Almitrine mesylate

**Cat. No.:** HY-107319  
**CAS No.:** 29608-49-9  
**Molecular Formula:** C₂₈H₃₇F₂N₇O₆S₂  
**Molecular Weight:** 669.76  
**Target:** Potassium Channel  
**Pathway:** Membrane Transporter/Ion Channel  
**Storage:**  
- Powder: -20°C for 3 years, 4°C for 2 years  
- In solvent: -80°C for 6 months, -20°C for 1 month

### SOLVENT & SOLUBILITY

**In Vitro**  
DMSO: 125 mg/mL (186.63 mM; Need ultrasonic)

<table>
<thead>
<tr>
<th>Preparing Stock Solutions</th>
<th>Solvent Concentration</th>
<th>Mass 1 mg</th>
<th>Mass 5 mg</th>
<th>Mass 10 mg</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 mM</td>
<td>1.4931 mL</td>
<td>7.4654 mL</td>
<td>14.9307 mL</td>
</tr>
<tr>
<td></td>
<td>5 mM</td>
<td>0.2986 mL</td>
<td>1.4931 mL</td>
<td>2.9861 mL</td>
</tr>
<tr>
<td></td>
<td>10 mM</td>
<td>0.1493 mL</td>
<td>0.7465 mL</td>
<td>1.4931 mL</td>
</tr>
</tbody>
</table>

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

### BIOLOGICAL ACTIVITY

**Description**  
Almitrine mesylate, a peripheral chemoreceptor agonist, inhibits selectively the Ca²⁺-dependent K⁺ channel.

**IC₅₀ & Target**  
K⁺ channel[¹]

**In Vitro**  
Almitrine inhibits the activity of a high-conductance (152±13 pS), Ca²⁺-dependent K⁺ channel by decreasing its open probability. The IC₅₀ value of the effect is 0.22 μM. The inhibitory effect of Almitrine on Ca²⁺-dependent K⁺ channels also is observed in GH3 cells. Almitrine at concentrations up to 10 μM does not affect whole-cell voltage-dependent K⁺, Ca²⁺, or Na⁺ currents in rat or rabbit cells. However, this concentration of Almitrine significantly inhibits the Ca²⁺-dependent component of K⁺ currents in rat chemoreceptor cells[¹].

**In Vivo**  
Almitrine acts via the peripheral arterial chemoreceptors raising carotid sinus nerve output and minute ventilation. Almitrine also has a pulmonary vascular action causing a dose-dependent constriction and dilatation. At low doses Almitrine enhances hypoxic pulmonary vasoconstriction and may improve the overall ventilation/perfusion ratio[²].
## PROTOCOL

### Animal Administration

8-week-old **male spf Wistar rats** are used. Rats are anaesthetized with Thiobarbiturate inactin (BYK, 100 mg/kg, i.p.). The interaction of the ventilatory response to hypoxia and an intermittent (2 min on, 1 min break) **low-dose** (10 μg/kg per min) and **high-dose** (80 μg/kg per min) infusion of S9581 or **Almitrine** is tested in control and chronically hypoxic rats. S9581 or **Almitrine** is infused intravenously (100 μg/mL). Inspired oxygen levels were controlled by passing oxygen-nitrogen mixtures across the tracheal port at a flow rate of 3-4 L/min. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

## REFERENCES


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

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