



Human ANP Polyclonal Antibody

Antigen Affinity-Purified Anti-Human ANP Rabbit Antibody
Catalog Number: GR126059

Background

Atrial natriuretic peptide (ANP) is a powerful vasodilator, and a protein hormone secreted by heart muscle cells. It is involved in the homeostatic control of body water, sodium, potassium and adipose tissue. It is released by atrial myocytes in response to high blood volume. ANP acts to reduce the water, sodium and adipose loads on the circulatory system, thereby reducing blood pressure. ANP has exactly the opposite function of the aldosterone secreted by the zona glomerulosa in regard to its effect on sodium in the kidney – that is, aldosterone stimulates sodium retention and ANP generates sodium loss.^[1] In cardiac myocytes, ANP is made as a precursor form, i.e. prepro-ANP, a polypeptide of 151 amino acids.^[2] After the signal peptide is removed in the endoplasmic reticulum, the 126-amino-acid pro-ANP is stored in the intracellular granules. When the cells are stimulated, pro-ANP is released and converted to the 28-amino-acid C-terminal mature ANP on the cell surface by the cardiac transmembrane serine protease corin.^[3] ANP interacts with three receptors including guanylyl cyclase-A (NPR1), guanylyl cyclase-B (NPR2), natriuretic peptide clearance receptor (NPR3). The binding of ANP to its receptor causes the conversion of GTP to cGMP and raises intracellular cGMP. Receptor-agonist binding causes a reduction in blood volume and, therefore, a reduction in cardiac output and systemic blood pressure. Lipolysis is increased and renal sodium reabsorption is decreased. The overall effect of ANP on the body is to counter increases in blood pressure and volume caused by the renin-angiotensin system. ANP and related peptides are used as biomarkers for cardiovascular diseases such as stroke, coronary artery disease, myocardial infarction and heart failure.^{[4][5][6]}

References

1. Goetz KL (1988). *The American Journal of Physiology*. 254 (1 Pt 1): E1–15.
2. Oikawa S et al. (1984) *Nature* 309(5970):724-726.
3. Yan W, et al. (2000). *PNAS* 97 (15): 8525–9.
4. Wang TJ, et al. (2004). *The New England Journal of Medicine*. 350 (7): 655–63.
5. Barbato E, et al. (2012). *International Journal of Cardiology*. 155 (2): 311–2.
6. Han ZJ et al (2015) *PLoS ONE* 10 (8), E0134376



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Description

Species reactivity: Human

Specificity: Detects human ANP in direct or indirect ELISAs and Western blots.

Source: Polyclonal rabbit IgG

Purification: Antigen Affinity purified

Immunogen: *E. coli* derived recombinant human ANP, Asn26 –Tyr151, and Accession # P01160.

Endotoxin Level: <0.10 EU per 1 µg of the antibody by the LAL method.

Formulation: lyophilized from a solution containing PBS and trehalose (100 µg/ml).

Application

Reconstitution: reconstitute at 0.2 mg/ml in sterile PBS

Recommended concentration:

Western blot: >0.1 µg/ml

Immunocytochemistry: 5-15 µg/ml

ELISA: 0.2-0.6 µg/ml

Stability & Storage

Use a manual defrost freezer and avoid repeated freeze-thaw cycles.

- 12 months at -20°C.
- 1 month after reconstitution at 4 °C, from date of receipt.
- 6 months after reconstitution at -20°C to -70°C from date of receipt.

DECLARATION

THIS REAGENT IS FOR IN VITRO LABORATORY TESTING AND RESEARCH USE ONLY. DO NOT USE IT FOR CLINICAL DIAGNOSTICS. DO NOT USE OR INJECT IT IN HUMANS AND ANIMALS.

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