

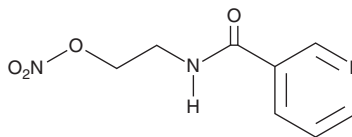
# PRODUCT INFORMATION



## Nicorandil

Item No. 18460

CAS Registry No.: 65141-46-0  
Formal Name: N-[2-(nitrooxy)ethyl]-3-pyridinecarboxamide  
Synonyms: 2-Nicotinamidoethyl nitrate, SG-75  
MF:  $C_8H_9N_3O_4$   
FW: 211.2  
Purity:  $\geq 98\%$   
UV/Vis.:  $\lambda_{\max}$ : 262 nm  
Supplied as: A crystalline solid  
Storage:  $-20^\circ\text{C}$   
Stability:  $\geq 4$  years



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

### Laboratory Procedures

Nicorandil is supplied as a crystalline solid. A stock solution may be made by dissolving the nicorandil in the solvent of choice, which should be purged with an inert gas. Nicorandil is soluble in the organic solvent DMSO at a concentration of approximately 10 mg/ml.

### Description

Nicorandil is an activator of sulfonylurea receptor 2B (SUR2B) linked to ATP-sensitive potassium channel  $K_{ir}6.2$  ( $EC_{50} = \sim 10 \mu\text{M}$ ) and a nitric oxide (NO) donor.<sup>1,2</sup> It is selective for SUR2B/ $K_{ir}6.2$  over the SUR2A/ $K_{ir}6.2$  channel ( $EC_{50} = > 500 \mu\text{M}$ ).<sup>1</sup> Nicorandil activates soluble guanylate cyclase in a cell-free assay and relaxes partially depolarized isolated bovine coronary artery strips ( $EC_{50} = 4.4 \mu\text{M}$ ).<sup>3</sup> 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.<sup>4</sup> Nicorandil increases survival and decreases infarct size in a rabbit model of myocardial ischemia-reperfusion injury induced by left coronary artery occlusion.<sup>5</sup> Formulations containing nicorandil have been used in the treatment of angina pectoris.

### References

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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).

#### WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

#### SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

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