

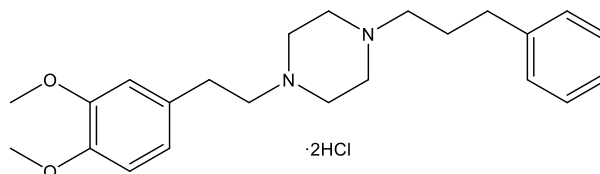
Catalog # 10-4219

SA4503

CAS# 165377-44-6

1-(3,4-Dimethoxyphenethyl)-4-(3-phenylpropyl)piperazine dihydrochloride; Cutamesine

Lot # JKM1238



SA4503 is a potent and selective sigma 1 agonist (σ_1 IC₅₀ = 17.4 nM, σ_2 IC₅₀ = 1784 nM).¹ It has been investigated as a cognition enhancer^{2,3}, antidepressant^{4,5}, anti-addiction agent⁶, and neuroprotectant⁷⁻¹⁰.

- 1) Matsuno *et al.* (1996), *Binding properties of SA4503, a novel and selective sigma 1 receptor agonist*; Eur. J. Pharmacol. **306** 271
- 2) Matsuno *et al.* (1997), *SA4503, a novel cognition enhancer with sigma 1 agonistic properties*; Behav. Brain Res. **83** 221
- 3) Niitsu *et al.* (2012), *Sigma-1 receptor agonists as therapeutic drugs for cognitive impairment in neuropsychiatric diseases*; Curr. Pharm. Des. **18** 875
- 4) Skuza and Rogoz *et al.* (2002), *A potential antidepressant activity of SA4503, a selective sigma 1 receptor agonist*; Behav. Pharmacol. **13** 537
- 5) Lucas *et al.* (2008), *Further evidence for an antidepressant potential of the selective sigma1 agonist SA4503: electrophysiological, morphological and behavioral studies*; Int. J. Neuropsychopharmacol. **11** 485
- 6) Mori *et al.* (2014), *Inhibitory effects of SA4503 on the rewarding effects of abused drugs*; Addict. Biol. **19** 362
- 7) Nakazawa *et al.* (1998), *Activation of sigma1 receptor subtype leads to neuroprotection in the rat primary neuronal cultures*; Neurochem. Int. **32** 337
- 8) Ruscher *et al.* (2011), *The sigma-1 receptor enhances brain plasticity and functional recovery after experimental stroke*; Brain **134**(Pt.3) 732
- 9) Ruscher *et al.* (2012), *Effects of the sigma-1 receptor agonist 1-(3,4-dimethoxyphenethyl)-4-(3-phenylpropyl)piperazine dihydrochloride on inflammation after stroke*; PLoS One. **7** e45118
- 10) Yamashita *et al.* (2015), *Neuroprotective effects of cutamesine, a ligand of the sigma-1 receptor chaperone, against noise-induced hearing loss*; Int. J. Neurosci. Res. **93** 788

PHYSICAL DATA

Molecular Weight:	441.43
Molecular Formula:	C ₂₃ H ₃₂ N ₂ O ₂ ·2HCl
Purity:	>98% TLC
	NMR: (Conforms)
Solubility:	Soluble in DMSO (5 mg/ml); Water (>25 mg/mL)
Physical Description:	White solid
Storage and Stability:	Store as supplied at -20°C for up to 1 year from the date of purchase. Store solutions at -20°C for up to 1 month.

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