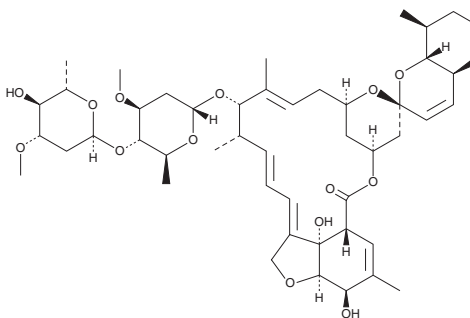


# PRODUCT INFORMATION



## Avermectin B<sub>1a</sub> Item No. 22000

**CAS Registry No.:** 65195-55-3  
**Formal Name:** 5-O-demethyl-avermectin A<sub>1a</sub>  
**Synonyms:** Abamectin B<sub>1a</sub>, Antibiotic C 076B<sub>1a</sub>,  
L-676,863  
**MF:** C<sub>48</sub>H<sub>72</sub>O<sub>14</sub>  
**FW:** 873.1  
**Purity:** ≥95%  
**UV/Vis.:** λ<sub>max</sub>: 246 nm  
**Supplied as:** A solid  
**Storage:** -20°C  
**Stability:** ≥4 years



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

### Laboratory Procedures

Avermectin B<sub>1a</sub> is supplied as a solid. A stock solution may be made by dissolving the avermectin B<sub>1a</sub> in the solvent of choice, which should be purged with an inert gas. Avermectin B<sub>1a</sub> is slightly soluble in chloroform, methanol, and DMSO.

### Description

Avermectin B<sub>1a</sub> is a macrocyclic lactone disaccharide anthelmintic agent that binds to high and low affinity sites on the mammalian GABA<sub>A</sub> receptor.<sup>1-3</sup> Binding to the high affinity site activates the receptor to increase chloride influx, while binding to the low affinity site blocks the channel.<sup>3</sup> Avermectin B<sub>1a</sub> inhibits binding of the glycine receptor antagonist strychnine to membranes and the solubilized receptor from rat spinal cord (K<sub>s</sub> = 1.3 and 3.6 μM, respectively).<sup>4</sup> Formulations containing avermectin B<sub>1a</sub> (>80%) and avermectin B<sub>1b</sub> (~20%; Item No. 17453) are used in insecticides and veterinary anthelmintic formulas as abamectin (Item No. 19201).<sup>5,6</sup>

### References

1. Yamamuro, D., Uchida, R., Takahashi, Y., *et al.* Screening for microbial metabolites affecting phenotype of *Caenorhabditis elegans*. *Biol. Pharm. Bull.* **34(10)**, 1619-1623 (2011).
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3. Huang, J. and Casida, J.E. Avermectin B<sub>1a</sub> binds to high- and low-affinity sites with dual effects on the γ-aminobutyric acid-gated chloride channel of cultured cerebellar granule neurons. *J. Pharm. Exp. Ther.* **281(1)**, 261-266 (1997).
4. Graham, D., Pfeiffer, F., and Betz, H. Avermectin B<sub>1a</sub> inhibits the binding of strychnine to the glycine receptor of rat spinal cord. *Neurosci. Lett.* **29(2)**, 173-176 (1982).
5. Wescott, R. B., Farrell, C.J., Gallina, A.M., *et al.* Efficacy of avermectin B<sub>1a</sub> for treatment of experimentally induced nematode infections in cattle. *Am. J. Vet. Res.* **41(8)**, 1326-1328 (1980).
6. Todd, K. S., Jr., Mansfield, M.E., and DiPietro, J.A. Anthelmintic efficacy of avermectin B<sub>1a</sub> and dihydroavermectin B<sub>1a</sub> against ovine gastrointestinal nematodes in 1977. *Am. J. Vet. Res.* **45(5)**, 976-977 (1984).

#### 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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