

**Product Name:** KB-R7943 mesylate

**Catalog No.:** 1244

**Batch No.:** 3

CAS Number: 182004-65-5

IUPAC Name: 2-[2-[4-(4-Nitrobenzyloxy)phenyl]ethyl]isothiourea mesylate

**1. PHYSICAL AND CHEMICAL PROPERTIES**

**Batch Molecular Formula:** C<sub>16</sub>H<sub>17</sub>N<sub>3</sub>O<sub>3</sub>S·CH<sub>3</sub>SO<sub>3</sub>H

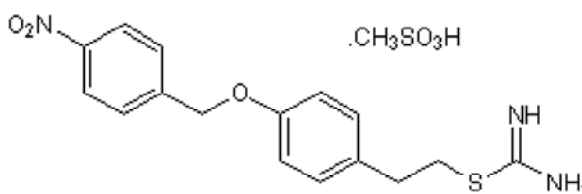
**Batch Molecular Weight:** 427.49

**Physical Appearance:** White crystalline solid

**Solubility:** DMSO to 100 mM

**Storage:** Store at RT

**Batch Molecular Structure:**



**2. ANALYTICAL DATA**

**TLC:** R<sub>f</sub> = 0.5 (Dichloromethane:Methanol:Ammonia soln. [85:15:1])

**Melting Point:** Between 175 - 177°C

**HPLC:** Shows 99.8% purity

**<sup>1</sup>H NMR:** Consistent with structure

**Mass Spectrum:** Consistent with structure

**Microanalysis:**

	Carbon	Hydrogen	Nitrogen
Theoretical	47.76	4.95	9.82
Found	47.8	4.88	9.86

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**bio-techne.com**

info@bio-techne.com

techsupport@bio-techne.com

**North America**

Tel: (800) 343 7475

**China**

info.cn@bio-techne.com

Tel: +86 (21) 52380373

**Europe Middle East Africa**

Tel: +44 (0)1235 529449

**Rest of World**

[www.tocris.com/distributors](http://www.tocris.com/distributors)

Tel: +1 612 379 2956

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**Description:**

Potent, selective inhibitor of the reverse mode of the Na<sup>+</sup>/Ca<sup>2+</sup> exchanger (IC<sub>50</sub> = 0.7 μM). Also inhibits the mitochondrial Ca<sup>2+</sup> uniporter (MCU; IC<sub>50</sub> = 5.5 μM). Does not affect Na<sup>+</sup>-dependent transport systems or ionotropic glutamate receptors.

**Physical and Chemical Properties:**

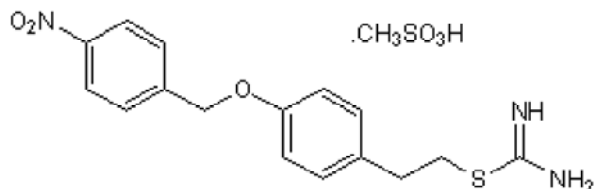
Batch Molecular Formula: C<sub>16</sub>H<sub>17</sub>N<sub>3</sub>O<sub>3</sub>S.CH<sub>3</sub>SO<sub>3</sub>H

Batch Molecular Weight: 427.49

Physical Appearance: White crystalline solid

**Minimum Purity:** >99%

**Batch Molecular Structure:**



**Storage:** Store at RT

**Solubility & Usage Info:**

DMSO to 100 mM

**Stability and Solubility Advice:**

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a 45-60°C water bath).

Information concerning product stability, particularly in solution, has rarely been reported and in most cases we can only offer a general guide. Our standard recommendations are:

**SOLIDS:** Provided storage is as stated on the product label and the vial is kept tightly sealed, the product can be stored for up to 6 months from date of receipt.

**SOLUTIONS:** We recommend that stock solutions, once prepared, are stored aliquoted in tightly sealed vials at -20°C or below and used within 1 month. Wherever possible solutions should be made up and used on the same day.

**References:**

**Santo-Domingo et al (2007)** The plasma membrane <sup>+</sup>/Ca<sup>2+</sup> exchange inhibitor KB-R7943 is also a potent inhibitor of the mitochondrial Ca<sup>2+</sup> uniporter. *Br.J.Pharmacol.* **151** 647. PMID: 17471180.

**Schröder et al (1999)** The novel Na<sup>+</sup>/Ca<sup>2+</sup> exchange inhibitor KB-R7943 protects CA1 neurons in rat hippocampal slices against hypoxia/hypoglycemic injury. *Neuropharmacology* **38** 319. PMID: 10218875.

**Watano et al (1999)** Effect of <sup>+</sup>/Ca<sup>2+</sup> exchange inhibitor, KB-R7943 on ouabain-induced arrhythmias in guinea-pigs. *Br.J.Pharmacol.* **127** 1846. PMID: 10482915.

**Hoyt et al (1998)** Reverse Na<sup>+</sup>/Ca<sup>2+</sup> exchange contributes to glutamate-induced intracellular Ca<sup>2+</sup> concentration increases in cultured rat forebrain neurons. *Mol.Pharmacol.* **53** 742. PMID: 9547366.

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