

Product Name: RuBi-Glutamate

Catalog No.: 3574

Batch No.: 11

CAS Number: 2417096-44-5

IUPAC Name: (*bis*(2,2'-Bipyridine-*N,N'*)trimethylphosphine)-(S)-1-aminopropane-1,3-dicarboxylic acid ruthenium(2⁺) complex sodium hexafluorophosphate salt

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: C₂₈H₃₂N₅O₄PRu.2NaPF₆

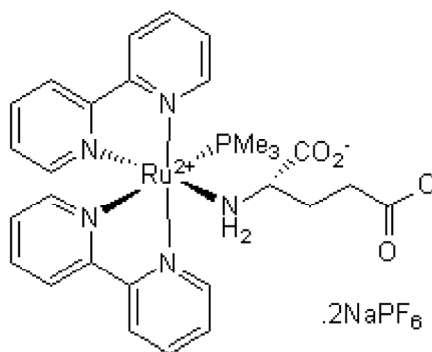
Batch Molecular Weight: 970.54

Physical Appearance: Orange solid

Solubility: water to 20 mM

Storage: Store at -20°C

Batch Molecular Structure:



2. ANALYTICAL DATA

¹H NMR: Consistent with structure

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

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Description:

RuBi-Glutamate is a ruthenium-bipyridine-trimethylphosphine caged glutamate that can be excited by visible wavelengths and releases glutamate after one- or two-photon excitation. Has high quantum efficiency and can be used at low concentrations, partly avoiding blockade of GABAergic transmission seen with other caged glutamate compounds. Displays high spatial resolution and generates excitatory responses in individual dendritic spines with physiological kinetics. MNI-caged-L-glutamate (Cat. No. 1490) also available.

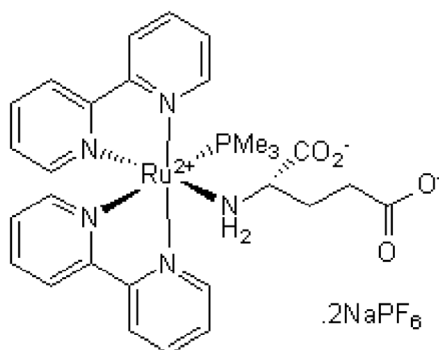
Physical and Chemical Properties:

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Physical Appearance: Orange solid

Batch Molecular Structure:



Storage: Store at -20°C

CAUTION - This product is light sensitive and we recommend that the solid material and any solutions obtained are protected from exposure to light.

Solubility & Usage Info:

water to 20 mM

CAUTION: RuBi-Glutamate is light sensitive and all experiments should be conducted with minimal light.

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. *Unless contradicted by product-specific protocols or instructions, our standard recommendations apply:

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.

Licensing Information:

Sold under licence from Columbia University

References:

Salierno et al (2010) A fast ruthenium polypyridine cage complex photoreleases glutamate with visible or IR light in one and two photon regimes. *J.Inorg.Biochem.* **104** 418. PMID: 20060592.

Fino et al (2009) RuBi-Glutamate: two-photon and visible-light photoactivation of neurons and dendritic spines. *Front.Neural Circuits* **3** 1. PMID: 19506708.

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