

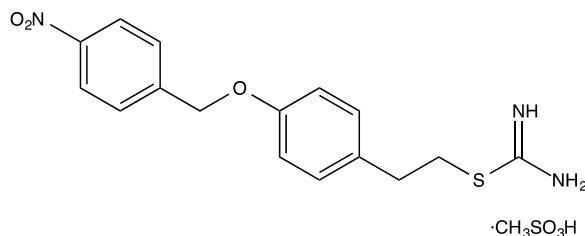


Catalog # 10-1163
KB-R7943 mesylate

CAS# 182004-65-5

2-[2-[4-(4-Nitrobenzyloxy)phenyl]ethyl]isothiourous mesylate

Lot # FBS1068



KB-R7943 is a potent and selective inhibitor of the reversed Na⁺/Ca²⁺ exchanger (NCE or NCX; IC₅₀'s = 1.2-2.4 μM in cardiomyocytes, smooth muscle cells, NCX1-transfected fibroblasts¹; 0.7 μM in cultured rat forebrain²). KB-R7943 has also been shown to inhibit the mitochondrial Ca²⁺ uniporter (MCU) – Ki = 5.5 μM.³ Recently shown to inhibit complex I in the mitochondrial respiratory chain (IC₅₀ = 11.4 μM) and block NMDA receptors (IC₅₀ = 13.4 μM).⁴

- 1) Iwamoto *et al.* (1996), *Novel Isothioures Derivative Selectively Inhibits the Reverse Mode of Na⁺/Ca²⁺ Exchange in Cells Expressing NCX1*. J.Biol.Chem., **271** 22391
- 2) Hoyt *et al.* (1998) *Reverse Na⁺/Ca²⁺ exchange contributes to glutamate-induced intracellular Ca²⁺ concentration increases in cultured rat forebrain neurons*, Mol.Pharmacol. **53** 742
- 3) Santo-Domingo *et al.* (2007) *The plasma membrane Na⁺/Ca²⁺ exchange inhibitor KB-R7943 is also a potent inhibitor of the mitochondrial Ca²⁺ uniporter*. Br.J.Pharmacol. **151** 647
- 4) Brustovetsky *et al.* (2011) *KB-R7943, an inhibitor of the reverse Na⁺/Ca²⁺ exchanger, blocks N-methyl-D-aspartate receptor and inhibits mitochondrial complex I*. Br.J.Pharmacol. **162** 255

PHYSICAL DATA

Molecular Weight:	427.49
Molecular Formula:	C ₁₆ H ₁₇ N ₃ O ₃ S·CH ₃ SO ₃ H
Purity:	>98% by TLC (10% Methanol/methylene chloride + 0.1% NH ₄ OH; R _f = 0.40) NMR: Conforms
Solubility:	DMSO (up to 50 mg/ml)
Physical Description:	Tan solid
Storage and Stability:	Store as supplied at room temperature for up to 2 years from the date of purchase. Protect from exposure to moisture. Solutions in DMSO may be stored at -20°C for up to 3 months.

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