Type I Procollagen N-terminal Peptide; P1NP

Monitoring patients on treatment for osteoporosis

**Pseudonyms:** Procollagen type 1 amino-terminal propeptide.

**General information**

**Collection container:** Serum with gel separator (Sarstedt brown top, 4.9mL adults / 1.1 mL paediatrics) or Serum (Sarstedt white top, 1.2 mL paediatrics only) or Lithium heparin plasma (Sarstedt orange top, 4.9 mL adults / 1.2 mL paediatrics)

**Type and volume of sample:** 1.0 mL whole blood is required as a minimum volume.

**Specimen transport/special precautions:** The tubes should be thoroughly mixed before transport to the lab.

**Laboratory information**

**Method principle:** PINP is analysed on an automated instrument using a chemiluminescent immunoassay.

**Biological reference ranges:** 27-128 μg/L

**Turnaround time:** 10 days

**Clinical information**

Type 1 collagen is the major collagen in the body and is mainly found in mineralised bone. It has a triple helical structure consisting of one α1 and two α2 chains which are linked by disulphide bonds. The molecule is synthesised as procollagen which is proteolytically cleaved to remove both the N- and C-terminal parts of the molecule prior to the assembly of the remainder into the collagen matrix. The N- and C-terminals are released into the circulation stoichiometrically and thus reflect the synthesis of new type 1 collagen. The N- and C-terminals are released into the circulation stoichiometrically and thus reflect the synthesis of new type 1 collagen. A number of studies have demonstrated a good correlation between serum levels of PINP and bone density and it is recommended for use in the assessment of bone turnover in osteoporosis. PINP is heterogeneous and exists in 2 antigenic forms with different molecular weights. The IDS ISYS assay is specific for the larger intact propeptide which is catabolised by hepatic endothelial cells. The smaller propeptide is cleared by the kidneys but does not cross react in this assay.

**Factors known to significantly affect the results:** Grossly haemolysed samples are unsuitable for analysis.

(Last reviewed 29th February 2016)