

# PRODUCT INFORMATION



## POM 1

Item No. 21160

CAS Registry No.: 314075-43-9

Formal Name: tungstate ( $W_{12}(OH)_2O_{38}^{6-}$ ), hexasodium salt, monohydrate

Synonyms: Sodium Metatungstate, Sodium Polyoxotungstate

MF:  $H_2O_{40}W_{12} \cdot H_2O \cdot 6Na$

FW: 3,004.0

Supplied as: A crystalline solid

Storage: Room temperature

Stability:  $\geq 4$  years



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

### Laboratory Procedures

POM 1 is supplied as a crystalline solid. A stock solution may be made by dissolving the POM 1 in the solvent of choice, which should be purged with an inert gas. POM 1 is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of POM 1 in these solvents is approximately 0.16 and 0.12 mg/ml, respectively.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of POM 1 can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of POM 1 in PBS, pH 7.2, is approximately 3 mg/ml. We do not recommend storing the aqueous solution for more than one day.

### Description

POM 1 is a polyoxometalate that inhibits ecto-nucleoside triphosphate diphosphohydrolase (NTPDase) 1 and 3 with  $K_i$  values of 2.58 and 3.26  $\mu M$ , respectively.<sup>1</sup> It demonstrates 10-fold lower inhibitory activity for NTPDase 2 ( $K_i = 28.8 \mu M$ ) and does not inhibit P2Y<sub>12</sub> receptors ( $K_i > 10 \mu M$ ).<sup>1</sup> Inhibition of ecto-NTPDases that are capable of hydrolyzing nucleoside tri- and diphosphates (*i.e.*, ATP, ADP, UTP, or UDP) can result in a potentiation of purinergic signaling due to an increase in the extracellular nucleotide concentrations. This subtype-selective NTPase inhibitor has been used to investigate the mechanisms of purinergic signaling.<sup>2</sup>

### References

- Müller, C.E., Iqbal, J., Baqi, Y., *et al.* Polyoxometalates—a new class of potent ecto-nucleoside triphosphate diphosphohydrolase (NTPDase) inhibitors. *Bioorg. Med. Chem. Lett.* **16(23)**, 5943-5947 (2006).
- Pinheiro, A.R., Paramos-de-Carvalho, D., Certal, M. *et al.* Bradykinin-induced  $Ca^{2+}$  signaling in human subcutaneous fibroblasts involves ATP release via hemichannels leading to P2Y<sub>12</sub> receptors activation. *Cell Commun. Signal.* **11**, 70 (2013).

#### 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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