

Natriuretic peptides A/NPPA Protein, Human (P. pastoris, His)

Cat. No.:	HY-P700563
Synonyms:	NPPA; natriuretic peptide A; ANP, natriuretic peptide precursor A, PND; natriuretic peptides A; atriopeptin; cardionatrin; prepronatriodilatin; natriuretic peptide precursor A; ANF; ANP; PND; ATFB6; CDD-ANF;
Species:	Human
Source:	P. pastoris
Accession:	P01160 (P78-L115)
Gene ID:	4878
Molecular Weight:	5.9 kDa

PROPERTIES

AA Sequence	P E V P P W T G E V S P A Q R D G G A L G R G P W D S S D R S A L L K S K L
Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.2 µm filtered solution of 20 mM Tris-HCl, 0.5 M NaCl, 6% Trehalose, pH 8.0.
Endotoxin Level	<1 EU/µg, determined by LAL method.
Reconstitution	It is not recommended to reconstitute to a concentration less than 100 µg/mL in ddH ₂ O.
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background	<p>Natriuretic peptides A/NPPA, vital in cardio-renal homeostasis, play diverse roles in vascular remodeling and energy metabolism. These peptides bind and stimulate NPR1, triggering cGMP production and activating downstream effectors, including PRKG1, to mediate various biological responses. Functionally, they regulate vasodilation, natriuresis, diuresis, and aldosterone synthesis, crucial for blood pressure regulation and fluid-electrolyte balance. In addition, they inhibit cardiac remodeling and hypertrophy by inducing cardiomyocyte apoptosis and restraining cell growth. During pregnancy, Natriuretic peptides A/NPPA promote trophoblast invasion and spiral artery remodeling, preventing pregnancy-induced hypertension. In adipose tissue, they regulate lipid metabolism and energy homeostasis through cGMP- and PKG-dependent pathways, influencing AMP-activated protein kinase (AMPK) and promoting UCP1-dependent thermogenesis in brown adipose tissue. The interaction with clearance receptor NPR3 contributes to their removal from circulation. While reports on their involvement in mammalian blood volume and pressure homeostasis vary, they enhance urine protein excretion by reducing proximal tubular protein reabsorption. Overall, Natriuretic peptides A/NPPA emerge as key players in maintaining physiological balance across multiple systems.</p>
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Caution: Product has not been fully validated for medical applications. For research use only.

Tel: 609-228-6898

Fax: 609-228-5909

E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA