

DESCRIPTION

Source	Human embryonic kidney cell, HEK293-derived human NPRC/NPR3 protein		
	Human NPRC/NPR3 (Thr24-Glu481) Accession # P17342.2	IEGRMD	Human IgG ₁ (Pro100-Lys330)
	N-terminus		C-terminus
N-terminal Sequence	Thr24 & Glu46		
Analysis			
Structure / Form	Disulfide-linked homodimer		
Predicted Molecular Mass	77 kDa & 75 kDa		

SPECIFICATIONS

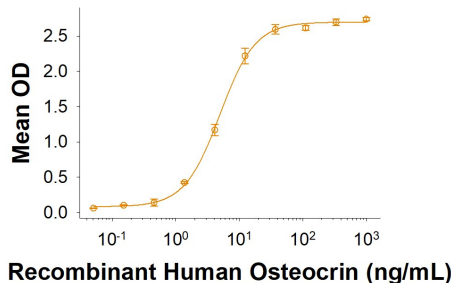
SDS-PAGE	78-92 kDa
Activity	Measured by its binding ability in a functional ELISA. When Recombinant Human NPRC/NPR3 Fc Chimera is immobilized at 2 µg/mL (100 µL/well), the concentration of Recombinant Human Osteocrin (Catalog # 9669-ON) that produces 50% of the optimal binding response is 2-20 ng/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 500 µg/mL in PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. <ul style="list-style-type: none"> • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 3 months, -20 to -70 °C under sterile conditions after reconstitution.

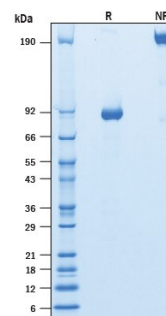
DATA

Binding Activity



When Recombinant Human NPRC/NPR3 Fc Chimera (Catalog # 10233-NR) is immobilized at 2 µg/mL, Recombinant Human Osteocrin (Catalog # 9669-ON) binds with an ED₅₀ of 2-20 ng/mL.

SDS-PAGE



2 µg/lane of Recombinant Human NPRC/NPR3 Fc Chimera was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 78-92 kDa and 160-200 kDa, respectively.

BACKGROUND

Atrial Natriuretic Peptide Receptor-3 (NPR3), also known as NPRC or ANPR-C, is one of the three natriuretic peptide receptors (1, 2). Mature human NPR3 is a type I transmembrane glycoprotein that contains a 455 amino acid (aa) extracellular domain (ECD), a 23 aa transmembrane segment, and a 37 aa cytoplasmic region. Within the ECD, human NPR3 shares 92% aa sequence identity with mouse and rat NPR3. The natriuretic system is key to the maintenance of vascular tone and cardiovascular homeostasis. It consists of three related natriuretic peptides: atrial natriuretic peptide (ANP), brain natriuretic peptide (BNP), and C-type natriuretic peptide (CNP). It also consists of three single-membrane-spanning receptors (NPRs) to mediate the biological activity of these peptides: NPR1, NPR2, and NPR3. NPR1 and NPR2 are guanylyl cyclase receptors that regulate cGMP levels, while NPR3 lacks enzymatic activity and may act as a clearance receptor (1, 2). Both ANP and BNP exhibit high binding affinities to NPR1 and NPR3, while CNP binds with high affinity to NPR2 and NPR3 (2). NPR3 is known to be expressed in the heart, lung, adrenal gland, heart, cerebral cortex, cerebellum, liver and adipocytes and in some cancers (1, 2). Osteocrin was found to be a specific ligand to NPR3 (3). NPR3 is necessary for Osteocrin to regulate femoral, tibial, and metatarsal bone elongation (4).

References:

1. Potter, L.R. *et al.* (2006) *Endocr. Rev.* **27**:47.
2. Koller, K. J. and D. V. Goeddel (1992) *Circulation* **86**:1081.
3. Thomas, G. *et al.* (2003) *J. Biol. Chem.* **278**:50563.
4. Moffatt, P. *et al.* (2007) *J. Biol. Chem.* **282**:36454.