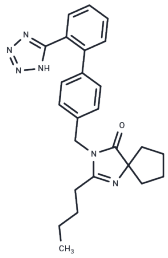
Data Sheet (Cat.No.T1615)

TargetMol

Irbesartan

Chemical Properties



CAS No. : 138402-11-6

Formula: C25H28N6O

Molecular Weight: 428.53

Appearance: no data available

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

Biological Description

Description	Irbesartan (SR-47436) is an Angiotensin 2 Receptor Blocker whose mechanism of action involves antagonizing the Angiotensin 2 Receptor.
Targets(IC50)	Apoptosis,RAAS
In vitro	Administering 7 mg/kg of Irbesartan daily to rats with congestive heart failure induced by lily alkaloid significantly inhibited skeletal muscle cell apoptosis and intramuscular atrophy. This effect is associated with a decrease in TNFα levels and is attributed to AT1 receptor blockade. Oral administration of 1 mg/kg Irbesartan in conscious rats with normal blood pressure reduced angiotensin II-induced hypertension, exhibiting effects similar to losartan treatment. However, its efficacy in normotensive monkeys was significantly higher than that of 10 mg/kg losartan.
In vivo	At a concentration of 10 μM, Irbesartan inhibits the increase in mRNA and protein levels of integrins αv, β1, β3, and β5, osteopontin, and α-actinin in rat cardiac fibroblasts induced by angiotensin II, resulting in reduced cell adhesion to the extracellular matrix (ECM) proteins. Additionally, Irbesartan significantly induces the expression of the adipogenic marker gene, fatty acid-binding protein 2 (aP2), in 3T3-L1 cells in a concentration-dependent manner, with an EC50 of 3.5 μM and inducing effects being 3.3 times stronger at 10 μM. Also, 10 μM Irbesartan substantially induces peroxisome proliferator-activated receptor-γ transcriptional activity by 3.4 times, independent of its AT1 receptor antagonist action. Pre-treatment with 10 μM Irbesartan in rat vascular smooth muscle cells reduces angiotensin II-induced apoptosis by inhibiting angiotensin II internalization, demonstrating concentration dependency. Irbesartan competes with angiotensin II for binding to the AT1 receptor subtype with an IC50 of 1.3 nM and exhibits 10 times higher efficacy than Losartan in antagonizing AII-induced spasms in rabbit aortic rings, with IC50 values of 4 nM compared to Losartan's 14 nM and 25 nM, respectively.

Solubility Information

Solubility	DMSO: 25 mg/mL (58.34 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.3336 mL	11.6678 mL	23.3356 mL
5 mM	0.4667 mL	2.3336 mL	4.6671 mL
10 mM	0.2334 mL	1.1668 mL	2.3336 mL
50 mM	0.0467 mL	0.2334 mL	0.4667 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Reference

Bernhart CA, et al. J Med Chem, 1993, 36(22), 3371-3380.
Kawano H, et al. Hypertension, 2000, 35, 273-279.
Schupp M, et al. Circulation, 2004, 109(17), 2054-2057.
Ruiz E, et al. Eur J Pharmacol, 2007, 567(3), 231-239.
Dalla Libera L, et al. Circulation, 2001, 103(17), 2195-2200.