

Store at
-20°C

Ivermectin

#72997

100 mg

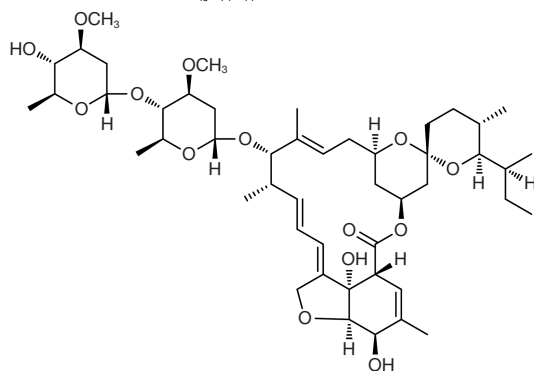
Cell Signaling
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New 05/20

For Research Use Only. Not For Use In Diagnostic Procedures.

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_{50} value of $\sim 2 \mu M$ (5).

Molecular Formula: $C_{48}H_{74}O_{14}$ (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 $-20^{\circ}C$, desiccated. In lyophilized form, the chemical is stable for 24 months. Once in solution, store at $-20^{\circ}C$ 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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Applications: W—Western IP—Immunoprecipitation IHC—Immunohistochemistry ChIP—Chromatin Immunoprecipitation IF—Immunofluorescence F—Flow cytometry E-P—ELISA-Peptide **Species Cross-Reactivity:** H—human M—mouse R—rat Hm—hamster Mk—monkey Mi—mink C—chicken Dm—D. melanogaster X—Xenopus Z—zebrafish B—bovine Dg—dog Pg—pig Sc—S. cerevisiae Ce—C. elegans Hr—Horse All—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.