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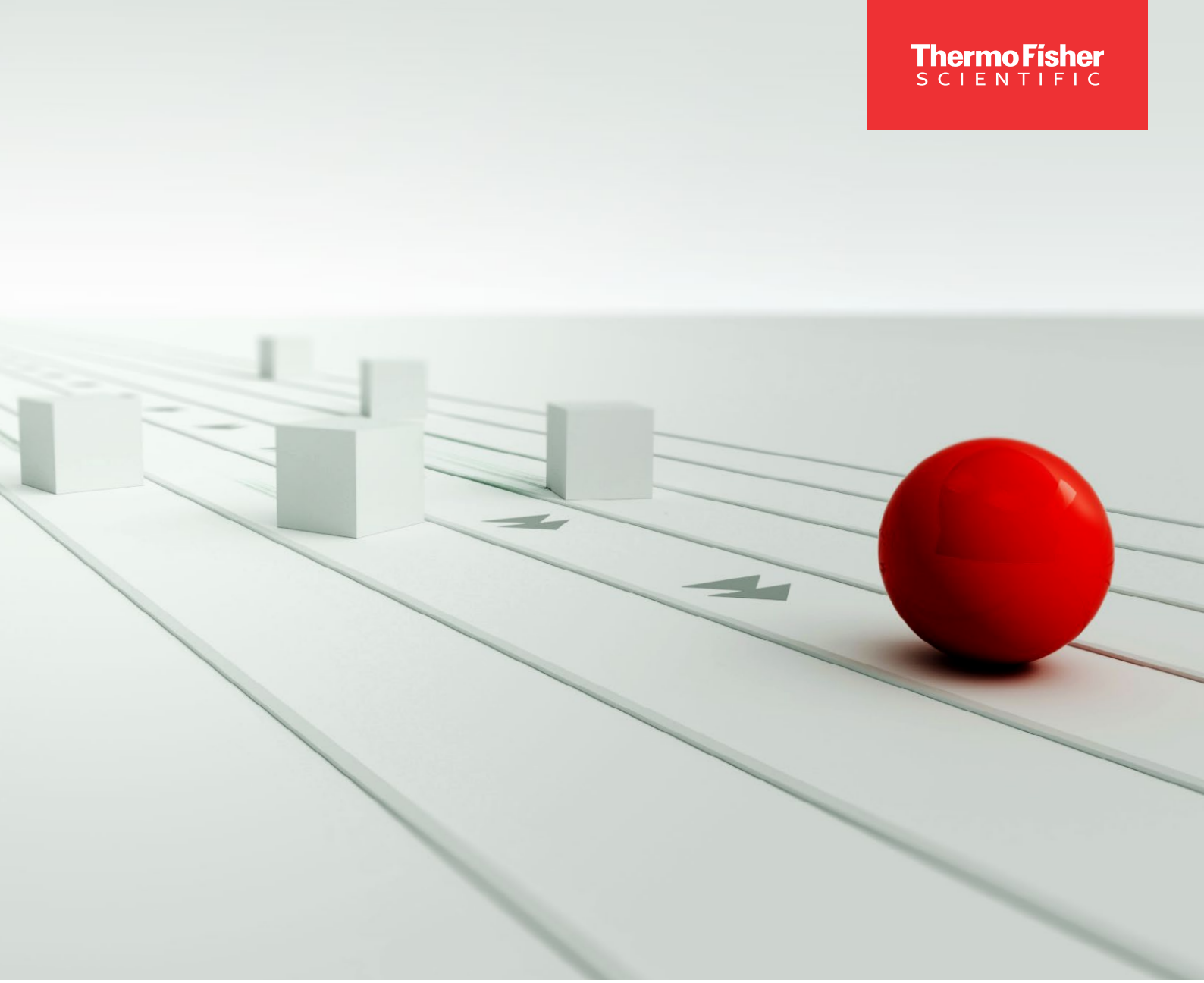


Oncology

Fast, precise, efficient monitoring of neuroendocrine tumors

B·R·A·H·M·S CgA II KRYPTOR

Measure CgA
Now FDA cleared

thermo scientific

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 has a molecular weight of 49 kDA and is produced in high concentrations in endocrine and neuroendocrine cells, e.g. in the pancreas, stomach and intestines.[3]

Its biological function has not yet been determined conclusively, but it is believed that CgA is a prohormone. The precursor molecule of CgA is made up of several peptides such as chromo-statin, pancreastatin and catestatin, which appear individually once the prohormone has been proteolytically processed by various proteases.[4]

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.[4]

Clinical utility of CgA in neuroendocrine tumors (NETs)

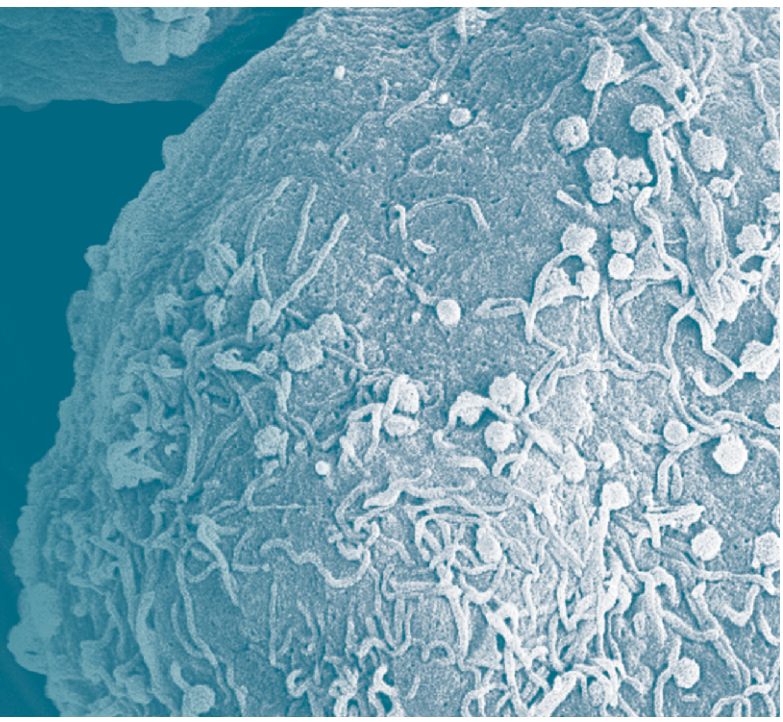
CgA elevations occur in diverse NETs but are usually more pronounced in GEP-NETs (small intestinal, gastric, and pancreatic NETs; GEP = Gastroenteropancreatic). CgA elevations may occur in carcinomas with a complete or a partial neuroendocrine phenotype (Figure 1).[3]

CgAs particular strengths as a serum tumor marker include:[4]

- **It is already part of the established diagnostic and monitoring procedure for neuroendocrine tumors**
- **It can be used to track further progress 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[1,6,7]**
- **Renal failure may increase detectable CgA by reducing glomerular filtration of CgA-related peptides[1,6,7]**
- **Patients with chronic/acute infl ammation and cardiac insuffi ciency may have an elevated CgA[3]**
- **Patients with non malignant gastro intestinal disorders (e.g. pancreatitis, chronic hepatitis) may have an elevated CgA[3]**



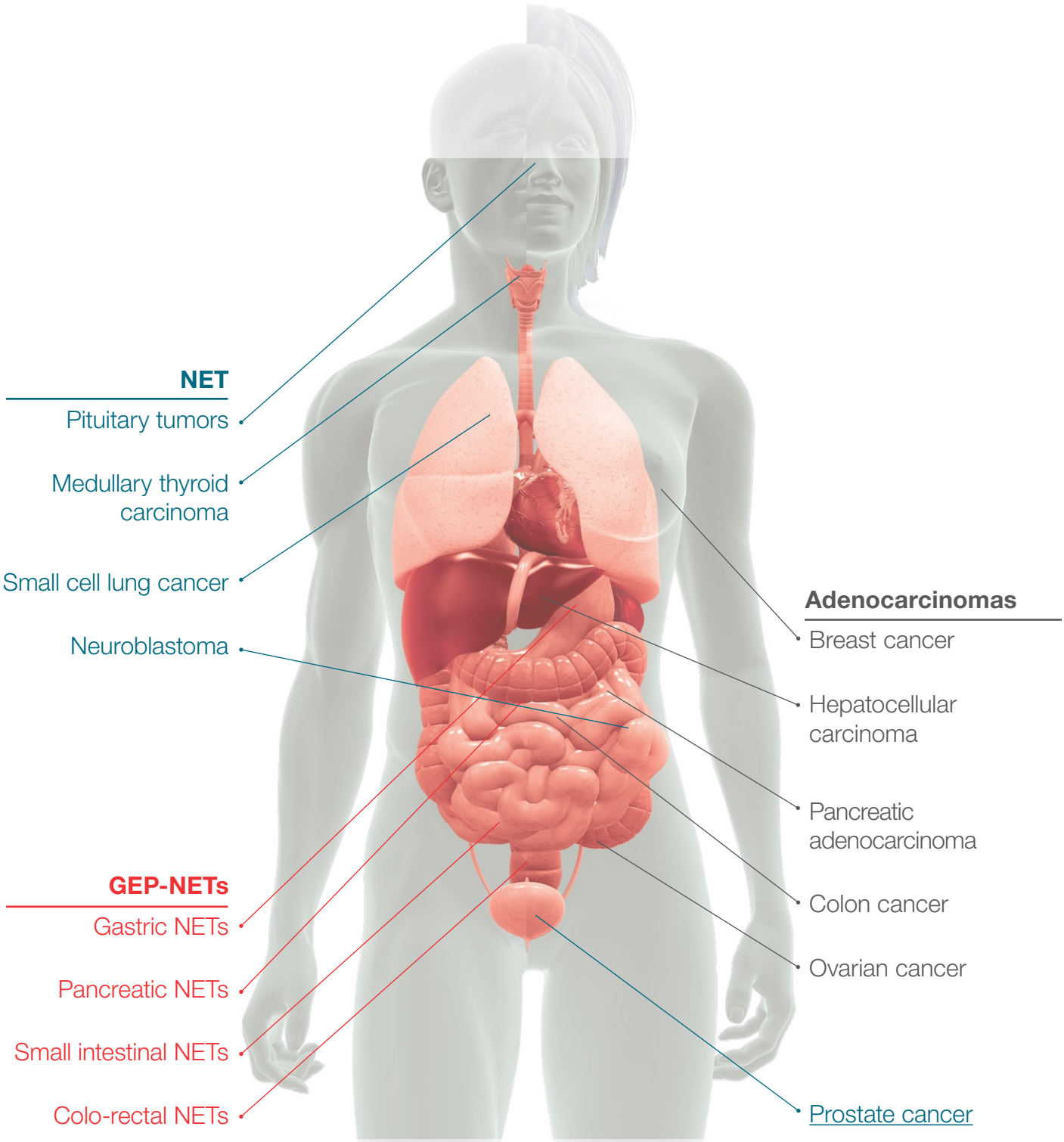


Figure 1: Neoplastic causes of elevated CgA (adapted from Lawrence et al.[3])

First and only fully automated CgA assay

Short time to result

The automated Thermo Scientific™ B·R·A·H·M·S™ KRYPTOR™, a random access analyzer, provides fast, repro ducible results and is significantly less labor intensive than other commercially available CgA assays.[2]

When assessing response to therapy and disease burden clin icians expect results in a timely manner. Results on KRYPTOR are **available within 29 minutes** (Figure 2) and could be reported to clinicians the same day. Labs can now provide to clinicians a reliable monitoring indicator for response to targeted therapy of neuroendocrine tumors.[2]

Superior precision

KRYPTOR 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 therapy for optimal patient management.

B·R·A·H·M·S KRYPTOR GOLD

First and only…
FDA cleared
CgA Assay

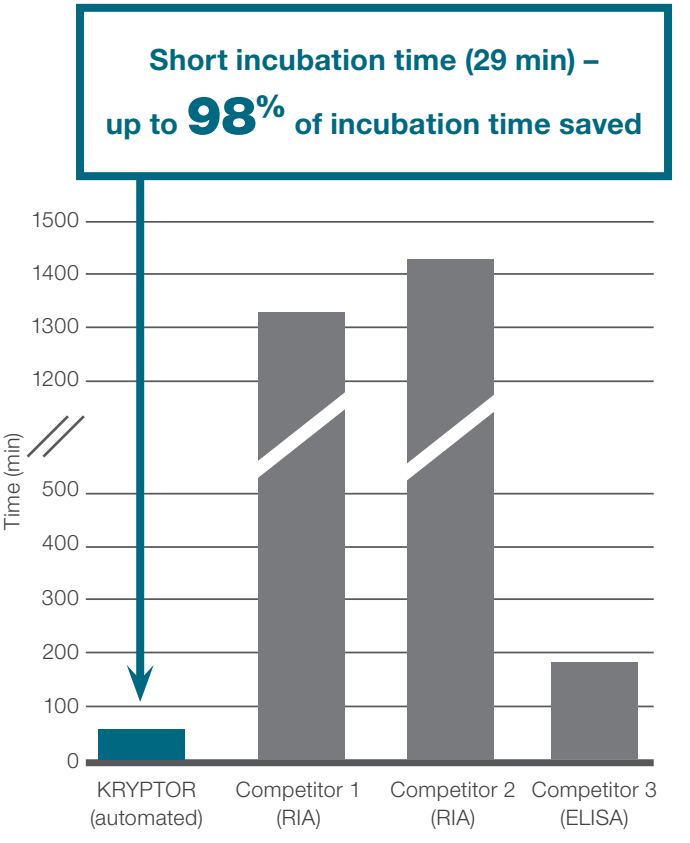


Figure 2: Incubation time (min) of various CgA assays

Broad measuring range

Each dilution requires an extra determination. On KRYPTOR less samples have to be diluted compared to other current commercially available assays because of the broader direct measuring range (Figure 3).

The Thermo Scientific 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 neuroendocrine tumors**.[2]

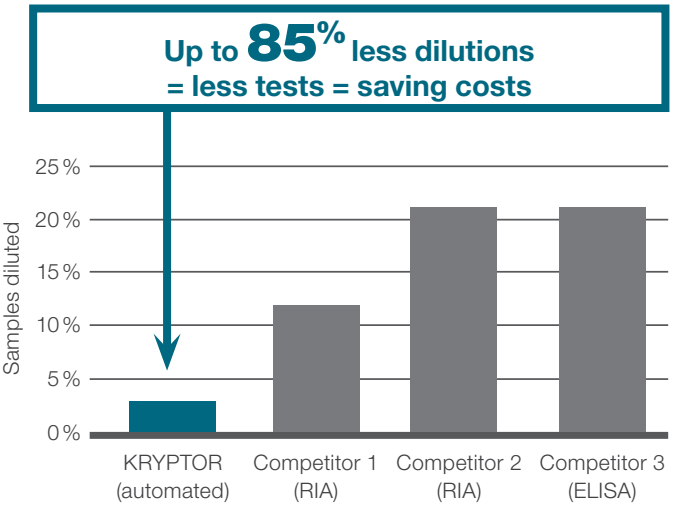


Figure 3: Ratio of samples that require dilution.[data on file]

"The patient group that has been most positively affected by the Chromogranin A assay on KRYPTOR are the **patients with extensive neuroendocrine or carcinoid tumors**. In this group CgA is often extraordinarily high and samples have to be diluted. Accurately quantifying CgA in these patients allows for **improved assessment of disease activity and response to therapy**."

CgA expert user

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%).[data on file]

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.

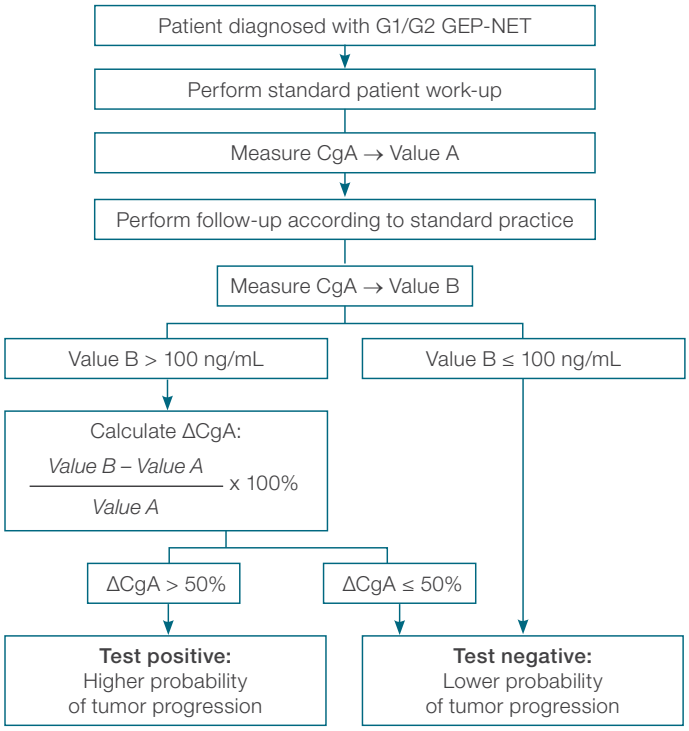


Figure 4: Unequalled clinical value in the follow-up of G1/G2 GEP-NET patients

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.

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Clinical Diagnostics

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