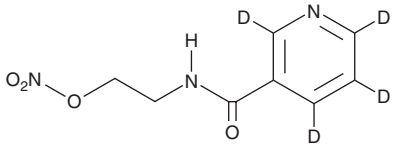
PRODUCT INFORMATION

Nicorandil-d_4

Item No. 33608

CAS Registry No.:	1132681-23-2
Formal Name:	N-[2-(nitrooxy)ethyl]-3-pyridine-2,4,5,6-d_4-carboxamide
Synonym:	2-Nicotinamidoethyl nitrate-d_4
MF:	$C_8H_5D_4N_3O_4$
FW:	215.2
Chemical Purity:	≥98% (Nicorandil)
Deuterium Incorporation:	≥99% deuterated forms (d_1-d_4); ≤1% d_0
Supplied as:	A 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

Nicorandil-d_4 is intended for use as an internal standard for the quantification of nicorandil (Item No. 18460) by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated *versus* unlabeled).

Nicorandil-d_4 is supplied as a solid. A stock solution may be made by dissolving the nicorandil-d_4 in the solvent of choice, which should be purged with an inert gas. Nicorandil-d_4 is soluble in DMSO.

Description

Nicorandil is an activator of sulfonylurea receptor 2B (SUR2B) linked to ATP-sensitive potassium channel $K_{ir}6.2$ (EC_{50} = ~10 µM) and a nitric oxide (NO) donor.[1,2] It is selective for SUR2B/$K_{ir}6.2$ over the SUR2A/$K_{ir}6.2$ channel (EC_{50} = >500 µM).[1] Nicorandil activates soluble guanylate cyclase in a cell-free assay and relaxes partially depolarized isolated bovine coronary artery strips (EC_{50} = 4.4 µM).[3] It decreases mean blood pressure, coronary resistance, and heart rate, as well as increases coronary sinus outflow, in dogs when administered intravenously at a dose of 1 mg/kg.[4] Nicorandil increases survival and decreases infarct size in a rabbit model of myocardial ischemia-reperfusion injury induced by left coronary artery occlusion.[5] Formulations containing nicorandil have been used in the treatment of angina pectoris.

References

1. Shindo, T., Yamada, M., Isomoto, S., *et al.* SUR2 subtype (A and B)-dependent differential activation of the cloned ATP-sensitive K^+ channels by pinacidil and nicorandil. *Br. J. Pharmacol.* **124(5)**, 985-991 (1998).
2. Frampton, J., Buckley, M.M., and Fitton, A. Nicorandil. A review of its pharmacology and therapeutic efficacy in angina pectoris. *Drugs* **44(4)**, 625-655 (1992).
3. Holzmann, S. Cyclic GMP as possible mediator of coronary arterial relaxation by nicorandil (SG-75). *J. Cardiovasc. Pharmacol.* **5(3)**, 364-370 (1983).
4. Taira, N., Satoh, K., Yanagisawa, T., *et al.* Pharmacological profile of a new coronary vasodilator drug, 2-nicotinamidoethyl nitrate (SG-75). *Clin. Exp. Pharmacol. Physiol.* **6(3)**, 301-316 (1979).
5. Das, B.C., Sarkar, C., and Karanth, S.K. Effects of administration of nicorandil or bimakalim prior to and during ischemia or reperfusion on survival rate, ischemia/reperfusion-induced arrhythmias and infarct size in anesthetized rabbits. *Naunyn-Schmiedeberg's Arch. Pharmacol.* **364(5)**, 383-396 (2001).

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.**CAYMANCHEM**.COM