

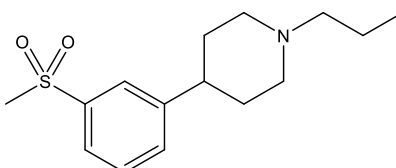
Catalog # 10-4003

Pridopidine

CAS# 346688-38-8

4-(3-(Methylsulfonyl)phenyl)-1-propylpiperidine; ACR16

Lot # FBA7145



Pridopidine is being studied as a potential treatment for Huntington's disease, Parkinson's disease, and schizophrenia based on its locomotor stabilizing and antipsychotic-like effects.^{1,2} It was, unusually, able to reverse both hypo- and hyperdopaminergia depending on local dopamine concentrations without inducing catalepsy. This was originally attributed to functional dopamine D2 antagonism with fast on/off kinetics ("dopamine stabilizer").³ More recent studies have attributed pridopidine's effects to its being a more potent sigma-1 ligand than a D2 ligand.^{4,5} Displays neuroprotective/restorative effects^{6,7} and ameliorates central features of amyotrophic lateral sclerosis pathology⁸ in a sigma-1-mediated manner.

- 1) Pettersson *et al.*, (2010), *Synthesis and Evaluation of a Set of 4-Phenylpiperidines and 4-Phenylpiperazines as D2 Receptor Ligands and the Discovery of the Dopaminergic Stabilizer 4-[3-(Methylsulfonyl)phenyl]-1-propylpiperidine (Huntexil, Pridopidine, ACR16)*; J.Med.Chem. **53** 2510
- 2) Natesan *et al.*, (2006), *The dopamine stabilizers (S)-(-)-(3-methanesulfonylphenyl)-1-propyl-piperidine [(-)-OSU6162] and 4-(3-methanesulfonylphenyl)-1-propyl-piperidine (ACR16) show high in vivo D2 receptor occupancy, antipsychotic-like efficacy, and low potential for motor side effects in the rat*; J.Pharmacol.Exp.Ther. **318** 810
- 3) Dyhring *et al.*(2010), *The dopaminergic stabilizers pridopidine (ACR16) and (-)-OSU6162 display dopamine D(2) receptor antagonism and fast receptor dissociation properties*; Eur.J.Pharmacol. **628** 19
- 4) Sahlholm *et al.*, (2015), *Pridopidine selectively occupies sigma-1 rather than dopamine D2 receptors at behaviorally active doses*; Psychopharmacology (Berl) **232** 3443
- 5) Sahlholm *et al.* (2013), *The dopamine stabilizers ACR16 and (-)-OSU6162 display nanomolar affinities at the σ -1 receptor*; Mol.Psychiatry **18** 12
- 6) Francardo *et al.* (2019), *Pridopidine Induces Functional Neurorestoration Via the Sigma-1 Receptor in a Mouse Model of Parkinson's Disease*; Neurotherapeutics epub ahead of print
- 7) Ryskamp *et al.* (2017), *The sigma-1 receptor mediates the beneficial effects of pridopidine in a mouse model of Huntington disease*; Neurobiol.Dis. **97(Pt A)** 46
- 8) Ionescu *et al.* (2019), *Targeting the Sigma-1 Receptor via Pridopidine Ameliorates Central Features of ALS Pathology in a SOD1G93A Model*; Cell Death Dis. **10** 210

PHYSICAL DATA

Molecular Weight:	281.41
Molecular Formula:	C ₁₅ H ₂₃ NO ₂ S
Purity:	>98% by HPLC
	NMR: (Conforms)
Solubility:	DMSO (up to 10 mg/ml)
Physical Description:	White solid
Storage and Stability:	Store as supplied at room temperature for up to 2 years from the date of purchase. Protect from exposure to moisture. Solutions in DMSO may be stored at -20°C for up to 3 months.

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