

Name	Angiotensin I Acetate
Cat #	PP-1030
Size	1 mg, 5mg and bulk custom packages
CAS#	20071-00-5
Mol. Mass	1296.4
Formula	C ₄₉ H ₇₀ N ₁₄ O ₁₁
Sequence	Asp-Arg-Val-Tyr-Val-His-Pro-Phe-His-Leu-OH
Purity	>98%
Appearance	White to off white powder or lumps

General information:

Angiotensin is an oligopeptide in the blood that causes vasoconstriction, increased blood pressure, and release of aldosterone from the adrenal cortex. It is a hormone and a powerful dipsogen. It is derived from the precursor molecule angiotensinogen, a serum globulin produced in the liver. It plays an important role in the renin-angiotensin system which is a major target for drugs that lower blood pressure. Angiotensin also stimulates the release of aldosterone from the adrenal cortex. Aldosterone promotes sodium retention in the distal nephron, which also drives blood pressure up. Angiotensin was independently isolated in Indianapolis and Argentina in the late 1930s (as 'Angiotenin' and 'Hypertensin' respectively) and subsequently characterised and synthesized by groups at the Cleveland Clinic and Ciba laboratories in Basel, Switzerland

Angiotensin I (Asp-Arg-Val-Tyr-Ile-His-Pro-Phe-His-Leu)

Angiotensin I is formed by the action of renin on angiotensinogen. Renin is produced in the kidneys in response to both decreased intra-renal blood pressure at the juxtaglomerular cells, or decreased delivery of Na⁺ and Cl⁻ to the macula densa. If more Na⁺ is sensed, renin release is decreased. Renin cleaves the peptide bond between the leucine (Leu) and valine (Val) residues on angiotensinogen, creating the ten amino acid peptide (des-Asp) angiotensin I. Angiotensin I appears to have no biological activity and exists solely as a precursor to angiotensin II.

Angiotensin II (Asp-Arg-Val-Tyr-Ile-His-Pro-Phe)

Angiotensin I is converted to angiotensin II through removal of two terminal residues by the enzyme Angiotensin-converting enzyme (ACE, or kinase), which is found predominantly in the capillaries of the lung. ACE is actually found all over the body, but has its highest density in the lung due to the high density of capillary beds there. Angiotensin II acts as an endocrine, autocrine/ paracrine, and intracrine hormone. ACE is a target for inactivation by ACE inhibitor drugs, which decrease the rate of angiotensin II production. Angiotensin II increases blood pressure by stimulating the Gq protein in vascular smooth muscle cells (which in turn activates contraction by an IP3-dependent mechanism). ACE inhibitor drugs are major drugs against hypertension.

General References: Martin MM et al (1995) BBRC 209, 554-562; Chassagne C et al (1995) Genomics 25, 601-603; Koike G et al (1994) BBRC 203, 1842-50; Tsuzuki S et al (1994) BBRC 200, 1449-54; Martin MM et al (1994) BBRC 205, 645-651; Lazard D et al (1994) Receptor Channels 2, 271-280.

*This product is for in vitro research use only.

Related Items

PP-1030	Angiotensin I Acetate (Asp-Arg-Val-Tyr-Val-His-Pro-Phe-His-Leu-OH (1296.5)
PP-1040	Angiotensin II Acetate (Asp-Arg-Val-Tyr-Ile-His-Pro-Phe; 1046.18)
AT65-P-5	Human Angiotensin II, pure (bioactive)
AT66-P-5	Human Angiotensin II (1-4), pure (bioactive)
AT67-P-5	Human Angiotensin II (3-8), pure (bioactive)
AT68-P-5	Human Angiotensin II (4-8), pure (bioactive)
AT69-P-5	Human Angiotensin II (5-8), pure (bioactive)
AT75-P-5	Human Angiotensin III, pure (bioactive)
AT55-P-5	Human Angiotensin I, pure (bioactive)
AT56-P-1	Rat/Canine Angiotensin I, pure (bioactive)

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