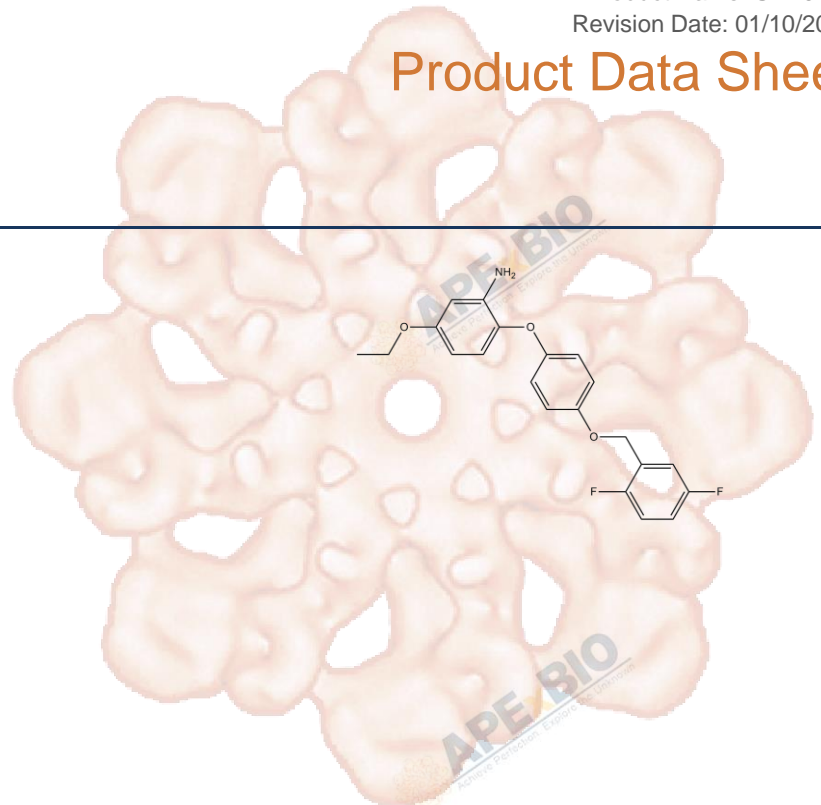


Product Data Sheet

SEA0400

Cat. No.:	A3811
CAS No.:	223104-29-8
Formula:	C ₂₁ H ₁₉ F ₂ N ₃ O
M.Wt:	371.38
Synonyms:	SEA 0400;SEA-0400
Target:	Neuroscience
Pathway:	5-HT Receptor
Storage:	Store at -20°C



Solvent & Solubility

insoluble in H₂O; ≥18.57 mg/mL in DMSO; ≥46.4 mg/mL in EtOH with ultrasonic

In Vitro

Preparing Stock Solutions	Mass			
	Solvent Concentration	1mg	5mg	10mg
	1 mM	2.6927 mL	13.4633 mL	26.9266 mL
	5 mM	0.5385 mL	2.6927 mL	5.3853 mL
	10 mM	0.2693 mL	1.3463 mL	2.6927 mL

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

Biological Activity

Shortsummary

Specific inhibitor of Na⁺/Ca²⁺ exchange

IC₅₀ & Target

5-33 nM (Na⁺-Ca²⁺ exchanger)

In Vitro

Cell Viability Assay

Cell Line: cortical neurons (dissociated from 18-day rat fetuses), astrocytes (isolated from cerebral cortices of 1-day-old Wistar rats) and microglia (obtained from cerebral cortices of 1-day-old Wistar rats)

Preparation method: The solubility of this compound in DMSO is >10 mM. General tips for obtaining a higher concentration: Please warm the tube at 37 °C for 10 minutes and/or shake it in the ultrasonic bath for a while. Stock solution can be stored below

		-20°C for several months.
	Reacting conditions:	IC50: 33 nM (neurons), 5.0 nM (astrocytes) and 8.3 nM (microglia). 10 min
	Applications:	SEA040 is a most potent and selective inhibitor of Na ⁺ -Ca ²⁺ exchanger (NCX). It inhibited the Na ⁺ -dependent 45Ca ²⁺ uptake with IC50 values of 33 nM (neurons), 5.0 nM (astrocytes) and 8.3 nM (microglia).
In Vivo	Animal experiment	
	Animal models:	Guinea Pigs
	Dosage form:	Guinea Pigs were anesthetized with sodium pentobarbital (50 mg/kg i.p.). After 15 min of stabilization, SEA0400 were administered at doses of 1–10 mg/kg (each animal received only one dose) as i.v. bolus injection through the jugular vein. Five minutes later, 25 µg/kg of aconitine was injected to induce ventricular arrhythmias.
	Applications:	SEA0400 showed no significant changes at dose of 10 mg/kg. The duration of normal sinus rhythm, PVC, narrow QRS VT and wide QRS VT were 21.5, 4.3, 17.3 and 16.8 min, respectively.
	Other notes:	Please test the solubility of all compounds indoor, and the actual solubility may slightly differ with the theoretical value. This is caused by an experimental system error and it is normal.

Product Citations

1. Nie J, Duan Q, et al. "Ranolazine prevents pressure overload-induced cardiac hypertrophy and heart failure by restoring aberrant Na(+) and Ca(2+) handling." J Cell Physiol. 2018 Nov 29.PMID:30488495
2. Halty-deLeon L, Hansson BS, Wicher D. "The Drosophila melanogaster Na(+)/Ca(2+) Exchanger CALX Controls the Ca(2+) Level in Olfactory Sensory Neurons at Rest and After Odorant Receptor Activation." Front Cell Neurosci. 2018 Jul 3;12:186.PMID:30018538
3. Jovana Bojcevski, dipl. Phys. "Calcium-mediated mechanisms of retinal ganglion cell degeneration during autoimmune optic neuritis." Ruperto-Carola University of Heidelberg, Germany. 2017 May 23.
4. Hashad AM, Mazumdar N, et al. "Interplay among distinct Ca(2+) conductances drives Ca(2+) sparks/spontaneous transient outward currents in rat cerebral arteries." J Physiol. 2016 Nov 2.PMID:27805790

See more customer validations on www.apexbt.com.

References

- [1] Matsuda T, Arakawa N, Takuma K, et al. SEA0400, a novel and selective inhibitor of the Na⁺-Ca²⁺ exchanger, attenuates reperfusion injury in the in vitro and in vivo cerebral ischemic models. Journal of Pharmacology and Experimental Therapeutics, 2001, 298(1): 249-256.
- [2] Amran M S, Hashimoto K, Homma N. Effects of sodium-calcium exchange inhibitors, KB-R7943 and SEA0400, on aconitine-induced arrhythmias in guinea pigs in vivo, in vitro, and in computer simulation studies. Journal of Pharmacology and Experimental Therapeutics, 2004, 310(1): 83-89.

Caution

FOR RESEARCH PURPOSES ONLY.

NOT FOR HUMAN, VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

Specific storage and handling information for each product is indicated on the product datasheet. Most APExBIO products are stable under the recommended conditions. Products are sometimes shipped at a temperature that differs from the recommended storage temperature. Shortterm storage of many products are stable in the short-term at temperatures that differ from that required for long-term storage. We ensure that the product is shipped under conditions that will maintain the quality of the reagents. Upon receipt of the product, follow the storage recommendations on the product data sheet.

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