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Antibodies to natriuretic peptides

Anti-Pro-Arterial natriuretic peptide (Pro-BNP) antibodies (PBNP-101AP)

The family of natriuretic peptides comprise of several 22-53 amino acid peptides with vasodilator and diuretic properties and play a pivotal role in cardiovascular homeostasis. The arterial natriuretic peptide (ANP) and the brain natriuretic peptide (BNP) are secreted as prohormones (Pro-ANP and Pro-BNP and their levels are significantly increases in non survival cardiacdysfunction patients (1). They are also useful as a laboratory markers for myocardial dysfunction and various other clinical conditions such as pulmonary thromboembolism, transient tachypnea, sepsis and stroke. The levels of these peptides may also differentiate between survival and non-survival acute sepsis. The human BNP gene is located on chromosome 1 and encodes the prohormone proBNP. The main stimulus for peptide synthesis and secretion is myocyte stretch. The cardiac myocytes are the major source of ProBNP, cardiac fibroblasts also produce the ProBNP. The release of BNP is under the control of several neurohormone. The biological effects include diuresis, vasodilatation, inhibition of renin and aldosterone production and of cardiac and vascular myocyte growth (2)

There has been growing interest in the use of serum B-type natriuretic peptide (BNP) and the N-terminal segment of its pro-hormone (NT-proBNP) as biomarkers for cardiac disease. Increased plasma concentrations of cardiac-derived B-type natriuretic peptide (BNP) and N-terminal pro-B-type natriuretic peptide (proBNP) are both associated with left ventricular dysfunction (3). BNP protects the heart from adverse consequences of overload by increasing natriuresis and diuresis, relaxing vascular smooth muscle, inhibiting the renin-angiotensin-aldosterone system, and by counteracting cardiac hypertrophy and fibrosis. Human cardiomyocytes synthesized BNP as a 108 amino acid prohormone (proBNP), which is cleaved to 32-amino acid BNP and the 76-residue N-terminal fragment(NT-proBNP). Serum levels of both fragments are good indicator of cardiac dysfunction, increased concentrations are strong predictors of recurring myocardial infarction, heart failure, and even death.

The ProANP protein is a approximately 18kDa (151 amino acids) protein. The Anti-ProANP-selective antibody was generated against a peptide from aa 104-123. The affinity purified mono-specific polyclonal antibody to ProANP strongly labels a 15-18 kDa protein in PC-PANP samples and in various tissues examined. *FabGennix Inc.* will also conjugate antibodies with fluorescent probes upon request at extra charge. *FabGennix Inc.* also provides antibodies against other natriuretic peptides like proBNP and others. *FabGennix Inc* employs cyclic peptide methodology for generating antibodies, which results in higher titer and specificity (6). *FabGennix, Inc.*, will also provide Western blot positive controls most of its antibodies in ready-to-use buffer for easy identification of respective proteins. Limited quantities of antigens/blocking peptides are also available. Please enquire for their availability before ordering.

Catalog #	Host Species	Nature	Cross reactivity	Quantity	Price
PBNP-101AP	Rabbit	Anti-Pro-BNP antibodies	H, R, M, monk	175 µl	235
P-BNP	n/a	Antigenic blocking peptide	n/a	250 ug	115
PC-PBNP	n/a	Western blot positive control	n/a	5 appl	185

R = rat; M = mouse; H = human; C = chicken; monk = monkey ; * not all variants are labeled equally

- Immunogen:** Synthetic peptide unique to Pro-BNP (human) sequence.
- Concentration:** PBNP-101AP IgG concentration 0.80-1.05 mg/ml.
- Applications:** Antibody PBP-101AP is ideal for IMM, IHC and WB. PBNP-101AP has not been tested in other applications. The dilutions for these antibodies are for reference only, investigators are expected to determine the optimal conditions for specific assay. WB; 1:500; IMM & i.p pull-down assays:> 1:200 (1 ul/250 ug protein extracts)
- Reactivity:** This antibody detects a single band of 16-17 kDa in PC-PBNP samples. The antibody also reacts to a 18 kDa protein in various tissues expressing Pro-BNP protein.
- Protocols:** Standard protocol for various applications (WB, IMM and IHC) of this antibody is provided with the product specification sheet, however, *FabGennix Int. Inc.*
- Form/Storage:** The antiserum is supplied in antibody stabilization buffer with 0.02% sodium azide. For long-term storage of antibodies, store at -20°C. *FabGennix Int. Inc.* does not recommend storage of very dilute antibody solutions unless they are prepared in specially formulated multi use antibody dilution buffer (Cat # DilUbuffer). Working solutions of antibodies in DilUbuffer should be filtered through 0.45 µm filter after every use for long-term storage.

References:

- Hoffmann U, Brueckmann M, Bertsch T, Wiessner M, Liebetrau C, Lang S, Haase KK, Borggrefe M, Huhle G. Increased plasma levels of NT-proANP and NT-proBNP as markers of cardiac dysfunction in septic patients. *Clin Lab.* 2005;51(7-8):373-9.
- Hall C. Essential biochemistry and physiology of (NT-pro)BNP. *Eur J Heart Fail.* 2004 Mar 15;6(3):257-60. Related Articles, Links
- Goetze JP, Jensen G, Moller S, Bendtsen F, Rehfeld JF, Henriksen JH. BNP and N-terminal proBNP are both extracted in the normal kidney. *Eur J Clin Invest.* 2006 Jan;36(1):8-15. Related Articles, Links

Announcements: A new ProANP Antibody (Cat # PANP-101AP) is now available from FabGennix International Inc. This antibody is raised against a synthetic peptide corresponding to unique regions on ProANP protein.

*For users who may require large amounts of PBNP-101AP, please enquire about bulk material discounts.
This Product is for Research Use Only and is NOT intended for use in humans or clinical diagnosis.

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