



### Intact PTH

For *In Vitro* Diagnostic Use

The MicroVue PTH EIA measures the amount of intact Parathyroid Hormone (PTH) in experimental samples.

PTH (Parathyroid hormone, Parathormone, Parathyrin) is biosynthesized in the parathyroid gland as a pre-proparathyroid hormone, a larger molecular precursor consisting of 115 amino acids. Following sequential intracellular cleavage of a 25 amino acid sequence, pre-proparathyroid hormone is converted to an intermediate, a 90 amino acid polypeptide, parathyroid hormone. With additional proteolytic modification, parathyroid hormone is then converted to parathyroid hormone, an 84 amino acid polypeptide.

In healthy individuals, regulation of parathyroid hormone secretion normally occurs via a negative feedback action of serum calcium on the parathyroid glands. Intact PTH is biologically active and clears very rapidly from the circulation with a half-life of less than four minutes. Intact PTH assays are important for the differentiation of primary hyperparathyroidism from the other (nonparathyroid-mediated) forms of hypercalcemia, such as malignancy, sarcoidosis and thyrotoxicosis. The measurement of parathyroid hormone is the most specific way of making the diagnosis of primary hyperparathyroidism. In the presence of hypercalcemia, an elevated level of parathyroid hormone virtually establishes the diagnosis. In over 90% of patients with primary hyperparathyroidism, the parathyroid hormone will be elevated.

#### Format

- ELISA
- 96-well microplate with reagents sufficient to test 40 samples in duplicate
- Sample type: Serum, plasma or other experimental samples
- Controls included

#### Species Reactivity

- Human

#### Specimen

- Samples collected to avoid hemolysis

#### Assay Steps

- Dilute Wash Buffer; reconstitute Standard and Controls
- Pipette 25  $\mu$ L of Standards, Control and samples into assay wells
- Add 50  $\mu$ L of Biotin Labeled Antibody and 50  $\mu$ L of Enzyme Labeled Antibody to each well
- Incubate 3 hours  $\pm$  30 minutes at 22°C to 28°C with shaking
- Wash the assay wells five times
- Pipette 150  $\mu$ L Substrate Solution
- Incubate 30  $\pm$  5 minutes at 22°C to 28°C with shaking
- Add 100  $\mu$ L of Stop Solution to each assay well
- Measure absorbance at 450 nm and again at 405 nm

#### Assay Performance

**Method:** ELISA

**Analyte:** Intact PTH

**Specimen Volume:** 25  $\mu$ L

**Limit of Detection:** 1.57 pg/mL

**Assay Range:** 0-700 pg/mL

**Precision (inter-assay):** 2.8%-3.6%

**Precision (intra-assay):** 3.7%-6.1%

**Assay Time:** Approx. 4 hours

