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# Timolol

National Cancer Institute

## Source

National Cancer Institute. *Timolol*. NCI Thesaurus. Code C47757.

A propanolamine derivative and a non-selective beta-adrenergic antagonist with antihypertensive property. Timolol competitively binds to beta-1-adrenergic receptors in the heart and vascular smooth muscle and beta-2-receptors in the bronchial and vascular smooth muscle, resulting in a decrease in beta-adrenergic stimulation. Beta-1-receptor blockade results in a decrease in resting and exercise heart rate and cardiac output, a decrease in both systolic and diastolic blood pressure, and, possibly, a reduction in reflex orthostatic hypotension. Beta-2-blockade results in an increase in peripheral vascular resistance. The ultimate results include vasodilation, and negative chronotropic and inotropic cardiac effects. In addition, timolol reduces intra-ocular pressure possibly by decreasing aqueous humor production by reduction of blood flow to the ciliary processes and cAMP synthesis.