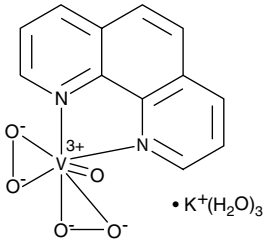
Product Information

bpV(phen) (potassium hydrate)

Item No. 13331

CAS Registry No.: 171202-16-7
Formal Name: (PB-7-23-111'1'3)-oxodiperoxy(1,10-phenanthroline-κ/N^1,κ/N^{10})-vanadate(1-), potassium trihydrate
Synonyms: Bisperoxovanadium(phen), Potassium Bisperoxo(1,10-phenanthroline) oxovanadate (V)
MF: $C_{12}H_8N_2O_5V \bullet K^+(H_2O)_3$
FW: 404.3
Purity: ≥99%
Stability: ≥2 years at -20°C
Supplied as: A yellow to orange crystalline solid



Laboratory Procedures

For long term storage, we suggest that bpV(phen) (potassium hydrate) be stored as supplied at -20°C. It should be stable for at least two years.

bpV(phen) (potassium hydrate) is supplied as a crystalline solid. A stock solution may be made by dissolving the bpV(phen) (potassium hydrate) in the solvent of choice. bpV(phen) (potassium hydrate) is soluble in water and in the organic solvent DMSO. We do not recommend storing the aqueous solution for more than one day.

bpV(phen) is a bisperoxovanadium (bpV) compound which inhibits several different protein tyrosine phosphatases (PTPs), with selectivity for PTEN (IC_{50} = 38 nM).[1,2] It also inhibits the vascular endothelial PTP, PTP-β (IC_{50} = 343 nM), and PTP-1β (IC_{50} = 920 nM).[2,3] At 0.1 mM, bpV(phen) inhibits SH2 domain-containing inositol 5'-phosphatase-2.[4] Presumably by inhibiting insulin receptor kinase-associated PTPs, bpV(phen) activates the insulin receptor tyrosine kinase and promotes downstream signaling, including activation of PI3-kinase.[5-7]

References

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2. Schmid, A.C., Byrne, R.D., Vilar, R., *et al.* Bisperoxovanadium compounds are potent PTEN inhibitors. *FEBS Lett.* **566(1-3)**, 35-38 (2004).
3. Kakazu, A., Sharma, G., and Bazan, H.E.P. Association of protein tyrosine phosphatases (PTPs)-1B with c-Met receptor and modulation of corneal epithelial wound healing. *Invest. Ophthalmol. Vis. Sci.* **49(7)**, 2927-2935 (2008).
4. Batty, I.H., Van der Kaay, J., Gray, A., *et al.* The control of phosphatidylinositol 3,4-bisphosphate concentrations by activation of the Src homology 2 domain containing inositol polyphosphate 5-phosphatase 2, SHIP2. *Biochem. J.* **407**, 255-266 (2007).
5. Posner, B.I., Faure, R., Burgess, J.W., *et al.* Peroxovanadium compounds. A new class of potent phosphotyrosine phosphatase inhibitors which are insulin mimetics. *J. Biol. Chem.* **269(6)**, 4596-4604 (1994).
6. Bevan, A.P., Burgess, J.W., Drake, P.G., *et al.* Selective activation of the rat hepatic endosomal insulin receptor kinase. Role for the endosome in insulin signaling. *J. Biol. Chem.* **270(18)**, 10784-10791 (1995).
7. Band, C.J., Posner, B.I., Dumas, V., *et al.* Early signaling events triggered by peroxovanadium [bpV(phen)] are insulin receptor kinase (IRK)-dependent: Specificity of inhibition of IRK-associated protein tyrosine phosphatase(s) by bpV(phen). *Mol. Endocrinol.* **11(13)**, 1899-1910 (1997).

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