

PINP (N-Terminal Propeptide of Type I Collagen) - RIA

Analyte: Aminoterminal Propeptide of Type I Collagen

Specimen Type: Serum

Optimum Volume: 1.0 mL

2-8°C **-20°C** **-70°C**

5 days 2 years 2 years

Reporting units: ng/mL

Method: RIA

Biological or Clinical Significance:

Collagen type I is present in soft connective tissues and bone, where it constitutes more than 90% of the organic matrix. During bone formation, collagen type I is synthesized from procollagen type I, which is secreted from fibroblasts and osteoblasts. Type I procollagen contains N- and C-terminal extensions which are removed by specific proteases during the conversion of procollagen to collagen. The extensions are referred to as the C- and N- terminal propeptides of procollagen type I (PICP and PINP). Thus, measurements of PINP can be of value in monitoring bone formation. The molecular heterogeneity of PINP makes considerations in relation to assay technology more complicated. The alpha-chains of PINP are found in all biological fluids in both trimeric and monomeric form and at 37 °C a thermal transition takes place that is an ongoing process in vivo.

Principle of Test Method:

The PINP RIA kit is based on the competitive radioimmunoassay principle. A known amount of labeled PINP and an unknown amount of unlabelled PINP in the sample compete for the limited number of high affinity binding sites of the antibody. After separating the free antigen, the amount of labeled PINP in the sample tube is inversely proportional to the amount of PINP in the sample. The concentrations in unknown samples are obtained from a calibration curve.

References:

1. Garnero, P., Vergnaud, P., Hoyle, N., "Evaluation of Fully Automated Serum Assay for

Total N-Terminal Propeptide of Type I Collagen in Postmenopausal Osteoporosis” Clin Chem. 2008; 54:1 pg 188-196.