(S)-Timolol Maleate

**Cat. No.:** HY-17380  
**CAS No.:** 26921-17-5  
**Molecular Formula:** C₁₇H₂₈N₄O₇S  
**Molecular Weight:** 432.49  
**Target:** Adrenergic Receptor  
**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 : 100 mg/mL (231.22 mM; Need ultrasonic)

<table>
<thead>
<tr>
<th>Preparing Stock Solutions</th>
<th>Solvent Concentration</th>
<th>Mass</th>
<th>1 mg</th>
<th>5 mg</th>
<th>10 mg</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 mM</td>
<td></td>
<td></td>
<td>2.3122 mL</td>
<td>11.5610 mL</td>
<td>23.1219 mL</td>
</tr>
<tr>
<td>5 mM</td>
<td></td>
<td></td>
<td>0.4624 mL</td>
<td>2.3122 mL</td>
<td>4.6244 mL</td>
</tr>
<tr>
<td>10 mM</td>
<td></td>
<td></td>
<td>0.2312 mL</td>
<td>1.1561 mL</td>
<td>2.3122 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 (5.78 mM); Clear solution

2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)  
   Solubility: ≥ 2.5 mg/mL (5.78 mM); Clear solution

3. Add each solvent one by one: 10% DMSO >> 90% corn oil  
   Solubility: ≥ 2.5 mg/mL (5.78 mM); Clear solution

### BIOLOGICAL ACTIVITY

**Description**  
(S)-Timolol Maleate (L-714,465 Maleate) is a non-cardioselective hydrophilic β-adrenoceptor blocker. (S)-Timolol Maleate is widely used as standard medication for intraocular pressure (glaucoma) by preventing the production of aqueous humor. (S)-Timolol Maleate can be used for hypertension, angina pectoris and myocardial infarction[1][2][3].

**IC₅₀ & Target**  
Ki: 1.97 nM (β1-adrenoceptor); 2.0 nM (β2-adrenoceptor)
### In Vitro
Timolol maleate represents a chiral compound with one asymmetric carbon in its structure. Single isomer, (S)-enantiomer, is the commercially available form and as a non-cardioselective β-adrenergic blocker. Its commonest application is in topical treatment of increasing intraocular pressure in patients with chronic open angle glaucoma and also in aphakic patients\(^1\).

### In Vivo
There are reports that indicate lower biological activity of (R)-isomer compared to (S)-isomer. Namely, (R)-timolol is 49 times less potent than (S)-timolol on β-adrenoceptor in animals, 13 times less potent in constricting the airways of normal subjects\(^1\).

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### REFERENCES

