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产品名称：Tarafenacin (D-tartrate)
产品别名：SVT-40776 D-tartrate

生物活性：

Description

Tarafenacin D-tartrate (SVT-40776 D-tartrate) is a highly selective M3 muscarinic receptor antagonist (Ki= 0.19 nM), ~200 fold selectivity over M2 receptor. IC50 value: 0.19 nM (Ki) [1] Target: M3 muscarinic receptor in vitro: SVT-40776 is highly selective for M(3) over M(2) receptors (Ki = 0.19 nmol.L(-1) for M(3) receptor affinity). SVT-40776 was the most potent in inhibiting carbachol-induced bladder contractions of the anti-cholinergic agents tested, without affecting atrial contractions over the same range of concentrations. SVT-40776 exhibited the highest urinary versus cardiac selectivity (199-fold) [1]. SVT-40776 has a much higher binding affinity (K(d) = 0.4 nM) to M5 mAChR than that of solifenacin (K(d) = 31 nM) with the same reeptor. The calculated binding free energy change (-2.3 ± 0.3 kcal/mol) from solifenacin to SVT-40776 is in good agreement with the experimentally derived binding free energy change (-2.58 kcal/mol), suggesting that our modeled M5 mAChR structure and its complexes with the antagonists are reliable [2]. in vivo: In the guinea pig in vivo model, SVT-40776 inhibited 25% of spontaneous bladder contractions at a very low dose (6.97 microg.kg(-1) i.v), without affecting arterial blood pressure [1].

Solvent&Solubility

In Vitro:

DMSO : ≥ 100 mg/mL (179.06 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	1.7906 mL	8.9529 mL	17.9057 mL
	5 mM	0.3581 mL	1.7906 mL	3.5811 mL
	10 mM	0.1791 mL	0.8953 mL	1.7906 mL

*请根据产品在不同溶剂中的溶解度选择合适的溶剂配制储备液；一旦配成溶液，请分装保存，避免反复冻融造成的产品失效。

储备液的保存方式和期限：-80°C, 6 months; -20°C, 1 month。-80°C 储存时，请在 6 个月内使用，-20°C 储存时，请在 1 个月内使用。

In Vivo:

请根据您的实验动物和给药方式选择适当的溶解方案。以下溶解方案都请先按照 In Vitro 方式配制澄清的储备液，再依次添加助溶剂：

——为保证实验结果的可靠性，澄清的储备液可以根据储存条件，适当保存；体内实验的工作液，建议您现用现配，当天使用； 以下溶剂前显示的百分比是指该溶剂在您配制终溶液中的体积占比；如在配制过程中出现沉淀、析出现象，可以通过加热和/或超声的方式助溶

1.请依序添加每种溶剂： 10% DMSO→40% PEG300 →5% Tween-80 → 45% saline

Solubility: ≥ 2.5 mg/mL (4.48 mM); Clear solution

此方案可获得 ≥ 2.5 mg/mL (4.48 mM，饱和度未知) 的澄清溶液。

以 1 mL 工作液为例，取 100 μL 25.0 mg/mL 的澄清 DMSO 储备液加到 400 μL PEG300 中，混合均匀；向上述体系中加入 50 μL Tween-80，混合均匀；然后继续加入 450 μL 生理盐水定容至 1 mL。

2.请依序添加每种溶剂： 10% DMSO→ 90% (20% SBE-β-CD in saline)

	Solubility: ≥ 2.5 mg/mL (4.48 mM); Clear solution 此方案可获得 ≥ 2.5 mg/mL (4.48 mM，饱和度未知) 的澄清溶液。 以 1 mL 工作液为例，取 100 μL 25.0 mg/mL 的澄清 DMSO 储备液加到 900 μL 20% 的 SBE-β-CD 生理盐水水溶液中，混合均匀。 3.请依序添加每种溶剂： 10% DMSO →90% corn oil Solubility: ≥ 2.5 mg/mL (4.48 mM); Clear solution 此方案可获得 ≥ 2.5 mg/mL (4.48 mM，饱和度未知) 的澄清溶液，此方案不适用于实验周期在半个月以上的实验。 以 1 mL 工作液为例，取 100 μL 25.0 mg/mL 的澄清 DMSO 储备液加到 900 μL 玉米油中，混合均匀。
References	[1]. Salcedo C, et al. In vivo and in vitro pharmacological characterization of SVT-40776, a novel M3 muscarinic receptor antagonist, for the treatment of overactive bladder. Br J Pharmacol. 2009 Mar;156(5):807-17. [2]. Huang X, et al. Microscopic binding of M5 muscarinic acetylcholine receptor with antagonists by homology modeling, molecular docking, and molecular dynamics simulation. J Phys Chem B. 2012 Jan 12;116(1):532-41.