Avermectin B1a

**Cat. No.:** HY-15308  
**CAS No.:** 65195-55-3  
**Molecular Formula:** C₄₈H₇₂O₁₄  
**Molecular Weight:** 873.08  
**Target:** Parasite; Antibiotic  
**Pathway:** Anti-infection  
**Storage:** Powder: -20°C 3 years, 4°C 2 years, In solvent: -80°C 6 months, -20°C 1 month

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**SOLVENT & SOLUBILITY**

**In Vitro**

- **DMSO**: ≥ 100 mg/mL (114.54 mM)
- **H₂O**: < 0.1 mg/mL (insoluble)

* "≥" means soluble, but saturation unknown.

**Preparing Stock Solutions**

<table>
<thead>
<tr>
<th>Solvent Concentration</th>
<th>Mass (1 mg)</th>
<th>Mass (5 mg)</th>
<th>Mass (10 mg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 mM</td>
<td>1.1454 mL</td>
<td>5.7269 mL</td>
<td>11.4537 mL</td>
</tr>
<tr>
<td>5 mM</td>
<td>0.2291 mL</td>
<td>1.1454 mL</td>
<td>2.2907 mL</td>
</tr>
<tr>
<td>10 mM</td>
<td>0.1145 mL</td>
<td>0.5727 mL</td>
<td>1.1454 mL</td>
</tr>
</tbody>
</table>

Please refer to the solubility information to select the appropriate solvent.

**In Vivo**

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline  
   Solubility: ≥ 2.5 mg/mL (2.86 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% corn oil  
   Solubility: ≥ 2.5 mg/mL (2.86 mM); Clear solution

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**BIOLOGICAL ACTIVITY**

**Description**

Avermectin B1a is an antiparasitic agent that paralyzes nematodes without causing hypercontraction or flaccid paralysis.

**In Vitro**

[^3]H]AVM B1a preferentially binds to synaptic membranes from several regions of rat brain.[^3]H]AVM B1a specific binding to intact monolayers of granule cells increases rapidly with time of incubation and reaches equilibrium after approximately 20 min at 24°C. Higher concentrations of[^3]H]AVM B1a leads to markedly greater nonspecific binding, 60% at 25 nM. Various AVM analogs also produce concentration-dependent inhibition of[^3]H]AVM B1a binding in intact cerebellar neurons. AVM B1a and moxidectin are similar in potency (IC₅₀ values, 120 and 126 nM, respectively[^3]). AVMB1a-stimulated chloride efflux from mouse brain synaptic vesicles results from the activation of GABA-insensitive chloride channels and that this action is
distinct from their previously documented effects on GABA-gated chloride channels in mouse brain preparations\textsuperscript{[4]}.

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

<table>
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<th>In Vivo</th>
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| Bacteria are significantly inhibited when the AVM B1a concentration is higher than 83.3 mg/kg, while fungi are less impaired in soil. Soil respiration is also inhibited by high concentration AVM B1a, which differs with soil types. The half lethal dosage (LD\textsubscript{50}) of AVM B1a to soil earthworm is estimated as 4.63 mg x cm\textsuperscript{2} in filter paper contact test, and as 24.13 and 17.06 mg/kg, respectively after treated 7 and 14 days in artificial soil\textsuperscript{[1]}. In artificial soil, the LC50 of AVM B1a on earthworms are 24.1 mg/kg and 17.1 mg/kg, respectively, for 7 and 14 days. About 80.0% and 94.8% of the accumulated AVM B1a are eliminated respectively in two groups within 1 day after they are exposed to AVM B1a-free soil, but a trace amount of AVM B1a is found for a relative long time in earthworms\textsuperscript{[2]}.  

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REFERENCES


Caution: Product has not been fully validated for medical applications. For research use only.

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