

Oncology

# Fast, precise, efficient monitoring of neuroendocrine tumors

B·R·A·H·M·S CgA II KRYPTOR

**Measure CgA**  
Now FDA cleared

# Chromogranin A (CgA) – Marker for neuroendocrine tumors

## Function of CgA as prohormone

The chromogranins comprise an entire family of glycoproteins, of which chromogranin A (CgA) and chromogranin B (CgB) are the best-known representatives. CgA is produced in high concentrations in endocrine and neuroendocrine cells, e.g. in the pancreas, stomach and intestines.<sup>3</sup>

Its biological function has not yet been determined conclusively, but it is believed that CgA is a prohormone. The precursor molecule CgA is made up of several bioactive peptides such as chromostatin, pancreastatin and catestatin, which appear individually once it has been proteolytically processed by a variety of proteases.<sup>4</sup>

CgA and its proteolytic fragments are secreted from the tissue into the blood. Therefore, CgA is increasingly important as a marker for endocrine cells and neuroendocrine tumors (NETs).<sup>4</sup>

## Clinical utility of CgA in neuroendocrine tumors (NETs)

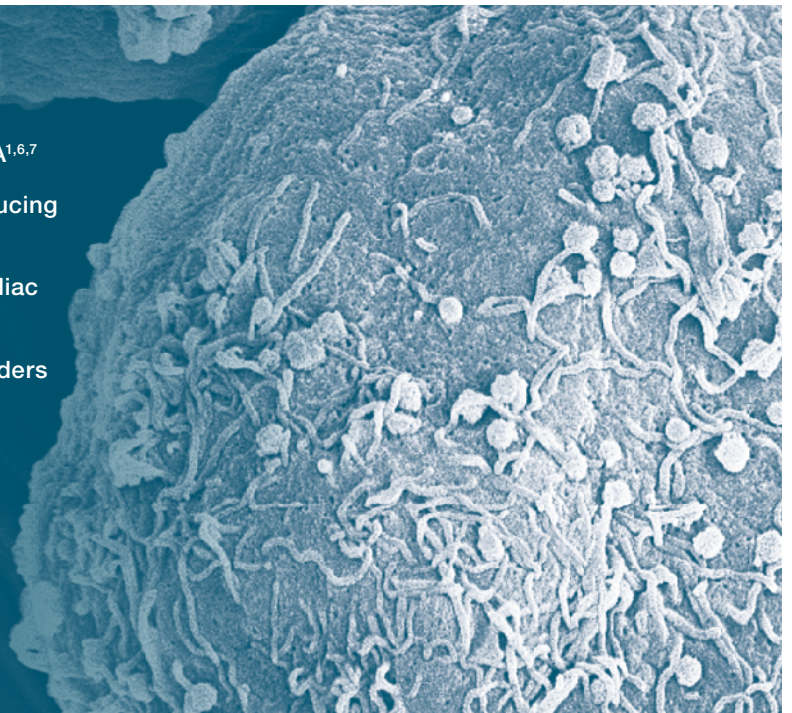
CgA elevations occur in diverse NETs but are usually more pronounced in gastroenteropancreatic NETs (GEP-NETs; small intestinal, gastric, and pancreatic NETs). CgA elevations may occur in carcinomas with a complete or a partial neuroendocrine phenotype (Figure 1).<sup>3</sup>

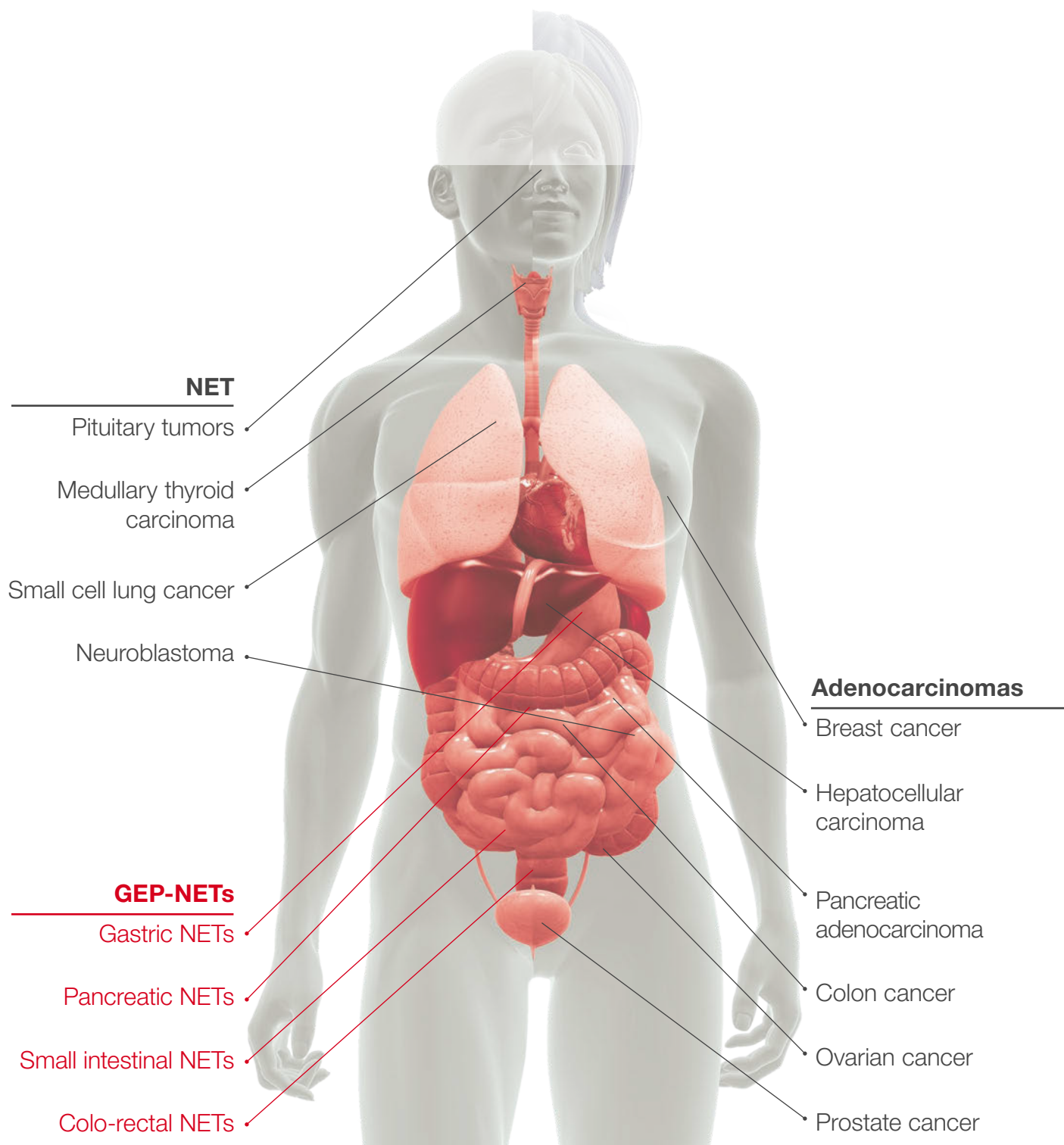
### Particular strengths of CgA as a serum tumor marker include:<sup>4</sup>

- It is already part of the established monitoring procedure for grade 1 and 2 (G1/G2) GEP-NETs<sup>5</sup>
- It can be used to track further progression of the tumor disease
- It presents the option of evaluating the success of a treatment

### When using CgA, consider:

- Patients who are being treated with proton pump inhibitors (e.g. gastritis) may have an elevated CgA<sup>1,6,7</sup>
- Renal failure may increase detectable CgA by reducing glomerular filtration of CgA-related peptides<sup>1,6,7</sup>
- Patients with chronic/acute inflammation and cardiac insufficiency may have an elevated CgA<sup>3</sup>
- Patients with non malignant gastrointestinal disorders (e.g. pancreatitis, chronic hepatitis) may have an elevated CgA<sup>3</sup>





**Figure 1:** Neoplastic causes of elevated CgA (adapted from Lawrence et al.<sup>9</sup>)

# First and only fully automated CgA assay

## Shortest time to result

Thermo Scientific™ B·R·A·H·M·S™ KRYPTOR™ compact PLUS, a fully automated random access analyzer, provides fast, reproducible results and is significantly less labor intensive than other available CgA assays.<sup>2</sup>

When assessing response to therapy and disease burden, clinicians expect results in a timely manner. Thermo Scientific B·R·A·H·M·S CgA II™ KRYPTOR results are **available within 29 minutes** (Figure 2) and can be reported to clinicians the same day. Laboratories can now provide clinicians with a reliable indicator to monitor disease progression during the course of disease and treatment in patients with gastroenteropancreatic neuroendocrine tumors (GEP-NETs, grade 1 and grade 2).

## Superior precision

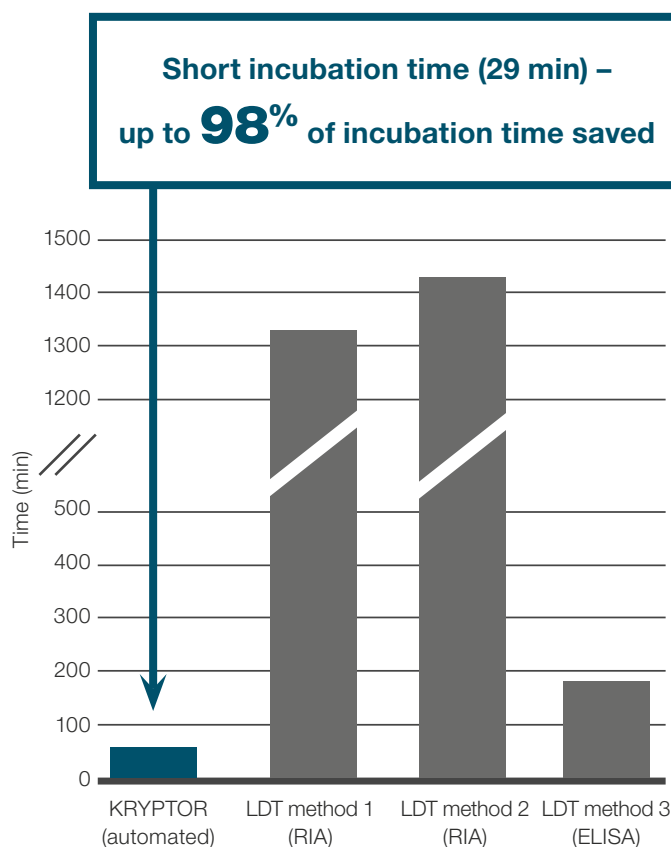
B·R·A·H·M·S CgA II KRYPTOR, like all B·R·A·H·M·S KRYPTOR assays, provides exceptional intra- and interassay precision due to homogeneous assay design without any washing or separation step.

The extraordinary assay precision supports confident decision making on the patients clinical status and further diagnostic measures for optimal patient management.

**First and only  
FDA cleared  
CgA assay**



B·R·A·H·M·S KRYPTOR compact PLUS

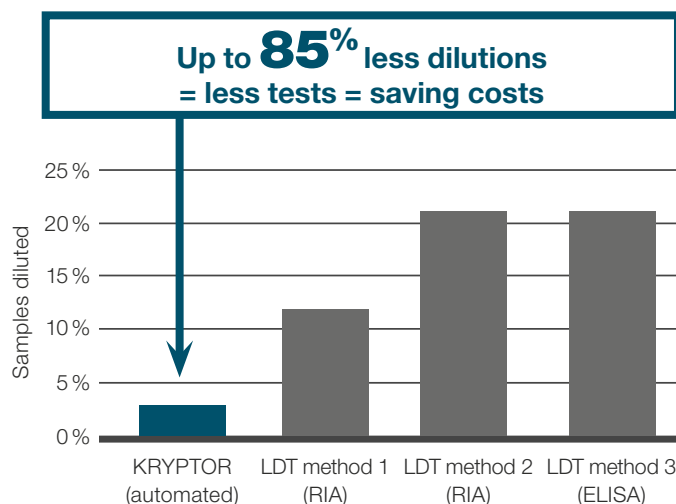


**Figure 2:** Incubation time (min) of various CgA assays

### Broad measuring range

Each dilution requires an extra determination. On B·R·A·H·M·S KRYPTOR analyzers, less samples have to be diluted compared to other currently available assays because of the broader direct measuring range (Figure 3).

The B·R·A·H·M·S CgA II KRYPTOR assay therefore meets the challenge to provide reliable results over a wide range, **vastly improving the assessment of patients receiving treatment regimes for NETs.**<sup>2</sup>



**Figure 3:** Ratio of samples that require dilution in a representative clinical setting. data on file

“It really has been difficult in the clinic for the last decades to have different results mean different things because everyone is using their own lab defined test. [With FDA clearance of B·R·A·H·M·S CgA II KRYPTOR] **We now can deal with a standardized test** that is deployed the same way in labs across the country with an identical reference range. **This adds uniformity and reproducibility.**”

Clinical CgA expert



## Unequalled clinical value in the follow-up of GEP-NET patients

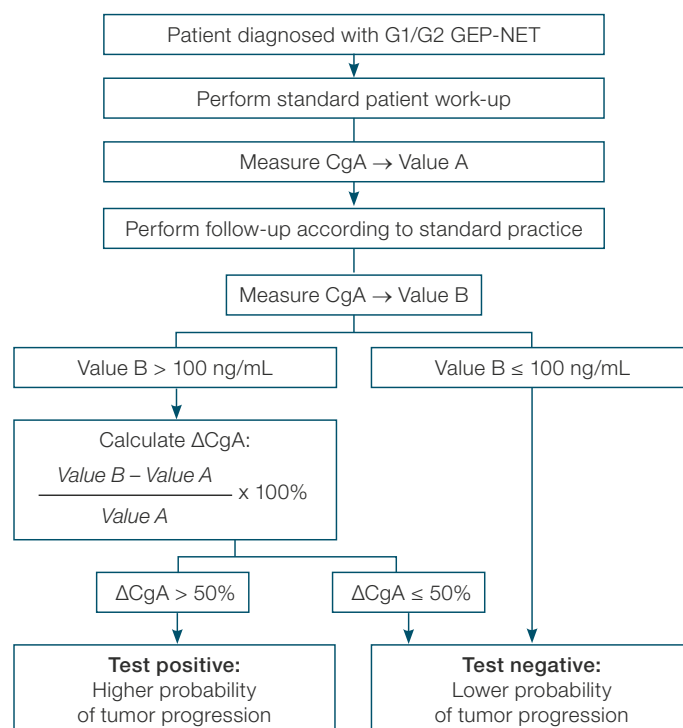
### Unique clinical cut-off

In a recent prospective multi-center study, a unique clinical cut-off has been established for B-R-A-H-M-S CgA II KRYPTOR.

Change of serum B-R-A-H-M-S CgA II KRYPTOR results was calculated from two consecutive measurements within a typical routine monitoring interval of 3-6 months. The results were considered positive if serum levels increased by >50% to an absolute value > 100 ng/mL.

Based on the comparison with RECIST 1.1 criteria a positive change of the B-R-A-H-M-S CgA II KRYPTOR level was significantly associated with tumor progression (NPV = 84.3%; PPV = 57.9%).<sup>data on file</sup>

**B-R-A-H-M-S CgA II KRYPTOR provides a clear guidance for interpretation of results in the follow-up of G1/G2 GEP-NET patients.**



**Figure 4:** Unequalled clinical value in the follow-up of G1/G2 GEP-NET patients

### References

Comprehensive summary of performance can be found in the Instructions for Use for each assay or in the User Manual of your KRYPTOR instrument.

1. Bajetta E *et al.* Cancer 1999; 86: 858-65
2. Inman Z *et al.* AACB Meeting 2012 Melbourne, Poster P85
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4. Modlin IM *et al.* Ann Surg Oncol 2010;17(9): 2427-43
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6. Trapé J *et al.* Clin Chem Lab Med 2011; 49(10): 1605-20
7. Vezzosi D *et al.* Int J Biol Markers 2011; 26(2): 94-101

Clinical Diagnostics

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