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Nicorandil

National Cancer Institute

Source

National Cancer Institute. *Nicorandil*. NCI Thesaurus. Code C84012.

A niacinamide derivative, a plasma membrane adenosine triphosphate (ATP)-sensitive potassium (K⁺) (KATP) channel activator and a nitric oxide (NO) donor, with vasodilatory, antihypertensive and potential cardio- and lung-protective activities. Upon administration, nicorandil binds to and opens KATP channels, which causes relaxation of vascular smooth muscles, stimulates vasodilatation, reduces vasoconstriction, decreases blood pressure and protects the myocardium against ischemia. In addition, nicorandil exerts nitrate-like properties, through the stimulation of guanylate cyclase, the downregulation of Rho-kinase activity and the further promotion of venous vasodilation. Although the mechanism of action has not been fully elucidated, nicorandil may exhibit protective activity against radiation-induced lung and heart toxicity, possibly by preventing both accumulation of reactive oxygen species (ROS) and ROS-induced cellular damage.