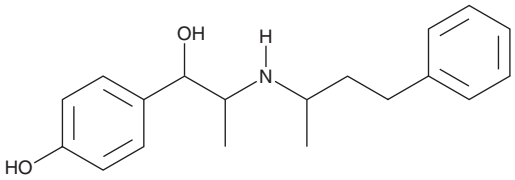
PRODUCT INFORMATION

Nylidrin

Item No. 33232

CAS Registry No.:	447-41-6
Formal Name:	4-hydroxy-α-[1-[(1-methyl-3-phenylpropyl)amino]ethyl]-benzenemethanol
Synonym:	Buphenine
MF:	$C_{19}H_{25}NO_2$
FW:	299.4
Purity:	≥85%
UV/Vis.:	λ_{max}: 226 nm
Supplied as:	A crystalline solid
Storage:	-20°C
Stability:	≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Nylidrin is supplied as a crystalline solid. A stock solution may be made by dissolving the nylidrin in the solvent of choice, which should be purged with an inert gas. Nylidrin is soluble in organic solvents such as DMSO and dimethyl formamide. The solubility of nylidrin in these solvents is approximately 30 mg/ml.

Nylidrin is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, nylidrin should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. Nylidrin has a solubility of approximately 0.12 mg/ml in a 1:7 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Nylidrin is an agonist of β-adrenergic receptors and antagonist of NR1A/2B subunit-containing NMDA receptors.[1,2] It binds to β-adrenergic receptors (K_d = 0.37 µM) and activates adenylate cyclase with a K_a value of 1.3 µM.[1] Nylidrin is selective for NR1A/2B over NR1A/2A and NR1A/2C subunit-containing NMDA receptors (IC_{50}s = 0.18, 32, and 42 µM, respectively, for the recombinant receptors expressed in *Xenopus* oocytes).[2] It inhibits NMDA-induced currents in primary rat cortical neurons (IC_{50} = 0.22 µM). 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.[3] Nylidrin (20 and 100 µM) inhibits influenza hemagglutinin 2-mediated membrane fusion in Vero E6 cells.[4] It inhibits infection of MDCK cells by H1N1 and H3N2 influenza isolates *in vitro* (EC_{50}s = 7.2 and 12.1 µM, respectively) and prevents infection in a mouse model of mouse-adapted H1N1 infection.

References

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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