

Technical Information

NT-proCNP

Cat. No.:	BI-20812
Tests:	96
Method:	ELISA
Range:	0 – 128 pmol/l
LLOQ:	0.5 pmol/l (STD2 4 pmol/l)
Incubation time:	20 min / 3 h / 30 min
Sample volume:	20 µl
Sample type:	Serum, plasma, urine, cell culture supernatant
Sample preparation:	Centrifuge freshly collected blood as soon as possible Store centrifuged samples at -20°C for longer storage. Samples are stable up to 4 freeze and thaw cycles. Hemolyzed or lipemic samples may cause erroneous results.

Reference values:	Median serum (n=32) = 14.5 pmol/l Median EDTA plasma (n=33) = 15 pmol/l Median heparin plasma (n=18) = 13.5 pmol/l Median citrate plasma (n=18) = 12 pmol/l
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Species: Human. Cross-reacts with: mouse, rat, pig, monkey.

Intended use:

C-type natriuretic peptide (CNP) is a paracrine growth factor widely expressed in tissues, including the vascular endothelium, where it is considered to provide vasoprotective functions. In endothelial cells and macrophages it is secreted in response to several stimuli, including inflammatory mediators. CNP is rapidly degraded in tissues and negligible quantities enter the circulation. However, the N-terminal portion of the pro-hormone is not degraded at source and circulates in significantly higher concentrations than CNP. Therefore NT-proCNP is a valuable biomarker to determine CNP synthesis in tissues. CNP plays a critical role in linear growth. It is produced in the growth plate and signals through a paracrine mechanism. Recent studies have shown that the plasma concentrations of NTproCNP correlate with linear growth velocity in all phases of skeletal growth and increase during rhGH therapy (1). Furthermore, serum NT-proCNP levels increased after initiation of GH treatment in patients with achondroplasia/ hypochondroplasia (2). Women with pregnancy complications, such as diminished fetal growth and pre-eclampsia show significantly increased NT-proCNP levels early in gestation (3, 4). NT-proCNP concentration at hospital admission has sufficient sensitivity and specificity to differentiate naturally occurring sepsis from non-septic systemic inflammatory response syndrome (SIRS) (5, 6). Recently, Prickett and colleagues demonstrated in a cohort of over 2000 individuals, that in contrast to the close association of NT-proBNP with cardiac function, and predictive value for outcome after myocardial infarction, plasma NT-proCNP is highly correlated with renal function and is an independent predictor of mortality and cardiac readmission in individuals with unstable angina (7).

Intended applications:

- Vascular disease
- Growth
- Skeletal development
- Angiogenesis
- Sepsis

Literature:

1. Dynamic response of C-type natriuretic peptide and its aminoterminal propeptide (NTproCNP) to growth hormone treatment in children with short stature. Olney RC et al., Clin Endocrinol, 2016; 85(4):561-568.
2. Serum NT-proCNP levels increased after initiation of GH treatment in patients with achondroplasia/hypochondroplasia. Kubota T et al., Clin Endocrinol (Oxf), 2016; 84(6):845-850.
3. C-type natriuretic peptide in complicated pregnancy: increased secretion precedes adverse events. Reid RA et al., J Clin Endocrinol Metab, 2014; 99(4):1470-1478.
4. Effects of pre-eclampsia and fetal growth restriction on C-type natriuretic peptide. Espiner, E A et al., BJOG, 2015; 122:1236-1243.
5. Prognostic value of circulating amino-terminal pro-C-type natriuretic peptide in critically ill patients. Koch et al., Critical Care, 2011; 15:R45.
6. The prognostic value of concomitant assessment of NT-proCNP, C-reactive protein, procalcitonin and inflammatory cytokines in septic patients. Tomasiuk R et al., Crit Care, 2014; 25;18(3):440.
7. C-Type Natriuretic Peptides in Coronary Disease. Prickett TCR et al., Clin Chem, 2017; 63(1):316-324.
8. The natriuretic peptides system in the pathophysiology of heart failure: from molecular basis to treatment. Volpe M et al., Clinical Science, 2016; 130:57-77.

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A EUROBIO SCIENTIFIC COMPANY

Switzerland / Headquarters
TECO medical AG
Gewerbstrasse 10
4450 Sissach
Phone +41 61 985 81 00
Fax +41 61 985 81 09
Mail info@tecomedical.com

Germany
TECO medical GmbH
Wasserbreite 57
32257 Bünde
Phone +49 52 23 985 99 99
Fax +49 52 23 985 99 98
Mail info@tecomedical.com

Benelux
TECO medical Benelux BV
Prins Willem-Alexanderlaan 301
7311 SW Apeldoorn, The Netherlands
Phone +31 30 307 87 30
Fax +31 30 307 49 39
Mail benelux@tecomedical.com

Austria
TECO medical AG
Phone 0800 20 40 66
Fax 0800 20 40 55
Mail info@tecomedical.com