

Product Name: SA 4503 dihydrochloride

Catalog No.: 4951

Batch No.: 1

CAS Number: 165377-44-6

IUPAC Name: 1-[2-(3,4-Dimethoxyphenyl)ethyl]-4-(3-phenylpropyl)-piperazine dihydrochloride

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: C₂₃H₃₂N₂O₂·2HCl

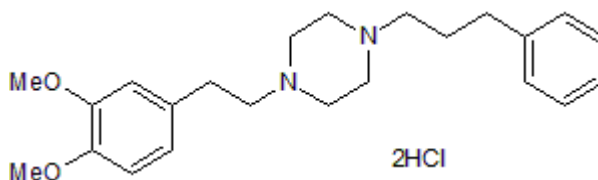
Batch Molecular Weight: 441.43

Physical Appearance: White solid

Solubility: water to 100 mM
DMSO to 20 mM

Storage: Desiccate at RT

Batch Molecular Structure:



2. ANALYTICAL DATA

HPLC: Shows 99.6% purity

¹H NMR: Consistent with structure

Mass Spectrum: Consistent with structure

Microanalysis:

	Carbon	Hydrogen	Nitrogen
Theoretical	62.58	7.76	6.35
Found	62.61	7.86	6.27

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

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Description:

Selective σ_1 receptor agonist (IC_{50} = 17.4 nM). Exhibits 100-fold greater selectivity for σ_1 over σ_2 receptors. Inhibits angiotensin II-induced cardiomyocyte hypertrophy in vitro; attenuates myocardial hypertrophy following chronic administration in vivo. Enhances brain plasticity and sensorimotor function following experimental stroke in vivo.

Physical and Chemical Properties:

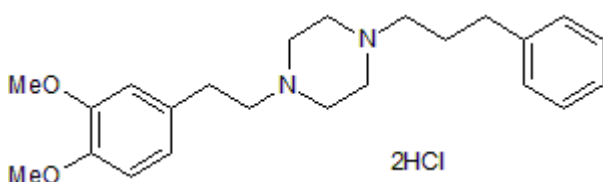
Batch Molecular Formula: $C_{23}H_{32}N_2O_2 \cdot 2HCl$

Batch Molecular Weight: 441.43

Physical Appearance: White solid

Minimum Purity: >98%

Batch Molecular Structure:



Storage: Desiccate at RT

Solubility & Usage Info:

water to 100 mM

DMSO to 20 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:

Matsuno *et al* (1996) Binding properties of SA4503, a novel and selective sigma 1 receptor agonist. *Eur.J.Pharmacol.* **306** 271. PMID: 8813641.

Ruscher (2011) The sigma-1 receptor enhances brain plasticity and functional recovery after experimental stroke. *Brain* **134** 732. PMID: 21278085.

Tagashira *et al* (2013) Stimulation of σ_1 -receptor restores abnormal mitochondrial Ca^{2+} mobilization and ATP production following cardiac hypertrophy. *Biochim.Biophys.Acta* **1830** 3082. PMID: 23298811.

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