



## **MEDULLARY THYROID CANCER**

IRMA-HCT

- Human Calcitonin

# Human Calcitonin

(Reference IRMA-HCT)

## ■ Clinical interest

Calcitonin, a small peptide of 32 amino acids, is involved in calcium homeostasis. It is known to inhibit bone resorption.

Medullary thyroid carcinoma (MTC) arises from C-cells that produce human calcitonin (hCT). MTC occurs either in sporadic or in familial forms. It accounts for 5-10% of all thyroid cancers.

Calcitonin is the most sensitive and accurate marker of MTC. Elevated basal calcitonin concentrations are found in cases of Medullary Thyroid Cancer, C-cell hyperplasia and in some tumours (bronchial and intestinal carcinoma, APUD system tumours). On the other hand, hCT levels are also known to be high in about 30% of patients suffering from chronic kidney disease.

The Pentagastrin stimulation test (Pg test) is carried out to differentiate MTC from C-cell hyperplasia. This Pg test is highly valuable in detecting patients affected in cases of hereditary pathology.

Basal hCT measurements and Pg stimulation tests are routinely performed in the post operative follow-up of thyroidectomized patients and subsequently to localize suspected recurrences and/or metastases. The calcitonin doubling time seems to be a powerful prognosis factor in MTC-affected subjects.

A reliable tumour marker  
to diagnose and follow  
medullary thyroid cancer



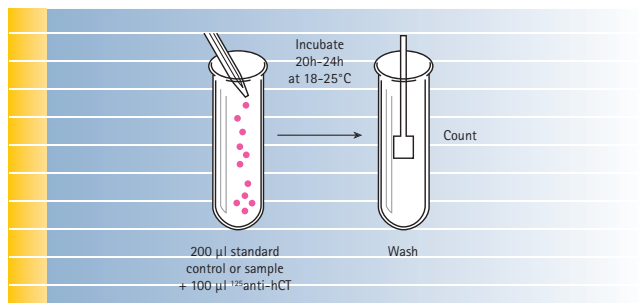
## ■ Principle of the test

Immunoradiometric assay using:

Two monoclonal antibodies for a specific assay of **native monomeric calcitonin**: 23-32 amide and 11-17 regions are recognized by the MABs.

## ■ Protocol

- One step immunoradiometric assay, using two monoclonal specific antibodies



## ■ Characteristics

- Standardization: Data are expressed in pg/mL
- Working range: 0-1500 pg/mL
- Specificity:
  - MAbs directed against the 23-32 and 11-17 regions
  - Specific assay of native monomeric calcitonin
  - No cross reactivity with pro-calcitonin
- Sensitivity:
  - Detection limit 1.5 pg/mL
  - Functional sensitivity 4 pg/mL
- Convenience:
  - A new lot every two weeks
  - Availability of a control set with nominal value below 10 pg/ml (ref IRMA-HCT-C6)

## ■ Reference range\*

- Females: < 7 pg/mL
- Males: < 12 pg/mL

\* Smokers or past smokers could exhibit significantly elevated seric hCT

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