

## Product Data Sheet

Product Name: Orphenadrine hydrochloride

Cat. No.: GC33701

### Chemical Properties

Cas. No. 341-69-5

SMILES CC1=CC=CC=C1C(C2=CC=CC=C2)OCCN(C)C.[H]Cl

Formula C<sub>18</sub>H<sub>24</sub>ClNO

M.Wt 305.84

Solubility DMF: 33 mg/ml, DMSO: 33 mg/ml, Ethanol: 10 mg/ml, PBS (pH 7.2): 10 mg/ml

Storage Store at -20°C

General tips For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution: ship with blue ice. All other available sizes: ship with RT, or blue ice upon request.

Structure

### Background

Orphenadrine is a muscarinic acetylcholine receptor (mAChR) antagonist ( $K_D$ s = 48, 213, 120, 170, and 129 nM for M<sub>1</sub>-M<sub>5</sub> receptors, respectively).<sup>1</sup> Orphenadrine (2-5 mg/kg, i.v.) decreases muscle activity induced by the mAChR agonist oxotremorine in rabbits.<sup>2</sup> It is also an NMDA receptor antagonist with a  $K_i$  value of 6  $\mu$ M in a radioligand binding assay in human postmortem frontal cortex and an IC<sub>50</sub> value of 16.2  $\mu$ M for inhibiting steady state currents in cultured superior colliculus neurons.<sup>3</sup> Formulations containing orphenadrine have been used in the treatment of acute painful musculoskeletal conditions, including muscle spasms.

1. Stanton, T., Bolden-Watson, C., Cusack, B., et al. Antagonism of the five cloned human muscarinic cholinergic receptors expressed in CHO-K1 cells by antidepressants and antihistaminics *Biochem. Pharmacol.* 45(11)2352-2354(1993) 2. Ban, T., and Hojo, M. A comparative study of the effects of anti-parkinson drugs on the oxotremorine-induced EEG and muscular activities *Psychopharmacologia* 19(1)1-15(1971) 3. Kornhuber, J.,

**Caution: Product has not been fully validated for medical applications. For research use only.**

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Parsons, C.G., Hartmann, S., et al. Orphenadrine is an uncompetitive N-methyl-D-aspartate (NMDA) receptor antagonist: Binding and patch clamp studies. *J. Neural Transm. Gen. Sect.* 102(3):237-246(1995)

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