Technical Data Sheet

Calcitonin

For In Vitro Diagnostic Use

The MicroVue Calcitonin EIA is intended for the quantitative determination of Calcitonin in human serum.

Calcitonin, a 32-amino-acid polypeptide, is secreted primarily by the thyroidal parafollicular C-cells. Its main biological effect is to inhibit osteoclastic bone resorption. This property has led to Calcitonin’s use for disorders characterized by increased resorption, such as Paget’s disease, for some patients with osteoporosis.

The most prominent clinical syndrome associated with a disordered hypersecretion of Calcitonin is medullary carcinoma of the thyroid (MTC). MTC is a tumor of the Calcitonin producing C-cells of the thyroid gland. Although MTC is rare, comprising 5%-10% of all thyroid cancer, it is often fatal. It can occur sporadically or in a familial form that is transmitted as an autosomal dominant trait. Further, it can be diagnosed early by serum Calcitonin and total cure for sub-clinical disease is possible. These tumors usually produce diagnostically elevated serum concentrations of Calcitonin. Therefore the immunoassay for Calcitonin in serum can be used to diagnose the presence of MTC with an exceptional degree of accuracy and specificity.

Increases in serum Calcitonin has also been noted in both acute and chronic renal failure, hypercalciuria and hypercalcemia.

Format

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

Species Reactivity

- Human specimen

Specimen

- Samples collected to avoid hemolysis

Assay Steps

- Dilute Wash Buffer; reconstitute Standard and Controls
- Pipette 100 µL of Standards, Control and samples into assay wells
- Add 50 µL of Biotin Labeled Antibody and 50 µL of Enzyme Labeled Antibody to each well
- Incubate 4 hours ± 30 minutes at 22°C to 28°C with shaking
- Wash the assay wells 5 times
- Pipette 150 µL Substrate Solution
- Incubate 30 ± 5 minutes at 22°C to 28°C with shaking
- Add 100 µL of Stop Solution to each assay well
- Measure absorbance at 450 nm and again at 405 nm

Assay Performance

- Method: ELISA
- Analyte: Calcitonin
- Specimen Volume: 100 µL
- Limit of Detection: 1.0 pg/mL
- Assay Range: 0-1000 pg/mL
- Precision (inter-assay): 2.8%-5.7%
- Precision (intra-assay): 6.1%-7.4%
- Assay Time: Approx. 5 hours

MicroVue Calcitonin EIA – Catalog #8043

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