

Store at  
-20C  
#72997**Ivermectin**

100 mg



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**Background**

Ivermectin is a positive allosteric modulator of the ATP-activated ion channel, P2X purinoceptor 4 (P2X4), as well as the  $\alpha 7$  neuronal nicotinic acetylcholine receptor ( $\alpha 7$ -nAChR) (1,2). The  $\alpha 7$ -nAChR is required for the cytokine suppressing mechanism of the inflammatory reflex and it stimulates activation of calcium ion transport. Impairment of the  $\alpha 7$ -nAChR can lead to overproduction of cytokines and a heightened inflammatory response (3). Ivermectin is a known anthelmintic agent, activating the glutamate-gated chloride channels in the nerves and muscles of parasites. The disruption of the parasite's ingestive activity eventually leads to starvation (4). Ivermectin has been shown to inhibit SARS-CoV-2 replication *in vitro* with an IC<sub>50</sub> value of ~2  $\mu$ M (5).

**Molecular Formula**

C<sub>48</sub>H<sub>74</sub>O<sub>14</sub> (B1a form)

**Molecular Weight**

875.1 g/mol

**Purity**

>98%, contains up to 10% B1b form.

**CAS**

70288-86-7

**Solubility**

Soluble in DMSO at 70 mg/ml or ethanol at 25 mg/ml.

**Storage**

Store lyophilized at -20°C, desiccated. In lyophilized form, the chemical is stable for 24 months. Once in solution, store at -20°C and use within 3 months to prevent loss of potency. *Aliquot to avoid multiple freeze/thaw cycles.*

**Directions for Use**

Ivermectin is supplied as a lyophilized powder. For a 10 mM stock, reconstitute 10 mg of powder in 1.14 ml of DMSO. Working concentrations and length of treatment can vary depending on the desired effect.

**Background References**

1. Krause, R.M. et al. (1998) *Mol Pharmacol* 53, 283-94.
2. Khakh, B.S. et al. (1999) *J Neurosci* 19, 7289-99.
3. Zdanowski, R. et al. (2015) *Cent Eur J Immunol* 40, 373-9.
4. Priel, A. and Silberberg, S.D. (2004) *J Gen Physiol* 123, 281-93.
5. Caly, L. et al. (2020) *Antiviral Res* 178, 104787.

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