**Solifenacin hydrochloride**

**Cat. No.**: HY-I0230  
**CAS No.**: 180468-39-7  
**Molecular Formula**: C₂₃H₂₇ClN₂O₂  
**Molecular Weight**: 398.93  
**Target**: mAChR  
**Pathway**: GPCR/G Protein; Neuronal Signaling  
**Storage**:  
- Powder: -20°C, 3 years, 4°C, 2 years  
- In solvent: -80°C, 6 months, -20°C, 1 month

### SOLVENT & SOLUBILITY

#### In Vitro  
DMSO: 50 mg/mL (125.34 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>1 mM</td>
<td>2.5067 mL</td>
<td>12.5335 mL</td>
<td>25.0671 mL</td>
<td></td>
</tr>
<tr>
<td>5 mM</td>
<td>0.5013 mL</td>
<td>2.5067 mL</td>
<td>5.0134 mL</td>
<td></td>
</tr>
<tr>
<td>10 mM</td>
<td>0.2507 mL</td>
<td>1.2534 mL</td>
<td>2.5067 mL</td>
<td></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: ≥ 2.75 mg/mL (6.89 mM); Clear solution  
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)  
   Solubility: ≥ 2.75 mg/mL (6.89 mM); Clear solution  
3. Add each solvent one by one: 10% DMSO >> 90% corn oil  
   Solubility: ≥ 2.75 mg/mL (6.89 mM); Clear solution

### BIOLOGICAL ACTIVITY

**Description**  
Solifenacin hydrochloride (YM905 hydrochloride) is a muscarinic receptor antagonist, with pKᵢs of 7.6, 6.9 and 8.0 for M₁, M₂ and M₃ receptors, respectively.

**IC₅₀ & Target**  
Muscarnic receptor

**In Vitro**  
Solifenacin hydrochloride (YM905 hydrochloride) is a novel muscarinic receptor antagonist with pKᵢs of 7.6±0.056, 6.9±0.034 and 8.0±0.021 for M₁, M₂ and M₃ receptors, respectively. In murine submandibular gland cells, the antagonistic effects of
100 nM Solifenacin hydrochloride and oxybutynin on Ca\(^{2+}\) mobilization evoked by varying doses of carbachol (CCh) are examined. Solifenacin hydrochloride does not shift the CCh dose-activation curve in a parallel manner whereas oxybutynin shows insurmountable antagonism. The pK\(_b\) values are obtained as 7.4±0.17 for Solifenacin hydrochloride and 8.8±0.21 for oxybutynin\(^1\).

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

**In Vivo**

Solifenacin hydrochloride (YM905 hydrochloride) reduces bladder responses by 40% at a dose of 210 nmol/kg (0.1 mg/kg) and abolishes them at 2100 nmol/kg (1 mg/kg). In contrast, its inhibitory effects on salivary and cardiac responses are only slight at 630 nmol/kg (0.3 mg/kg), and reach 66% and 49%, respectively, at 2100 nmol/kg (1 mg/kg). At doses of 63 and 210 nmol/kg (0.03 and 0.1 mg/kg), Solifenacin hydrochloride slightly increases saliva secretion\(^1\). Solifenacin hydrochloride (0.01 to 0.3 mg/kg i.v.) dose-dependently increases bladder capacity and voided volume at doses of 0.03 mg/kg i.v. or more, but does not affect residual volume or micturition pressure at any dose tested\(^2\).

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**REFERENCES**


