Bis(maltolato)oxovanadium(IV) is a potent, reversible, competitive and orally active pan-PTP (protein tyrosine phosphatases) inhibitor. Bis(maltolato)oxovanadium(IV) inhibits HCPTPA, PTP1B, HPTPβ and SHP2 with IC₅₀ values of 126 nM, 109 nM, 26 nM and 201 nM, respectively. Bis(maltolato)oxovanadium(IV) is a potent insulin sensitizer.[1,2]

**IC₅₀ & Target**

IC₅₀: 126 nM (HCPTPA), 109 nM (PTP1B), 26 nM (HPTPβ) and 201 nM (SHP2)[2]

**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 μM) treatment also results in an increased glucose uptake in C2C12 cells.[1]

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

**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[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

**Animal Model:** C57BL/6J mice (4-6 weeks) fed with high-fat diet (HFD)[1]

**Dosage:** 0.75-3.0 mmol

**Administration:** Intraperitoneal injection; twice weekly; for 6 weeks

**Result:** Ameliorated the metabolic phenotype, as evidenced by reduced body weight, improved insulin sensitivity and glucose tolerance.

**REFERENCES**