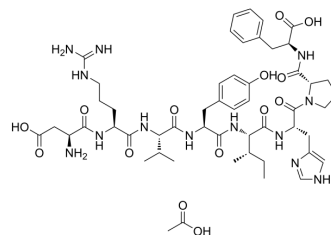


Angiotensin II human acetate

Cat. No.:	HY-13948A
CAS No.:	68521-88-0
Molecular Formula:	C ₅₂ H ₇₅ N ₁₃ O ₁₄
Molecular Weight:	1106.23
Sequence:	Asp-Arg-Val-Tyr-Ile-His-Pro-Phe
Sequence Shortening:	DRVYIHPF
Target:	Apoptosis; Angiotensin Receptor
Pathway:	Apoptosis; GPCR/G Protein
Storage:	Sealed storage, away from moisture and light, under nitrogen Powder -80°C 2 years -20°C 1 year

* In solvent : -80°C, 1 years; -20°C, 6 months (sealed storage, away from moisture and light, under nitrogen)



SOLVENT & SOLUBILITY

In Vitro	H ₂ O : 25 mg/mL (22.60 mM; Need ultrasonic)					
		Solvent Concentration	Mass			
	Preparing Stock Solutions			1 mg	5 mg	10 mg
		1 mM		0.9040 mL	4.5199 mL	9.0397 mL
		5 mM		0.1808 mL	0.9040 mL	1.8079 mL
	10 mM		0.0904 mL	0.4520 mL	0.9040 mL	
Please refer to the solubility information to select the appropriate solvent.						
In Vivo	1. Add each solvent one by one: Saline Solubility: 16.67 mg/mL (15.07 mM); Clear solution; Need ultrasonic 2. Add each solvent one by one: PBS Solubility: 10 mg/mL (9.04 mM); Clear solution; Need ultrasonic					

BIOLOGICAL ACTIVITY

Description	<p>Angiotensin II human (Angiotensin II) acetate is a vasoconstrictor and a major bioactive peptide of the renin/angiotensin system. Angiotensin II human acetate plays a central role in regulating human blood pressure, which is mainly mediated by interactions between Angiotensin II and the G-protein-coupled receptors (GPCRs) Angiotensin II type 1 receptor (AT1R) and Angiotensin II type 2 receptor (AT2R). Angiotensin II human acetate stimulates sympathetic nervous stimulation, increases aldosterone biosynthesis and renal actions. Angiotensin II human acetate induces growth of vascular smooth muscle cells, increases collagen type I and III synthesis in fibroblasts, leading to thickening of the vascular wall and myocardium, and</p>
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fibrosis. Angiotensin II human acetate also induces apoptosis. Angiotensin II human acetate induces capillary formation from endothelial cells via the LOX-1 dependent redox-sensitive pathway^{[1][2][3][4]}.

IC ₅₀ & Target	AT1 Receptor	AT2 Receptor
In Vitro	<p>Most of the known actions of Angiotensin II (Ang II) human acetate are mediated by AT1 receptors, the AT2 receptor contributes to the regulation of blood pressure and renal function^[1].</p> <p>Angiotensin II human acetate 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 human acetate 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 (AT₁)^[2].</p> <p>Angiotensin II (1 nM) induces the expression of LOX-1 and VEGF and enhances capillary formation from human coronary endothelial cells in Matrigel assay. Angiotensin II -mediated expression of LOX-1 and VEGF, capillary formation, intracellular reactive oxygen species generation, and phosphorylation of p38 as well as p44/42 mitogen-activated protein kinases, were suppressed by anti-LOX-1 antibody, nicotinamide-adenine dinucleotide phosphate oxidase inhibitor apocynin and the Ang II type 1 receptor blocker Losartan, but not by the Ang II type 2 receptor blocker PD123319^[3].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>	
In Vivo	<p>Angiotensin II human (5 mL of 1 nM; intraperitoneal injection; 200-250 g Sprague-Dawley rats) acetate induces a significant neutrophil recruitment that was maximal at 4 hours and had resolved by 24 hours^[4].</p> <p>To distinguish the AT₁ receptor population that is critical for the pathogenesis of hypertension, osmotic minipumps are implanted s.c. into each animal to infuse Angiotensin II human (1000 ng/kg/min) acetate continuously for 4 weeks.</p> <p>Angiotensin II human acetate causes hypertension by activating AT₁ receptors in the kidney promoting sodium reabsorption^[5].</p> <p>Caution: Product has not been fully validated for medical applications. For research use only.</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>	

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CUSTOMER VALIDATION

- Cell Host Microbe. 2022 Oct 12;30(10):1450-1463.e8.
- Circ Res. 2020 Mar 13;126(6):e15-e29.
- ACS Nano. 2022 Aug 23;16(8):12553-12568.
- Sci Transl Med. 2021 Jul 21;13(603):eaaz4959.
- Nat Commun. 2022 Jul 25;13(1):4278.

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- [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.
- [4]. Hu C, et al. Angiotensin II induces capillary formation from endothelial cells via the LOX-1 dependent redox-sensitive pathway. Hypertension. 2007;50(5):952-957.
- [5]. Nabah YN, et al. Angiotensin II induces neutrophil accumulation in vivo through generation and release of CXC chemokines. Circulation. 2004;110(23):3581-3586.