

CAXII-IN-3

Chemical Properties

CAS No. :

Formula:

Molecular Weight:

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year

Actual storage temperature shall be subject to the COA.

Biological Description

Description	CAXII-IN-3 is a potent carbonic anhydrase (CA XII) inhibitor, with a K_i of 53 nM. It selectively inhibits various human CA isoforms, showing K_i values of 5.3 μ M for CA I, 75 nM for CA II, 1.9 μ M for CA IV, and > 10 μ M for CA IX. Primarily targeting CA II and CA XII, CAXII-IN-3 reduces aqueous humor production. Additionally, it exhibits β 3-AR agonist activity, leading to retinal blood vessel dilation and improved optic nerve perfusion. CAXII-IN-3 is applicable in the study of ocular diseases such as glaucoma.
Targets(IC50)	Adrenergic Receptor,Carbonic Anhydrase
In vitro	CAXII-IN-3 (Compound 14) enhances cAMP production in HEK293T cells expressing stable β 1, β 2, and β 3 adrenergic receptor subtypes, with pEC50 values of 5.00, 5.29, and 4.98, respectively. It also induces complete vasodilation in porcine retinal arteriolar rings with an EC50 of 11 μ M. Additionally, at a concentration of 4 μ M for 2 hours, CAXII-IN-3 shows melanin accumulation in porcine retinal pigment epithelium (RPE) comparable to Propranolol.
In vivo	CAXII-IN-3 (Compound 14) administered as a single dose (30 μ L of 1% solution, eye drops) reaches peak effectiveness 120 minutes post-administration, effectively reducing intraocular pressure (IOP) in rabbits.

Inhibitor · Natural Compounds · Compound Libraries · Recombinant Proteins

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