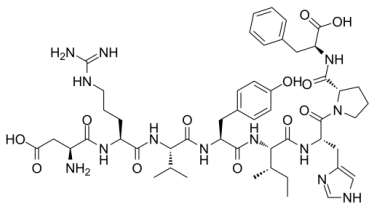
Data Sheet

Product Name:	Angiotensin II human
Cat. No.:	CS-2280
CAS No.:	4474-91-3
Molecular Formula:	C50H71N13O12
Molecular Weight:	1046.18
Target:	Angiotensin Receptor
Pathway:	GPCR/G Protein
Solubility:	H2O : ≥ 50 mg/mL (47.79 mM); DMSO : 16.67 mg/mL (15.93 mM; Need ultrasonic)



BIOLOGICAL ACTIVITY:

Angiotensin II human is a vasoconstrictor that acts on the **AT1** and the **AT2** receptor. IC50 & Target: Angiotensin receptor (AT receptor)[1] **In Vitro:** Most of the known actions of Angiotensin II (Ang II) are mediated by AT_1 receptors, the AT_2 receptor contributes to the regulation of blood pressure and renal function[1]. Angiotensin II raises blood pressure (BP) by a number of actions, the most important ones being vasoconstriction, sympathetic nervous stimulation, increased aldosterone biosynthesis and renal actions. Other Angiotensin II actions include induction of growth, cell migration, and mitosis of vascular smooth muscle cells, increased synthesis of collagen type I and III in fibroblasts, leading to thickening of the vascular wall and myocardium, and fibrosis. These actions are mediated by type 1 Ang II receptors (AT_1)[2]. At the cellular level, responsiveness to Angiotensin II is conferred by the expression of the two classes of angiotensin receptors (AT_1 and AT_2). The effects of Angiotensin II to increase blood pressure are mediated by AT1 receptors[3]. **In Vivo:** To distinguish the AT_1 receptor population that is critical for the pathogenesis of hypertension, osmotic minipumps are implanted s.c. into each animal to infuse Angiotensin II (1,000 ng/kg/min) continuously for 4 weeks. Angiotensin II causes hypertension by activating AT_1 receptors in the kidney promoting sodium reabsorption[3].

PROTOCOL (Extracted from published papers and Only for reference)

Animal Administration: [3]Mice[3]

(129×C57BL/6) F_1 mice lacking AT_{1A} receptors for Angiotensin II are used. The mice are fed 10 gm/day gelled 0.25% NaCl diet that contains all nutrients and water. After 1 week of baseline collections, the animals are implanted with osmotic minipumps infusing Angiotensin II and are returned to the metabolic cage for 5 more days. Urinary sodium content is determined by using an IL943 Automatic Flame photometer. After 28 days of Angiotensin II infusion, hearts are harvested, weighed, fixed in formalin, sectioned, and stained with Masson trichrome. All of the tissues are examined by a pathologist (P.R.) without knowledge of genotypes.

References:

[1]. de Gasparo M, et al. International union of pharmacology. XXIII. The angiotensin II receptors. Pharmacol Rev. 2000 Sep;52(3):415-72.

[2]. Fyhrquist F, et al. Role of angiotensin II in blood pressure regulation and in the pathophysiology of cardiovascular disorders. J Hum Hypertens. 1995 Nov;9 Suppl 5:S19-24.

[3]. Crowley SD, et al. Angiotensin II causes hypertension and cardiac hypertrophy through its receptors in the kidney. Proc Natl Acad Sci U S A. 2006 Nov 21;103(47):17985-90.

CAIndexNames:

Angiotensin II, 5-L-isoleucine-

SMILES:

O=C(N[C@@H](CCCNC(N)=N)C(N[C@@H](C(C)C)C(N[C@@H](CC1=CC=C(C=C1)O)C(N[C@@H]([C@@H](C)CC)C(N[C@@H](CC2=CNC=N2)C(N3[C@@H](CCC3)C(N[C@@H](CC4=CC=CC=C4)C(O)=O)=O)=O)=O)=O)=O)=O)[C@H](CC(O)=O)N

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