



# Chromogranin A

A reliable neuroendocrine  
tumour marker

# Chromogranin A

## Biology and functions

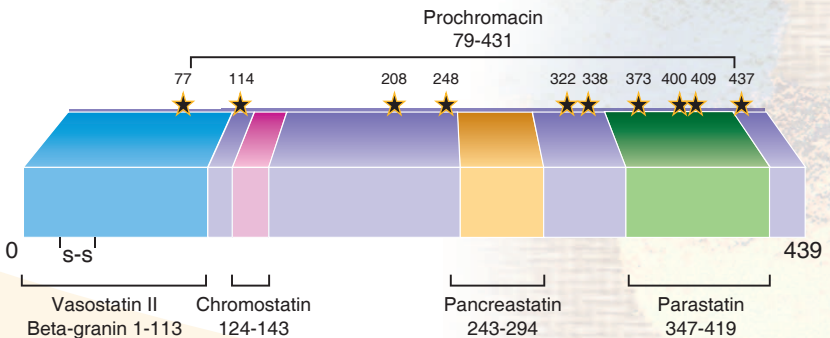
Chromogranin A is an acidic, hydrophilic protein of 439aa (49kD), present in chromaffin granules of the neuroendocrine cells. It is a member of the granin family. CgA acts as a pro-hormon. Its proteolysis constitutes a key element of its physiology. This degradation releases biologically active peptides (vasostatins, chromostatin, pancreastatin, parastatin...) which have different paracrine and autocrine functions.

Circulating CgA exists in healthy subjects and the values obtained are independent of age and sex.

CgA is the most accurate marker of neuroendocrine tumours.

### Human CgA sequence and position of the different epitopes.

Stars and corresponding numbers indicate the dibasic cleavage sites. <sup>(1)</sup>



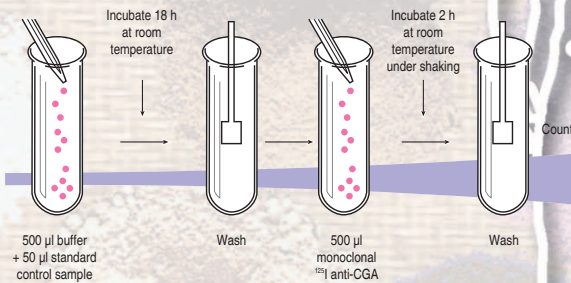
# CGA-RIACT:

## Principle of the test

2 monoclonal antibodies are used as a sandwich and are directed against the central domain of the molecule (145-245) which is less sensitive to proteolysis.

One antibody is coated on the tube, the second one radiolabeled with iodine 125 is used as a tracer.

## Protocol

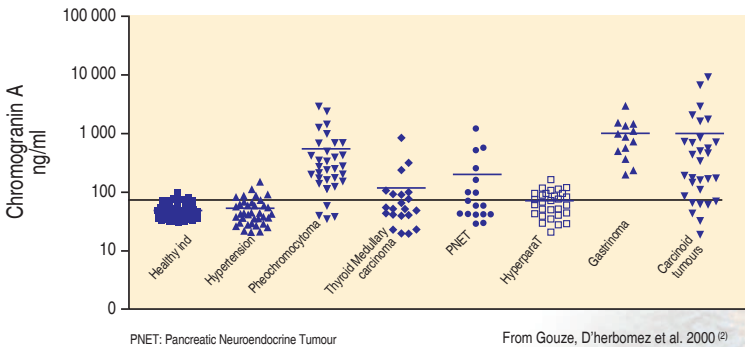


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## Clinical interest of CgA

### Neuroendocrine tumours

#### Performances



The most significant results have been obtained on the following pathologies with the corresponding sensitivity.

Group of tumours	Sensitivity
Phaeochromocytoma	87.5
Gastrinoma	100
Carcinoid tumour	77

#### Diagnosis and follow-up

In foregut-derived neuroendocrine tumours CgA assay is the most sensitive compared to the reference markers (3).

In phaeochromocytoma (3) (4) (5) and in ileum Neuroendocrine Tumour (3), CgA assay demonstrates a good correlation with the reference markers.

Tumour burden and secretory activity should be taken into account when interpreting CgA results.

Seric CgA test is a good alternative to the urinary sampling of the reference markers.

## Prostate cancer

### Adverse prognostic factor

CgA reflects the neuroendocrine activity of prostate carcinoma.

The increase of CgA level in patients affected by advanced and/or relapsing prostatic cancer is the sign of unfavorable evolution of the disease.

CgA is an adverse prognostic factor which helps in therapeutic choice.

## Characteristics

**Standard range:** 0-1200 ng/ml

**Sample:** Serum/Plasma

**Specificity:** Increase of circulating CgA level in case of renal failure, hypergastrinemia, steroids treatment

**Detection limit:** 1.5 ng/ml

**Shelf life:** 7 weeks

## Normal values

n=50

	<b>Range</b> (ng/ml)	<b>Mean value</b> (ng/ml)	<b>Median</b> (ng/ml)
<b>Serum</b>	10 – 100	36 +/- 18	32
<b>Plasma EDTA</b>	20 – 150	65 +/- 34	56



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## Bibliography

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# Advantages

## Highly specific:

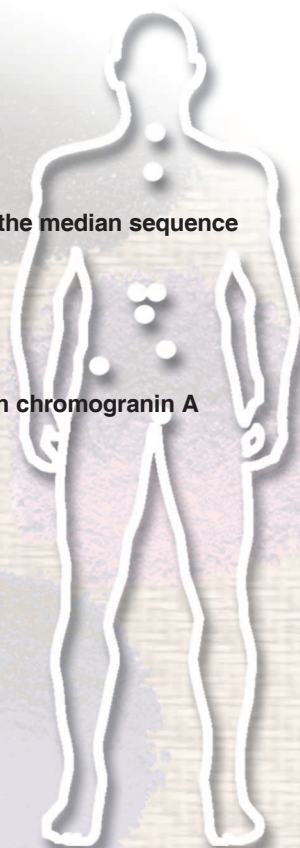
Antibodies directed against the median sequence of the molecule (145-245)

## Easy to handle:

Determination of total human chromogranin A in serum or plasma

## Highly sensitive:

Detection limit, 1.5 ng/ml





## **Cisbio Bioassays**

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