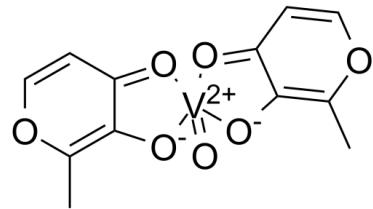


## Data Sheet

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<b>Product Name:</b>	Bis(maltolato)oxovanadium(IV)
<b>Cat. No.:</b>	CS-0067486
<b>CAS No.:</b>	38213-69-3
<b>Molecular Formula:</b>	C <sub>12</sub> H <sub>10</sub> O <sub>7</sub> V
<b>Molecular Weight:</b>	317.15
<b>Target:</b>	Phosphatase
<b>Pathway:</b>	Metabolic Enzyme/Protease
<b>Solubility:</b>	10 mM in DMSO



### BIOLOGICAL ACTIVITY:

Bis(maltolato)oxovanadium(IV) (BMOV) is a potent, reversible, competitive and orally active pan-PTP (**protein tyrosine phosphatases**) inhibitor. Bis(maltolato)oxovanadium(IV) inhibits **HCPTPA**, **PTP1B**, **HPTP $\beta$**  and **SHP2** with **IC<sub>50</sub>s** of 126 nM, 109 nM, 26 nM and 201 nM, respectively. Bis(maltolato)oxovanadium(IV) is a potent insulin sensitizer<sup>[1][2]</sup>. IC50 & Target: IC50: 126 nM (HCPTPA), 109 nM (PTP1B), 26 nM (HPTP $\beta$ ) and 201 nM (SHP2)<sup>[2]</sup> **In Vitro:** Bis(maltolato)oxovanadium(IV) treatment enhances the phosphorylation of the insulin receptor and of the insulin signalling key intermediate Akt. Bis(maltolato)oxovanadium(IV) (BMOV; 50  $\mu$  M) treatment also results in an increased glucose uptake in C2C12 cells<sup>[1]</sup>. **In Vivo:** Bis(maltolato)oxovanadium(IV) (BMOV; 0.75-3.0 mmol; intraperitoneal injection; twice weekly; for 6 weeks; C57BL/6J mice) treatment ameliorates the metabolic phenotype. Liver, skeletal muscle, and adipose tissue revealed a significantly reduced PTP activity in all analysed tissues compared to HFD mice<sup>[1]</sup>.

### References:

[1]. Janine Krüger, et al. Inhibition of Src homology 2 domain-containing phosphatase 1 increases insulin sensitivity in high-fat diet-induced insulin-resistant mice. *FEBS Open Bio.* 2016 Jan 4;6(3):179-89.

[2]. Kevin G Peters, et al. Mechanism of insulin sensitization by BMOV (bis maltolato oxo vanadium); unliganded vanadium (VO<sub>4</sub>) as the active component. *J Inorg Biochem.* 2003 Aug 1;96(2-3):321-30.

### CAIndexNames:

Vanadium, bis[3-(hydroxy- $\kappa$ O)-2-methyl-4H-pyran-4-onato- $\kappa$ O<sub>4</sub>]oxo-, (SP-5-31)-

### SMILES:

O=[V+2]([O-]C1=C2C)([O]=C1C=CO2)([O]=C3C=CO4)[O-]C3=C4C

**Caution: Product has not been fully validated for medical applications. For research use only.**

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