ALPHA DIAGNOSTIC INTERNATIONAL

Product Specification Sheet

Cat. AT75-P-5 **Human Angiotensin III, pure (bioactive)** **SIZE:** 5 mg

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.

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.

Angiotensin III (Arg-Val-Tyr-Ile-His-Pro-Phe)

Angiotensin II is degraded to angiotensin III by angiotensinases that are located in red blood cells and the vascular beds of most tissues. It has a half-life in circulation of around 30 seconds, while in tissue. it may be as long as 15-30 minutes. Angiotensin III has 40% of the pressor activity of Angiotensin II, but 100% of the aldosterone-producing activity.

Angiotensin IV (Val-Tyr-Ile-His-Pro-Phe)

Angiotensin IV is a hexapeptide which, like angiotensin III, has some lesser activity.

Source of Ppetide

Sequence	Arg-Val-Tyr-Ile-His-Pro-Phe
MW	931.2
CAS	
Formula	$C_{46}H_{66}N_{12}O_9$
Disulfide Bridge	

References A.T. Chiu et al., Proc. Nat. Acad. Sci. USA, 71, 341 (1974)

Form & Storage of Antibodies/Peptide Control

Storage

Short-term: unopened, undiluted liquid vials at -20OC and powder at 4oC or -20oC..

Long-term: at –20C or below in suitable aliquots after reconstitution. Do not freeze and thaw and store working, diluted solutions.

Stability: 6-12 months at –20oC or below.
Shipping: 4oC for solutions and room temp for powder

General References: (1) Martin MM et al (1995) BBRC 209, 554-562; Chassagne C et al (1995) Genomics 25, 601-603; Koike G ett 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
Angiotensin I, II, and III and antibodies

Antibodies to angiotensin receptors type I and II

AT75-P-5 80602A

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