

Product Datasheet

Mibefradil dihydrochloride (orb1219643)

Catalog Number	orb1219643
Category	Small Molecules
Description	Mibefradil dihydrochloride is an blocker of calcium channel with moderate selectivity for T-type Ca^{2+} channels (T-type and L-type currents with IC_{50}s of 2.7 μM and 18.6 μM, respectively). Mibefradil dihydrochloride inhibits reversibly the T- and L-type currents with IC_{50} values of 2.7 and 18.6 μM, respectively..Mibefradil inhibited Orai1, Orai2, and Orai3 currents dose-dependently. The IC_{50} for Orai1, Orai2, and Orai3 channels was 52.6, 14.1, and 3.8 μM respectively. Outside-out patch demonstrated that perfusion of 10-μM mibefradil to the extracellular surface completely blocked Orai3 currents and single channel activity evoked by 2-APB. Intracellular application of mibefradil did not alter Orai3 channel activity. Mibefradil at higher concentrations (>50 μM) inhibited Ca^{2+} release but had no effect on cytosolic STIM1 translocation evoked by thapsigargin. Inhibition on Orai channels by mibefradil was structure-related, as other T-type Ca^{2+} channel blockers with different structures, such as ethosuximide and ML218, had no or minimal effects on Orai channels. Moreover, mibefradil inhibited cell proliferation, induced apoptosis, and arrested cell cycle progression.Compared with the saline-treated group, rats receiving Mibefradil or Ethosuximide show significant lower $\text{CaV}3.2$ expression in the spinal cord and DRG.
Target	Calcium Channel
Purity	>98% (HPLC)
MW	568.55
Target Areas	T-type calcium channel L-type calcium channel
Solubility (25°C)	H2O:122 mg/mL (214.58mM)
CAS Number	116666-63-8

Biorbyt Ltd.

7 Signet Court, Swann Road
Cambridge
CB5 8LA
United Kingdom

Email: info@biorbyt.com, support@biorbyt.com
Phone: +44 (0)1223 859353 | Fax: +1 (415) 651-8558

Biorbyt LLC

68 TW Alexander Drive
Research Triangle Park
Durham
NC 27713-2847
United States

Email: info@biorbyt.com, support@biorbyt.com
Phone: +1 (415) 906-5211 | Fax: +1 (415) 651-8558

Formula	$C_{29}H_{40}Cl_2FN_3O_3$
SMILES	<chem>Cl.Cl.COCC(=O)O[C@]1(CCN(C)CCCC2nc3ccccc3[nH]2)CCc2cc(F)ccc2[C@@H]1C(C)C</chem>
Storage	Storage temperature: -20°C. Stability: ≥ 2 years
Note	For research use only
Expiration Date	12 months from date of receipt.

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7 Signet Court, Swann Road
Cambridge
CB5 8LA
United Kingdom

Email: info@biorbyt.com, support@biorbyt.com
Phone: [+44 \(0\)1223 859353](tel:+44(0)1223859353) | Fax: [+1 \(415\) 651-8558](tel:+1(415)651-8558)

Biorbyt LLC

68 TW Alexander Drive
Research Triangle Park
Durham
NC 27713-2847
United States

Email: info@biorbyt.com, support@biorbyt.com
Phone: [+1 \(415\) 906-5211](tel:+1(415)906-5211) | Fax: [+1 \(415\) 651-8558](tel:+1(415)651-8558)