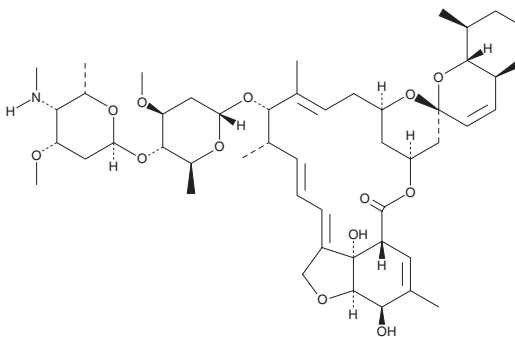


# PRODUCT INFORMATION



## Emamectin B<sub>1a</sub> Item No. 24060

**CAS Registry No.:** 121124-29-6  
**Formal Name:** (4''R)-5-O-demethyl-4''-deoxy-4''-(methylamino)-avermectin A<sub>1a</sub>  
**Synonym:** L-656,748  
**MF:** C<sub>49</sub>H<sub>75</sub>NO<sub>13</sub>  
**FW:** 886.1  
**Purity:** ≥99%  
**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

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

### Description

Emamectin B<sub>1a</sub> is a semisynthetic derivative of avermectin B<sub>1a</sub> (Item No. 22000).<sup>1</sup> It binds to GABA<sub>A</sub> receptors ( $K_i = 17.6$  nM in rat brain membranes), including those containing  $\beta_1$ ,  $\beta_2$ , or  $\beta_3$  subunits ( $IC_{50}$ s = 57, 210, and 49.8 nM for  $\alpha_1\beta_1\gamma_2$ ,  $\alpha_1\beta_2\gamma_2$ , and  $\alpha_1\beta_3\gamma_2$  subunits, respectively), and potentiates the GABA response.<sup>2</sup> Emamectin B<sub>1a</sub> also binds to and inhibits glycine receptors ( $IC_{50} = 218$  nM in rat spinal cord). Emamectin B<sub>1a</sub> induces mortality in 90% of *S. exigua* larvae in a diet incorporation assay at a dose of 1.067 ng/ml, which is approximately 1,500-fold more toxic than avermectin B<sub>1</sub>. It is effective against neonate *S. eridania* larvae in a foliage spray bioassay and when applied topically.

### References

1. Mrozik, H., Eskola, P., Linn, B.O., *et al.* Discovery of novel avermectins with unprecedented insecticidal activity. *Experientia* **45**(3), 315-316 (1989).
2. Dawson, G.R., Wafford, K.A., Smith, A., *et al.* Anticonvulsant and adverse effects of avermectin analogs in mice are mediated through the  $\gamma$ -aminobutyric acid A receptor. *J. Pharmacol. Exp. Ther.* **295**(3), 1051-1060 (2000).

#### 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.

#### WARRANTY AND LIMITATION OF REMEDY

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