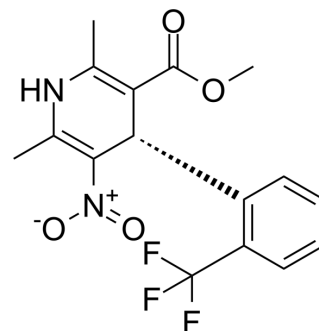


(S)-(-)-Bay-K-8644

Cat. No.:	HY-15124
CAS No.:	98625-26-4
Molecular Formula:	C ₁₆ H ₁₅ F ₃ N ₂ O ₄
Molecular Weight:	356.3
Target:	Calcium Channel
Pathway:	Membrane Transporter/Ion Channel; Neuronal Signaling
Storage:	Powder -20°C 3 years 4°C 2 years In solvent -80°C 2 years -20°C 1 year



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (280.66 mM; Need ultrasonic)
 H₂O : < 0.1 mg/mL (ultrasonic;warming;heat to 60°C) (insoluble)

	Solvent Concentration	Mass	1 mg	5 mg	10 mg
Preparing Stock Solutions	1 mM		2.8066 mL	14.0331 mL	28.0662 mL
	5 mM		0.5613 mL	2.8066 mL	5.6132 mL
	10 mM		0.2807 mL	1.4033 mL	2.8066 mL

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

In Vivo

- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
 Solubility: 2.5 mg/mL (7.02 mM); Suspended solution; Need ultrasonic
- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
 Solubility: ≥ 2.08 mg/mL (5.84 mM); Clear solution

BIOLOGICAL ACTIVITY

Description	(S)-(-)-Bay-K-8644 is an agonist of L-type Ca ²⁺ channel. (S)-(-)-Bay-K-8644 activates Ba ²⁺ currents (I _{Ba}) (EC ₅₀ =32 nM).
IC ₅₀ & Target	EC ₅₀ : 32 nM (I _{Ba}) ^[1]
In Vitro	(±)-Bay K 8644, a conventional racemic mixture of Bay K 8644, is widely used as an L-type Ca ²⁺ channel agonist. Each optical isomer possesses opposite effects on I _{Ba} (R(+)-Bay K 8644 as an antagonist and (S)-(-)-Bay-K-8644 as an agonist. (S)-(-)-Bay-K-8644 can prevent the inhibitory actions of two distinct cyclic nucleotide pathways on I _{Ba} in gastric myocytes of the guinea pig antrum ^[1] . The Ca ²⁺ channel activity is enhanced by 3–30 μM (S)-(-)-Bay-K-8644 an agonist of L-type Ca ²⁺ channels ^[2] . The interactions of two Ca ²⁺ channel activators (S)-(-)-Bay-K-8644 and FPL 64176 is examined on smooth muscle L-type Ca ²⁺

channels. FPL 64176 (300 nM) causes a sustained contraction of rat tail artery strips. This contractile response is inhibited by approximately 70% by (S)-(-)-Bay-K-8644 (EC_{50} =14 nM). (S)-(-)-Bay-K-8644 (100 nM) increases whole-cell Ca^{2+} currents in A7r5 smooth muscle cells but effectively blocks further stimulation by 1 μ M FPL 64176^[3].

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

CUSTOMER VALIDATION

- Free Radic Biol Med. 2024 Jan 6;S0891-5849(24)00002-9.
- Life Sci. 2019 Mar 15;221:135-142.
- Int J Mol Sci. 2023 Nov 27, 24(23), 16806.
- Eur J Pharmacol. 2020 Nov 5;886:173513.

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- [1]. Zhu HL, et al. Antagonistic actions of S(-)-Bay K 8644 on cyclic nucleotide-induced inhibition of voltage-dependent Ba(2+) currents in guinea pig gastric antrum. Naunyn Schmiedeberg's Arch Pharmacol. 2008 Dec;378(6):609-15.
- [2]. Mironov SL, et al. L-type Ca^{2+} channels in inspiratory neurones of mice and their modulation by hypoxia. J Physiol. 1998 Oct 1;512 (Pt 1):75-87.
- [3]. Rampe D, et al. Functional interactions between two Ca^{2+} channel activators, (S)-Bay K 8644 and FPL 64176, in smooth muscle. Mol Pharmacol. 1992 Apr;41(4):599-602.

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

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