

Certificate of Analysis

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Product Name: Ruthenium Red

Catalog No.: 1439

Batch No.: 4

CAS Number: 11103-72-3

IUPAC Name: Ammoniated ruthenium oxychloride

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: $H_{42}N_{14}O_2Ru_3Cl_6 \cdot 2\frac{1}{2}H_2O$

Batch Molecular Weight: 831.39

Physical Appearance: Brown solid

Solubility: water to 10 mM

Storage: Store at RT

Batch Molecular Structure: $[(NH_3)_5RuORu(NH_3)_4ORu(NH_3)_5]^{6+} 6Cl^-$

2. ANALYTICAL DATA

Microanalysis:

	Carbon Hydrogen Nitrogen	
Theoretical	5.7	23.59
Found	5.5	23.51

Caution - Not Fully Tested • Research Use Only • Not For Human or Veterinary Use

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Description:

Ruthenium Red blocks Ca²⁺ uptake and release from mitochondria, and Ca²⁺ release from ryanodine-sensitive intracellular stores. Also blocks cell membrane-located capsaicin-activated cation channels (IC₅₀ = 14 nM) and voltage-sensitive Ca²⁺ channels to inhibit neurotransmitter release.

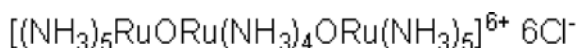
Physical and Chemical Properties:

Batch Molecular Formula: H₄₂N₁₄O₂Ru₃Cl₆·2½H₂O

Batch Molecular Weight: 831.39

Physical Appearance: Brown solid

Batch Molecular Structure:



Storage: Store at RT

Solubility & Usage Info:

water to 10 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:

Szallasi and Blumberg (1999) Vanilloid (capsaicin) receptors and mechanisms. *Pharmacol.Rev.* **51** 159. PMID: 10353985.

Xu et al (1999) Ruthenium red modifies the cardiac and skeletal muscle Ca²⁺ release channels (ryanodine receptors) by multiple mechanisms. *J.Biol.Chem.* **274** 32680. PMID: 10551824.

Amann and Maggi (1991) Ruthenium red as a capsaicin antagonist. *Life Sci.* **49** 849. PMID: 1715010.

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