation-induced hematopoietic and gastrointestinal syndromes.² It reduces postprandial glucose levels and increases glucose tolerance in a rat model of diabetes induced by streptozotocin (Item No. 13104) when administered *ad libitum* in drinking water at a concentration of 0.5 mg/ml.³ Sodium orthovanadate also decreases total and cortical infarct size in a rat model of ischemia-reperfusion injury induced by transient middle cerebral artery occlusion (MCAO).⁴

References

1. Klein, A., Holko, P., Ligeza, J., *et al.* Sodium orthovanadate affects growth of some human epithelial cancer cells (A549, HTB44, DU145). *Folia Biol. (Kraków)* **56(3-4)**, 115-121 (2008).
2. Wang, B., Tanaka, K., Morita, A., *et al.* Sodium orthovanadate (vanadate), a potent mitigator of radiation-induced damage to the hematopoietic system in mice. *J. Radiat. Res.* **54(4)**, 620-629 (2013).
3. Brichard, S.M., Okitolonda, W., and Henquin, J.C. Long term improvement of glucose homeostasis by vanadate treatment in diabetic rats. *Endocrinology* **123(4)**, 2048-2053 (1988).
4. Hasegawa, Y., Hamada, J.-I., Morioka, M., *et al.* Neuroprotective effect of postischemic administration of sodium orthovanadate in rats with transient middle cerebral artery occlusion. *J. Cereb. Blood Flow Metab.* **23(9)**, 1040-1051 (2003).

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