

## Product Data Sheet

Product Name: Nylidrin  
Cat. No.: GC48801

### Chemical Properties

Cas. No. 447-41-6

SMILES OC1=CC=C(C(C(C)NC(CCC2=CC=CC=C2)C)O)C=C1

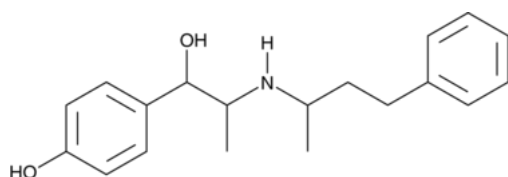
Formula C<sub>19</sub>H<sub>25</sub>NO<sub>2</sub> M.Wt 299.4

Solubility DMF: 30 mg/ml, DMSO: 30 mg/ml, DMSO:PBS (pH 7.2) (1:7): 0.12 mg/ml  
Storage -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 size: ship with RT, or blue ice upon request.

Structure



### Background

Nylidrin is an agonist of  $\beta$ -adrenergic receptors and antagonist of NR1A/2B subunit-containing NMDA receptors.<sup>1,2</sup> It binds to  $\beta$ -adrenergic receptors ( $K_d = 0.37 \mu\text{M}$ ) and activates adenylate cyclase with a  $K_a$  value of  $1.3 \mu\text{M}$ .<sup>1</sup> Nylidrin is selective for NR1A/2B over NR1A/2A and NR1A/2C subunit-containing NMDA receptors ( $\text{IC}_{50}\text{s} = 0.18, 32, \text{ and } 42 \mu\text{M}$ , respectively, for the recombinant receptors expressed in *Xenopus* oocytes).<sup>2</sup> It inhibits NMDA-induced currents in primary rat cortical neurons ( $\text{IC}_{50} = 0.22 \mu\text{M}$ ). It also decreases blood pressure and increases heart rate in spontaneously hypertensive rats (SHRs) with a minimum effective dose (MED) of 0.5 mg/kg.<sup>3</sup> Nylidrin (20 and 100  $\mu\text{M}$ ) inhibits influenza hemagglutinin 2-mediated membrane fusion in Vero E6 cells.<sup>4</sup> It inhibits infection of MDCK cells by H1N1 and H3N2 influenza isolates *in vitro* ( $\text{EC}_{50}\text{s} = 7.2$  and 12.1  $\mu\text{M}$ , respectively) and prevents infection in a mouse model of mouse-adapted H1N1

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

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA

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infection.

1. Bilezikian, J.P., Dornfeld, A.M., and Gammon, D.E. Structure-binding-activity analysis of beta-adrenergic amines—I. Binding to the beta receptor and activation of adenylate cyclase *Biochem. Pharmacol.* 27(10)1445-1454 (1978)  
2. Whittemore, E.R., Ilyin, V.I., Konkoy, C.S., et al. Subtype-selective antagonism of NMDA receptors by nylidrin *Eur. J. Pharmacol.* 337(2-3)197-208 (1997)  
3. Yen, T.T., and Pearson, D.V. Nylidrin: A potent antihypertensive agent in hypertensive rats *Res. Commun. Chem. Pathol. Pharmacol.* 23(1)11-28 (1979)  
4. Jang, Y., Shin, J.S., Lee, J.-Y., et al. In vitro and in vivo antiviral activity of nylidrin by targeting the hemagglutinin 2-mediated membrane fusion of influenza A virus *Viruses* 12(5)581 (2020)

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