DiaSource®

# RIA

## Product Catalogue

# Table of contents

# Our Company

## More than 30 years of experience in IVD (kits and instrumentation)

DiaSource ImmunoAssays (a BioVendor Group company), an international diagnostic company (Belgium), develops, manufactures and markets clinical diagnostic products in the field of endocrinology and infectious diseases. Core products are based on RIA and ELISA technology and also include reagents to be run on open ELISA automated analyzers as well as antibodies for use in in-vitro diagnostic assays. DiaSource has specific development and manufacturing programs for Vitamin D, Renin, Calcitonin and many others parameters. We also provide selected instrumentation: we offer ELISA reader, washer and shaker, along with open and closed fully automated ELISA platforms helping our customers to automate their tests. It is our ambition to use our 30 years of expertise in Antibody and Assay development to remain a well-known company of diagnostic immunoassays and instrumentation for the IVD market.

## Mission

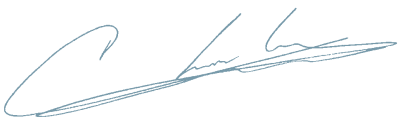
Our mission is to develop, manufacture and market a complete panel of quality immunoassays and instrumentation as accurate, reliable, diagnostic tools to detect and monitor endocrine disorders and infectious diseases. We are dedicated to provide highly reliable quality assays and instrumentation to deliver uncompromising support to our customers. We strive for meeting our customers needs through a long-term professional relationship and by offering a real added value. Our company is driven by commitment to quality of products and services.

## Product range

During the last 30 years, we have developed manual ELISA and RIA immunoassays for the diagnosis and monitoring of a wide variety of endocrine disorders. We constantly rework and develop specific antibodies for use in our diagnostic assays. In addition we offer these antibodies also to other diagnostic companies. Constantly looking for new technologies and applications, we put our expertise in the development of new antibodies (patent pending) and assays to measure 25OH Total Vitamin D (D2+D3). We strengthen our position in the diagnostic market by validating our ELISA assays on our open and closed automates. This innovation marks a turning point for our company, and makes of DiaSource, already renowned in the RIA market, a complete diagnostic provider. The interest in Vitamin D is rising rapidly. Since more than 10 years DiaSource manufactures immunoassays for 25OH Vitamin D3 and 1,25$(OH)_2$ Vitamin D. In our assay development program, we are focusing specifically on new Vitamin D assays. We introduced a new Total Vitamin D (D2 + D3) RIA and ELISA assay, an innovative free 25OH Vitamin D ELISA kit, together with a Rat 25OH Vitamin D Elisa kit for clinical research studies. The ELISA versions can also be applied on our instruments.

## Commitment to quality

We believe that the quality of products and services finds its origin in scientific expertise, good organization of all operational activities and in well-structured decision processes. These principles are laid out in our ISO 13485:2016 quality manual. Through the integration of product quality in our development and manufacturing processes and a specific customer-oriented approach, we have directed our quality system to comply with the harmonized standard for quality systems within the context of the European Directive for In Vitro Diagnostics. Our internal quality management system is designed to pursue a continuous improvement of our customer service, our product quality and the efficiency of our operations. All our kits and instruments for in-vitro diagnostics (IVD) carry the CE mark and comply with IVD Directive requirements.



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# To contact us

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# Autoimmunity

Autoimmunity is the failure of an organism to recognize its own constituent parts as self, which results in an immune response against its own cells and tissues. Any disease that results from such an aberrant immune response is termed an autoimmune disease. Prominent examples include Coeliac disease, diabetes mellitus type 1 (IDDM), systemic lupus erythematosus (SLE), Sjögren's syndrome, Churg-Strauss Syndrome, multiple sclerosis (MS), Hashimoto's thyroiditis, Graves' disease, idiopathic thrombocytopenic purpura, and rheumatoid arthritis (RA).

## Diabetes

Type I diabetes is an autoimmune disease with a prediabetic, asymptomatic period characterized by the selective destruction of insulin-producing β cells. During the prediabetic phase, various auto-antibodies are generated against several beta cell antigens such as anti glutamate acid decarboxylase (Anti-GAD), anti tyrosine phosphatase (Anti-IA2). The coupled detection of Anti-IA2 with that of Anti-GAD proves its great importance in the diagnosis and prediction of type 1 diabetes. The combined positivity for both antibodies has a excellent specificity and a positive predictive value.

## Hashimoto's Thyroiditis

The body normally produces antibodies against foreign substances such as bacteria; however, some people are found to have antibodies against their own thyroid tissue. A condition known as Hashimoto's Thyroiditis is associated with a high level of these thyroid antibodies in the blood. Whether the antibodies cause the disease or whether the disease causes the antibodies is not known; however, the finding of a high level of thyroid antibodies is a strong evidence of this disease. Occasionally, low levels of thyroid antibodies are found with other types of thyroid disease. When Hashimoto's thyroiditis is present under the form of a thyroid nodule rather than a diffuse goiter, the thyroid antibodies may not be present.

## Myasthenia gravis (MG)

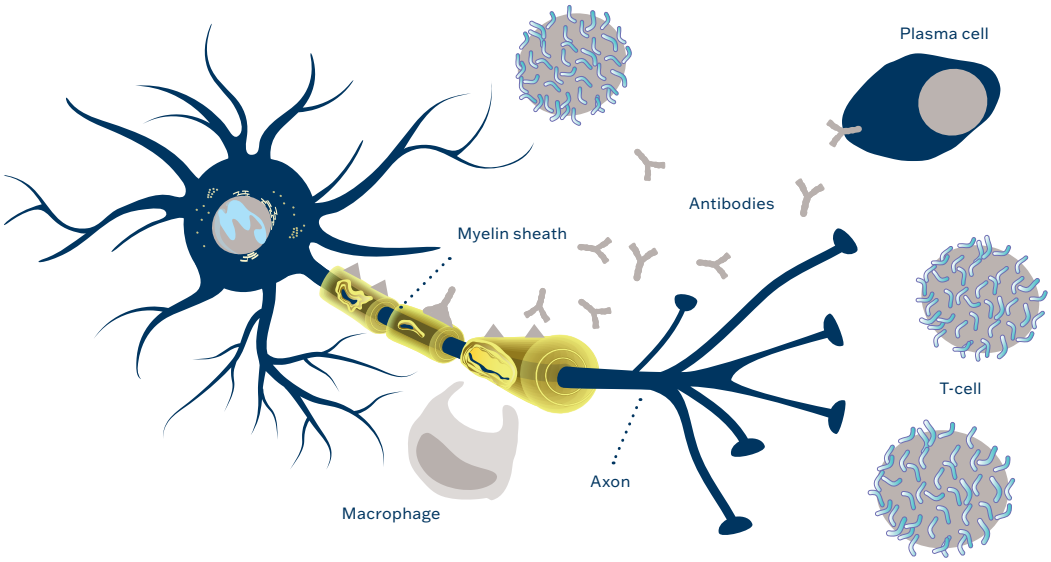
Myasthenia gravis (MG) is a neuromuscular autoimmune disorder characterized by chronic but intermittent fatigue of the eye- and general body muscles. Muscle weakness is caused primarily by the binding of an autoantibody to the acetylcholine receptors, resulting in blockage of normal neuromuscular signal transmission. Most people with MG have antibodies directed against the acetylcholine receptor (AChR antibodies). However, about 10% to 15% of people with MG do not have AChR antibodies. Myasthenia gravis (MG) patients with autoantibodies to muscle-specific tyrosine kinase (MuSK) represents an important subgroup of autoimmune myasthenia affecting 5–70% of patients who are negative for the more common antibodies against the acetylcholine receptor.

**Anti-AChR antibodies could be:**

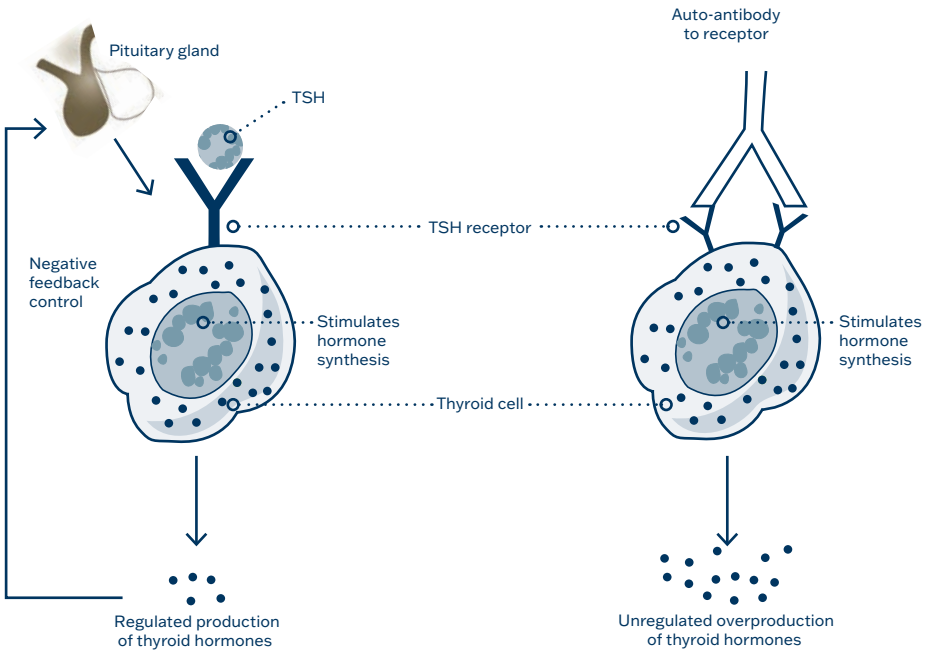
- binding antibodies (multitudes of wide populations of antibodies directed to hydrophilic domains of receptors)
- blocking antibodies (preventing binding of acetylcholine to receptors)
- modulating antibodies (accelerating endocytosis resulting in loss of receptors).

| Thyroid Antibody | Acronym | Present in |
|---|---|---|
| Thyroid peroxidase antibody | TPOAb | Hashimoto's thyroiditis; Graves' disease |
| Thyroglobulin antibody | TgAb | Thyroid cancer; Hashimoto's thyroiditis |
| Thyroid stimulating receptor antibody | TRAb | Graves' disease |

## Autoimmune disease




## Stimulating Auto-Antibodies (Graves' disease)



| Format | Cat# | Size | Sample type | Sample size (µL) | Control Levels | Range | Sensitivity | Incubation (hours) | Max shelf life (weeks) |
|---|---|---|---|---|---|---|---|---|---|
| **Acetylcholine Receptor Autoantibody (AChR Ab)** | | | | | | | | | |
| RRA | KIPIB21021 | 100 T | S - P | 20 | 2 | 0,2-8 nmol/L | 0,01 nmol/L | 3 | 10 |
| RIA | RBA-25* | 25 T | S | 5 | 2 | 0.25-8 nmol/L | 0.02 nmol/L | 4.5 | 7 |
| RIA | RBA-100* | 100 T | S | 5 | 2 | 0.25-8 nmol/L | 0.02 nmol/L | 4.5 | 7 |
| **Anti-ds DNA** | | | | | | | | | |
| RIA | KIPIB19011 | 100 T | S | 25 | 2 | 3-80 IU/mL | 2.5 IU/mL | 1,25 | 10 |
| RIA | IM771** | 100 T | S | 25 | on request | 0-100 IU/mL | 2.5 IU/mL | 1,5 | 6 |
| **Anti-GAD65** | | | | | | | | | |
| RIA | KIPM2071 | 50 T | S | 20 | 2 | 1-120 U/mL | 0,7 U/mL | 3,5 | 5,5 |
| RIA | KIPM2070 | 100 T | S | 20 | 2 | 1-120 U/mL | 0,7 U/mL | 3,5 | 5,5 |
| **Anti-IA2** | | | | | | | | | |
| RIA | KIPM2050 | 50 T | S | 20 | 2 | 0 - 60 U/mL | 0,8 U/mL | ON | 5,5 |
| **Anti-Thyroglobulin AutoAntibodies (Tg Ab)** | | | | | | | | | |
| RIA CT | R-CI-100 | 96 T | S | 20 | 2 | 20-2000 IU/mL | 6 IU/mL | 1,5 | 9 |
| **Anti-Thyroperoxidase AutoAntibodies (TPO Ab)** | | | | | | | | | |
| RIA CT | R-CO-100 | 96 T | S | 20 | 2 | 40-1000 IU/mL | 7,4 IU/mL | 1,5 | 9 |
| **Cyclosporine** | | | | | | | | | |
| RIA | KIPB3679 | 100 T | EDTA Whole Blood | 20 | 2 | 36-2235 ng/mL | 1,61 ng/mL | 1 | 8 |
| **Insulin AutoAntibody (IAA)** | | | | | | | | | |
| RIA | KIP0091 | 100 T | S - P | 100 | 3 | 0-100 % | <8,2% | 2,25 | 8 |
| RIA | KIPM2035 | 100 T | S | 20 | 2 | 0,4 - 50 U/mL | 0,2 U/mL | ON | 4,5 |
| **Muscle Specific Tyrosine Kinase (MusK) Autoantibody*** | | | | | | | | | |
| RIA | MSK-25 | 25 T | S | 15 | 2 | / | 0.0023 nmol/L | ON + 5 | 6 |
| **P-Type Voltage-Gated Calcium Channel (VGCC) Autoantibody*** | | | | | | | | | |
| RIA | LEM-25 | 25 T | S | 15 | 2 | / | 2.86 pmol/L | 2.5 | 9 |
| **TSH Receptor Autoantibody (TRAb)** | | | | | | | | | |
| RIA CT | KIPM2042 | 100 T | S | 100 | 2 | 1 - 50 IU/L | 0,17 IU/L | 2 | 6,5 |
| RIA | TCT-60* | 60 T | S | 100 | 2 | 1-40 IU/L | 0.33 IU/L | 3 | 7 |
| RIA | TCT-100* | 100 T | S | 100 | 2 | 1-40 IU/L | 0.33 IU/L | 3 | 7 |
| **Voltage-Gated Potassium Channel (VGKC) Autoantibody*** | | | | | | | | | |
| RIA | VGK-25 | 25 T | S | 15 | 2 | / | 4.5 pmol/L | ON + 3 | 8 |

*Not available for Japan, China, Hong Kong, Taiwan, USA, Canada and UK
**Not available for Australia, Canada, China, Israel, Jordan, South Africa, South Korea and USA
ON=Over night - P=Plasma - S=Serum
EP=EDTA Plasma

# Biogenic Amines & Neurosciences

Biogenic amine is a chemically imprecise term, which, by convention, includes the catecholamines, the indoleamine Serotonin, the imidazolamine Histamine and compounds closely related to each of these. They are produced by decarboxylation of amino acids. The Melatonin is an indolic compound related structurally to other important substances, including tryptophan, serotonin, and indole-3-acetic acid. These biogenic amines play key roles in neurotransmission and other signalling functions.

## Melatonin

Melatonin is an hormone synthetized in the pineal gland through methylation from the amino acid L-Tryptophan. Melatonin synthesis is stimulated by darkness while exposure to light inhibits its synthesis. That makes melatonin a marker of circadian rhythms and play an important role in regulating the sleep–wake cycle and adaptation to environmental changes. Concentration measurements in serum/plasma, saliva and urine are widely used to assess peripheral rhythm, sleep disorders like insomnia, jet lag, oxidative stress.

Melatonin continues to be of considerable interest to biomedical researchers. Of particular interest is the pattern of secretion of melatonin in relation to sleep timing as well as its potential role in certain diseases.

| Format | Cat# | Size | Sample type | Sample size (µL) | Control Levels | Range | Sensitivity | Incubation (hours) | Max shelf life (weeks) |
|---|---|---|---|---|---|---|---|---|---|
| **α - Melanocyte Stimulating Hormone*** | | | | | | | | | |
| RIA | RB303RUO | 100 T | | EP | 100 | 2 | 4,7-150 pmol/L | 3 pmol/L | 48 | 12 |
| **Melatonin**** | | | | | | | | | |
| RIA | RK-MEL2 | 200 T | S-P-U-O | 400 | 2 | 0.5-50 pg/mL | 0.3 pg/mL | ON | 6.5 |
| RIA | RK-DSM2 | 200 T | SA | 400 | 2 | 0.5-50 pg/mL | 0.2 pg/mL | ON | 6.5 |

*For Research Use Only
**Not available for Australia, Canada, Germany, Japan, Netherlands, USA, South Africa and Switzerland
ON=Over night - P=Plasma - S=Serum - Sa=Saliva - U=Urine - O=Other biological fluids

# Bone Metabolism

Bones are continuously undergoing a dynamic process of resorption and absorption known as **bone metabolism**. Signaling pathways on which bone metabolism relies include the action of several hormones, including **Osteocalcin, Parathyriod Hormone (PTH) and Vitamin D**.

As **Osteocalcin**, the major non-collagenous protein of the bone matrix, is manufactured by osteoblasts, it is often used as a biochemical marker, for the bone formation process. A  arge number of studies indicate that serum-osteocalcin levels reflect very well the rate of bone formation.

**The determination of blood levels of Osteocalcin is valuable for:**

- The identification of women at risk of developing osteoporosis
- Monitoring bone metabolism in several clinical conditions:
  - during peri- and post menopause
  - during Hormone Replacement Therapy
  - patients with GH deficiency, Renal osteodystrophy

## Parathyroid Hormone (PTH) or Parathormone

Is secreted by the parathyroid glands as a polypeptide containing 84 amino acids and is the major physiological regulator of phosphocalcic metabolism. It acts to increase the concentration of calcium (Ca2+) in the blood.

**Measurements of PTH is used in:**

- Diagnose hyperparathyroidism (elevated levels of intact PTH)
- Differentiation between hypoparathyroidism and hypercalcemia
- It allows documenting the occurrence of secondary hyperparathyroidism in patients with Vitamin D deficiency, intestinal malabsorption, or renal failure.

## Vitamin D

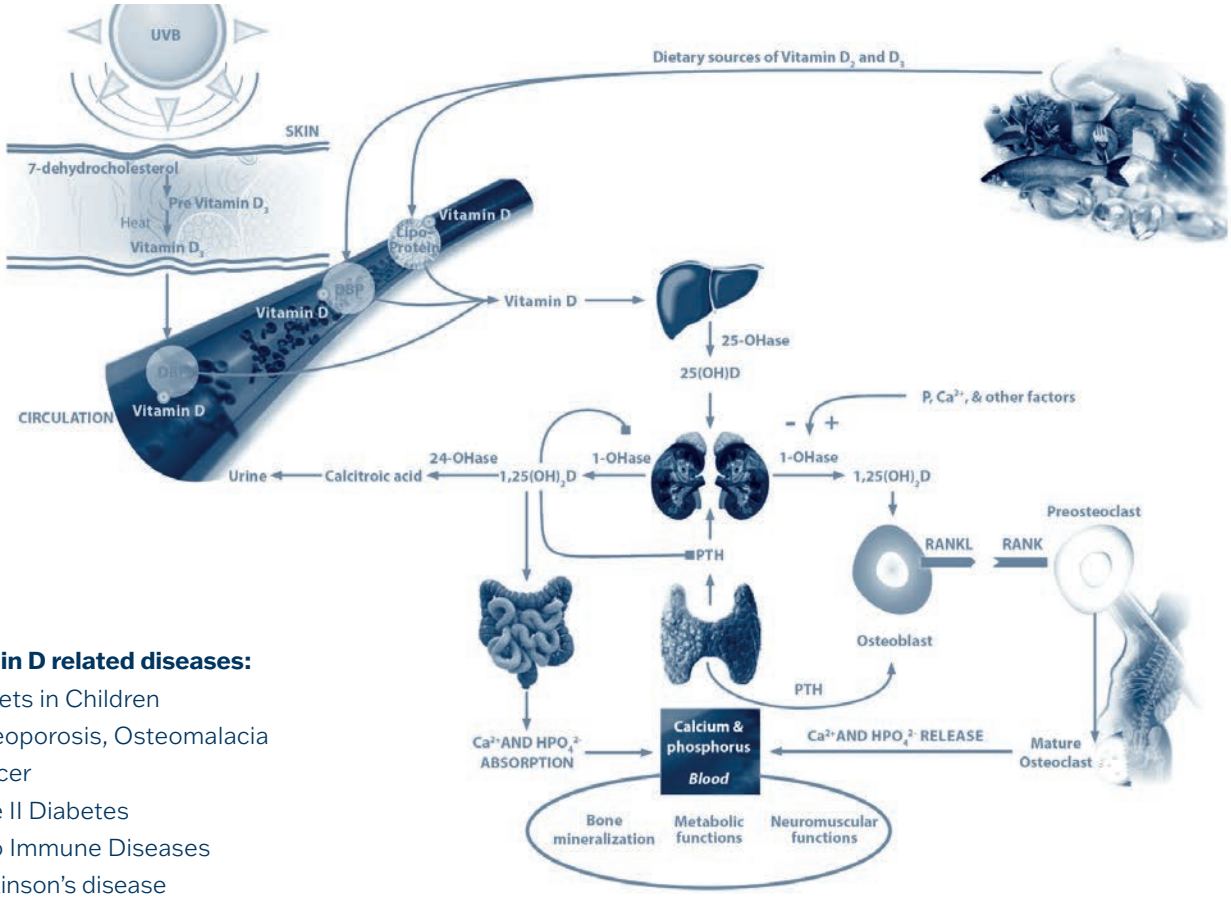
Plays an important role in the maintenance of major organ systems: Vitamin D regulates the calcium and phosphorus levels in the blood and inhibits parathyroid hormone secretion from the parathyroid gland. Vitamin D deficiency can result from inadequate intake coupled with inadequate sunlight exposure, conditions that impair conversion of vitamin D into active metabolites, such as liver or kidney disorders, or, rarely, by a number of hereditary disorders. Deficiency results in impaired bone mineralization, and leads to bone softening diseases, rickets in children and osteomalacia in adults, and possibly contributes to osteoporosis. Research has also indicated that vitamin D deficiency is linked to colon cancer and more recently, to breast cancer. Conflicting evidence links vitamin D deficiency to other forms of cancer.

The major form of Vitamin D, 25OH Vitamin D, has a limited biological activity and is converted in the kidney into $1,25(OH)_2$ Vitamin D a more active derivate. The blood levels of $1,25(OH)_2$ D being 100 to 1000 less than 25OH D, extraction and separation steps are required prior to measurement.

## Free 25OH Vitamin D

Free 25OH Vitamin D represents the tiny fraction that circulates as the free form. It is considered to be a better biomarker than 25OH Vitamin D in some conditions.

## Physiology of vitamin D




**Vitamin D related diseases:**

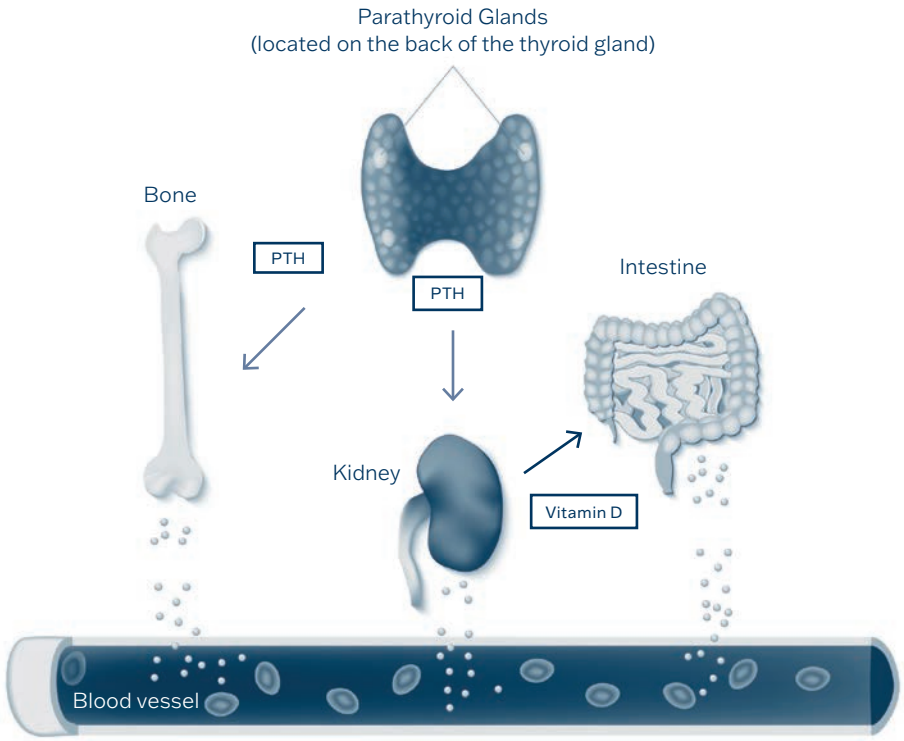
- Rickets in Children
- Osteoporosis, Osteomalacia
- Cancer
- Type II Diabetes
- Auto Immune Diseases
- Parkinson's disease

| Patient status | ng/mL of 25(OH) Vit D* |
|---|---|
| Vit D Deficiency | < 10 |
| Vit D Insufficiency | 10 - 30 |
| Vit D Sufficiency | > 30 - 100 |
| Risk for Toxicity | > 100 |

*Based on a vast majority of clinical studies to define normal circulating 25 OH VIT D levels e.g. US National health and Nutrition Examination Survey (US NHANES-study)

| Format | Cat# | Size | Sample type | Sample size (µL) | Control Levels | Range | Sensitivity | Incubation (hours) | Max shelf life (weeks) |
|---|---|---|---|---|---|---|---|---|---|
| **1,25(OH)$_2$ Vitamin D** | | | | | | | | | |
| RIA CT | KIP1929 | 48 T | S - P | 500 | 2 | 6-430 pg/mL | 0,5 pg/mL | ON | 10 |
| | 3019700 | set including solvents for 5 kits of 1,25(OH)$_2$ Vitamin D | | | | | | | |
| | 4300604 | shaker for extraction (IKA Vibrax 1200 RPM) | | | | | | | |
| | 4300605 | support rack for tubes (to be used with shaker) | | | | | | | |
| | 1102491 | extra cartridges for extraction in single (1 bag of 20 cartridges) | | | | | | | |
| **25OH Vitamin D Total** | | | | | | | | | |
| RIA CT | KIP1971 | 96 T | S | 25 | 2 | 5,8-100 ng/ml | 1,9 ng /ml | 3 | 8 |
| **Intact Parathyroid Hormone (PTH)** | | | | | | | | | |
| IRMA | KIP1491 | 96 T | S - P | 300 | 2 | 13-1562 pg/mL | 1,7 pg/mL | 2 | 9 |
| **Osteocalcin** | | | | | | | | | |
| IRMA | KIP1381 | 96 T | S - P | 50 | 2 | 1,9-69 ng/mL | 0,22 ng/mL | 2 | 7 |
| **UniQ PINP*** | | | | | | | | | |
| RIA | 67034 | 100 T | S | 50 | 2 | 5-250 µg/L | 2 µg/L | 2.75 | 5 |
| **UniQ ICTP*** | | | | | | | | | |
| RIA | 68601 | 100 T | S | 100 | 2 | 1 -50 µg/L | 0.6 µg/L | 4 | 5 |

## Parathyroid Glands




*Not available for Austria, Czech Republic, Germany, France, United Kingdom, Italy, Japan, Netherlands, Norway, Sweden, USA, New Zealand
ON=Over night - P=Plasma - S=Serum

# Cancer Markers

Serum tumor markers is a term commonly used to refer to molecules that can be detected in a blood sample by immunochemical methods. Tumor markers are produced either by the tumor (cancer) itself or by the body in response to the presence of cancer or certain non-cancerous (benign) conditions.

## Measurements of tumor marker levels by serum markers can be useful in following clinical settings

### Diagnosis

Serum tumor markers can, when used along with X-rays or other tests, aid in diagnosis of some types of cancer. They also can aid in locating the source of cancers that have metastasized.

### Monitoring for recurrence of tumor

After successful treatment of a cancer patient, tumor marker(s) are regularly tested to indicate whether there is a recurrence of the cancer.

### Prognosis and staging

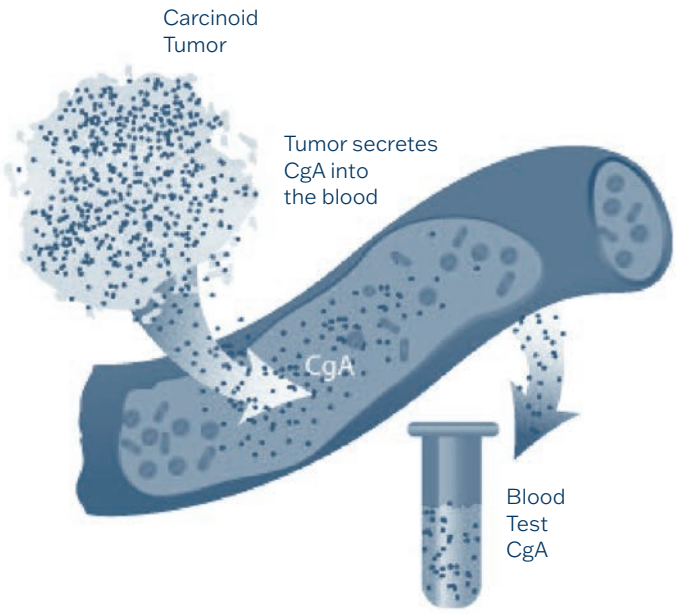
Serum tumor markers can be used as aid in the tumor volume estimation, as a helpful tool to indicate tumor progression, or as indicator of metastasis involvement.

### Detection of residual disease

After surgery of a specific cancer, serum tumor markers can be used to indicate whether the entire tumor burden has been successfully removed.

### Monitoring treatment

Serum tumor markers can be used as tool to assess the outcome of a treatment by monitoring a patient's response to a specific or various treatment regimens. In general, serum marker levels will drop if treatment is beneficial and will remain elevated or increased when treatment is not effective. Currently, the main use of tumor markers is to assess a cancer's response to treatment and to check for recurrence.




| Cancer marker | Clinical use |
|---|---|
| AFP (Alpha-Fetoprotein) | Testicular Cancer, Ovarian cancer, Malignant teratoma |
| CA 50 | Gastro-intestinal, Endometrial cancer |
| CA 72-4 | Gastric, ovarian, breast, colorectal, lung, Pancreatic cancer |
| CgA (Chromogranin A) | Small Cell Lung Carcinoma (SCLC), Tumors of neuroendocrine origin |
| CT US (Calcitonin Ultra Sensitive) | Medullary Thyroid Carcinoma (MTC) |
| CYFRA 21-1 | Non Small Cell Lung Cancer (NSCLC) |
| Free β-hCG (Free β-Human Chorionic Gonadotropin) | Throphoblastic cancer, Testicular cancer |
| Gastrin | Gastrin producing tumors |
| NSE (Neuron Specific Enolase) | Medullary Thyroid Carcinoma (MTC), Pancreatic islet cell cancer, Small Cell Lung Cancer (SCLC) |
| Tg-S (Thyroglobuline) | Small Cell Lung Cancer (SCLC), Thyroid cancer |

| Format | Cat# | Size | Sample type | Sample size (µL) | Control Levels | Range | Sensitivity | Incubation (hours) | Max shelf life (weeks) |
|---|---|---|---|---|---|---|---|---|---|
| **Alpha-Fetoprotein (AFP)** | | | | | | | | | |
| IRMA | KIPB1441 | 100 T | S | 50 | 2 | 3-400 IU/mL | 0,11 IU/mL | <1 | 10 |
| **CA 50** | | | | | | | | | |
| RIA | OCFM07-CA50 | 100 T | S-P | 50 | 2 | 0.4 – 180 U/mL | 0.4 U/mL | 4 | 7 |
| **CA 72-4** | | | | | | | | | |
| IRMA | ELSA-CA72-4 | 96 T | S-P | 100 | 1 | 3-100U/mL | 0.8 U/mL | 4 + ON | 7 |
| **Calcitonin Ultra Sensitive (CT US)** | | | | | | | | | |
| IRMA | KIP0429 | 96 T | S | 200 | 2 | 10-686 pg/mL | 1,2 pg/mL | ON | 7 |
| **CYFRA 21-1** | | | | | | | | | |
| IRMA | ELSA-CYFRA | 48 T | S | 100 | 1 | 2.3 – 56 ng/mL | 0.05 ng/mL | 20 | 7 |
| **Free Prostate Specific Antigen (Free PSA)*** | | | | | | | | | |
| IRMA | RK-85CT | 100 T | S | 50 | 2 | 0-30 ng/mL | 0,02 ng/mL | 2 | 8 |
| **Free β-hCG** | | | | | | | | | |
| IRMA | KIP1001 | 96 T | S | 50 | 2 | 0,18-77,6 mIU/mL | 0,03 mIU/mL | 1 | 9 |
| **Chromogranin A (CgA)** | | | | | | | | | |
| RIA | KIPERB321 | 100 T | S - P | 50 | 2 | 0,156-5 nmol/L | 0,02 nmol/L | ON | 12 |
| **Neuron Specific Enolase (NSE)** | | | | | | | | | |
| IRMA | KIP2471 | 96 T | S | 50 | 2 | 2,5 -270 ng/mL | 0,19 ng/mL | 2 | 11 |
| **Prostate Specific Antigen (PSA)*** | | | | | | | | | |
| IRMA | RK-10CT | 100 T | S | 25 | 2 | 0,1-100 ng/mL | 0,04 ng/mL | 1 | 8 |
| **Thyroglobulin (Tg- S)** | | | | | | | | | |
| IRMA Normal | R-CM-100 | 96 T | S - P | 50 | 1 | 1,5-600 ng/mL | 0,18 ng/mL | 20-26 | 9 |
| IRMA Sensitive | | | | 100 | | 0,75-600 ng/mL | | | |

*This kit is not available for sales in every country. For more information contact our sales team.
ON=Over night - P=Plasma - S=Serum

# Cardiovascular & Salt Balance

### The renin-angiotensin system (RAS) orthe renin-angiotensin-aldosterone system (RAAS)

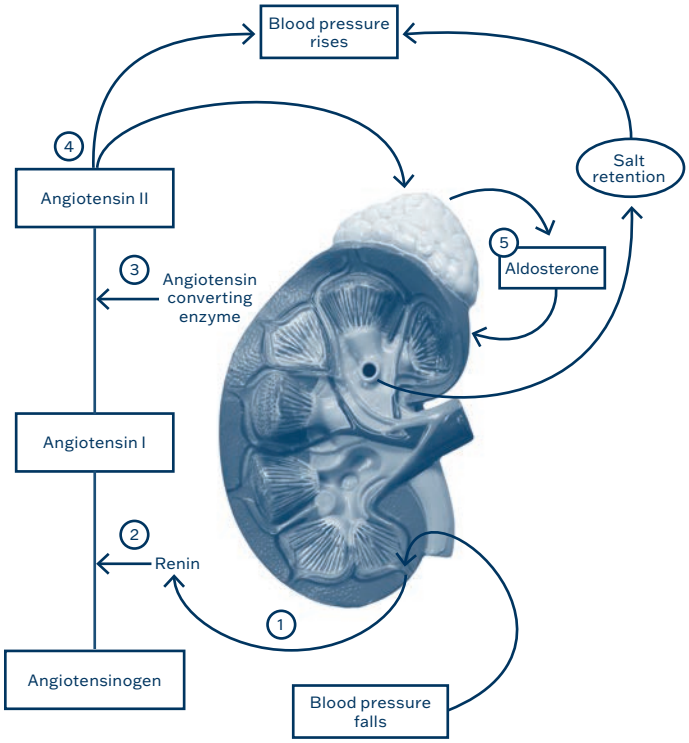
(RAAS) is a hormone system that regulates blood pressure and water (fluid) balance. Renin activates the renin-angiotensin system by cleaving angiotensinogen, produced by the liver, to yield angiotensin I, which is further converted into Angiotensin II by ACE (Angiotension Converting Enzyme). The most important site for Renin release is the kidney.

Angiotensin also stimulates the secretion of the hormone **Aldosterone** from the adrenal cortex. Aldosterone causes the tubules of the kidneys to retain sodium and water. This increases the volume of fluid in the body, which also increases blood pressure. If the renin-angiotensin-aldosterone system is too active, blood pressure will be too high. Angiotensin II also stimulates the release of vasopressin (antidiuretic hormone, ADH) from the pituitary which acts upon the kidneys to increase fluid retention.

### Vasopressin (ADH)

Also known as Arginine vasopressin (AVP), vasopressin, argipressin or antidiuretic hormone (ADH), is a cyclic nanopeptide with a molecular weight of 1083 Daltons. Most of it is stored in the posterior pituitary to be released into the blood stream; however, a part of it is also released directly into the brain.

One of the most important roles of Vasopressin is to regulate the body's retention of water: when the body is dehydrated. Vasopressin is released causing the kidneys to conserve water, thus concentrating the urine, and reducing urine volume. It also involved in the blood circulation because it increases the resistance of the peripheral vessels and thus increases arterial blood pressure. Vasopressin released within the brain has many actions. It is suggested that ADH has been implicated in memory formation, including delayed re-flexes, image, short- and long-term memory.




### Adrenocorticotropic Hormone (ACTH)

Is released intermittently from the anterior pituitary (adenohypophysis). ACTH circulates in plasma without any obvious binding to transporting peptide and, like other small protein hormones, disappears rapidly from blood with a half-life of 5 to 10 minutes in vivo. The production of ACTH by the pituitary is primarily under the influence of three factors: the level of cortisol-like steroids, a biologic clock, and stress. When the cortisol level increases, the production of ACTH decreases, due to a negative feed-back control.

Associated medical conditions are: Addison's disease, Cushing's syndrome, Congenital Adrenal hyperplasia.

### Cortisol Binding Globulin (CBG) or Transcortin

A plasma α1-glycoprotein with a molecular weight of approximately 52000 Daltons. Since the plasma concentration of transcortin varies between 0.4 and 2.5 106 M, the major fraction of cortisol in plasma is bound to this protein. This transcortin-bound cortisol is considered to be biologically inactive, whereas the unbound cortisol constitutes the active form of cortisol. Transcortin is produced by the liver and is regulated by estrogens. Therefore, plasma transcortin levels increase during pregnancy, and are decreased in cirrhosis cases.

## 11-DESOXYCORTISOL (or cortodoxone)

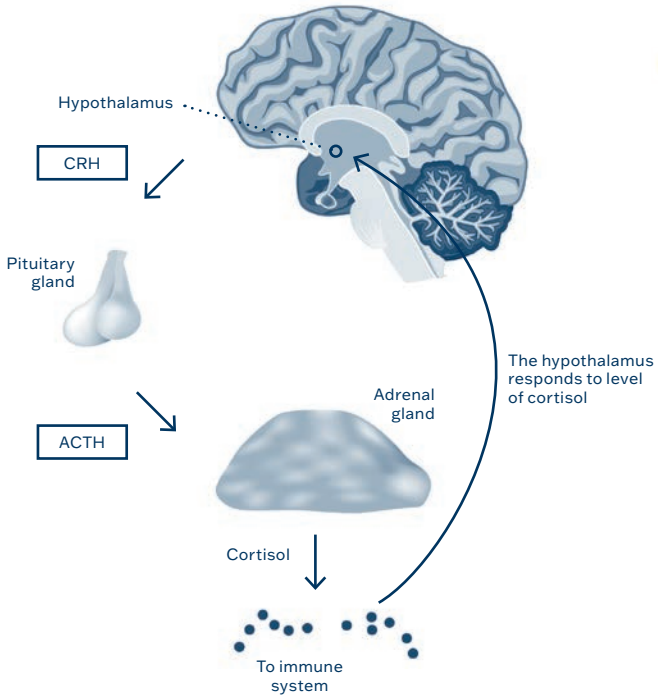
Is a steroid, and an immediate precursor to the production of cortisol. It can be synthesized from 17-hydroxyprogesterone.

**Used clinically in:**

a) the diagnosis, and monitoring therapeutic response in, congenital adrenal hyperplasia due to 11b-hydroxylase deficiency

b) the assessment of adrenal response to in the metyrapone test.

## Stress reponse system




CRH: Corticotropin Releasing Hormone
ACTH: Adrenocorticotropic Hormone

| Format | Cat# | Size | Sample type | Sample size (µL) | Control Levels | Range | Sensitivity | Incubation (hours) | Max shelf life (weeks) |
|---|---|---|---|---|---|---|---|---|---|
| **Adrenocorticotropic Hormone (ACTH)** | | | | | | | | | |
| IRMA | KIP0061 | 96 T | EP | 200 | 2 | 9,6-1932 pg/mL | 1,16 pg/mL | 3 | 7 |
| **Aldosterone** | | | | | | | | | |
| RIA CT | R-CW-100 | 96 T | S<br>U | 200<br>100 (hydrolyzed) | 1 | 25-1500 pg/mL | 1,4 pg/mL | ON or 3 | 9 |
| **Angiotensin I** | | | | | | | | | |
| RIA CT | KIPB3518 | 100 T | P | 400 | 1 | 0,3-30 ng/mL | 0,07 ng/mL | 2 | 8 |
| RIA CT | KIP5361 | 96 T | EP | 500 | 2 | 0,3-28 ng/mL | 0,06 ng/mL | 3 | 8 |
| **Angiotensin II** | | | | | | | | | |
| RIA | RB320 | 100 T | P | 1000 | 2 | 4,7-150 pmol/L | 2 pmol/L | ON | 12 |
| **Corticosteroid Binding Globulin (CBG)** | | | | | | | | | |
| RIA CT | KIP1809 | 96 T | S | 100 | 2 | 0,44-8 µg/mL | 0,28 µg/mL | 2,5 | 7 |
| **Cortisol** | | | | | | | | | |
| RIA CT | KIPI28000 | 96 T | S - P - U - Sa | 25 µL<br>200 µL | 2 | 17-450 µg/L<br>0,9-45 µg/L | 0,9 µg/L<br>0,53 µg/L | 0,75<br>3 | 12 |
| **11-Desoxycortisol** | | | | | | | | | |
| RIA CT | KIPI20000 | 96 T | S | 25 | 2 | 0,3-65 ng/mL | 0,04 ng/mL | 2,5 | 12 |
| **Renin (Active)** | | | | | | | | | |
| IRMA | KIP1531 | 96 T | EP | 300 | 2 | 4-520 pg/mL | 0,78 pg/mL | 3 | 6 |
| **Vasoactive Intestinal Peptide** | | | | | | | | | |
| RIA | RB311 | 100 T | EP | 200 | 2 | 3,8-120 pmol/L | 3 pmol/L | 48 | 12 |
| **Vasopressin** | | | | | | | | | |
| RIA | KIPERB319 | 100 T | P - U | 1000 | 2 | 1,9-60 pmol/L | 0,5 pmol/L | 48 | 12 |

EP=EDTA Plasma - ON=Over night P=Plasma - S=Serum - Sa=Saliva - U=Urine

# Diabetes & Metabolism

## Diabetes mellitus

Is a disorder of carbohydrate metabolism. It is a disease characterized by persistent hyper-glycemia (high blood sugar levels). It is a metabolic disease that requires medical diagnosis, treatment and lifestyle changes.

**There are three main forms of diabetes:** Type 1, Type 2 and gestational diabetes (or Type 3, occurring during pregnancy), although these three "types" of diabetes are more accurately considered patterns of pancreatic failure rather than single diseases.

- Type 1 is due to autoimmune destruction of the insulin-producing cells
- Type 2 and gestational diabetes are due to insulin resistance by tissues

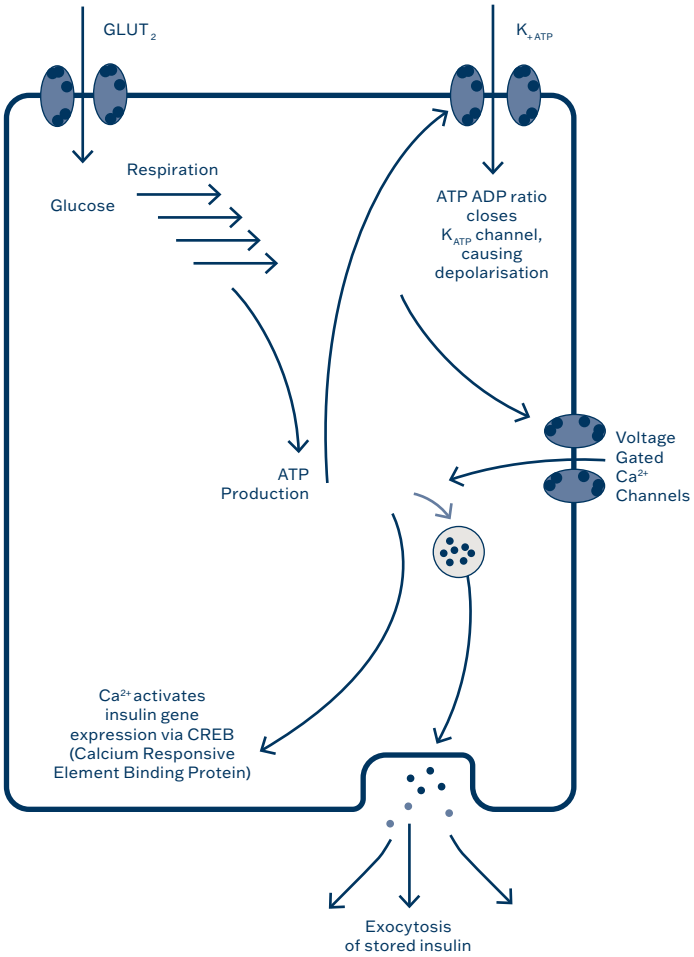
Type 2 may progress to destruction of the insulin producing cells of the pancreas, but is still considered Type 2, even though insulin administration may be required.

Since insulin is the principal hormone that regulates uptake of glucose into most cells from the blood (primarily muscle and fat cells, but not central nervous system cells), deficiency of insulin or the insensitivity of its receptors plays a central role in all forms of diabetes mellitus. Diabetes is a chronic disease, and emphasis is on managing short-term as well as long-term diabetes-related problems. There is an important role for patient education, nutritional support, self glucose monitoring, as well as long-term glycemic control.

## Obesity

Obesity is a condition in which the natural energy reserve, stored in the fatty tissue of humans and mammals, is increased to a point where it is a risk factor for certain health conditions or increased mortality.

Obesity develops from the interaction of individual biology and the environment. Excessive body weight has been shown to correlate with various diseases, particularly cardiovascular disease, diabetes mellitus Type 2, sleep apnea, and osteoarthritis. Obesity is both an individual clinical condition and is increasingly viewed as a serious public health problem.



| Format | Cat# | Size | Sample type | Sample size (µL) | Control Levels | Range | Sensitivity | Incubation (hours) | Max shelf life (weeks) |
|---|---|---|---|---|---|---|---|---|---|
| **Anti-GAD65** | | | | | | | | | |
| RIA | KIPM2071 | 50 T | S | 20 | 2 | 1-120 U/mL | 0,7 U/mL | 3,5 | 5,5 |
| RIA | KIPM2070 | 100 T | S | 20 | 2 | 1-120 U/mL | 0,7 U/mL | 3,5 | 5,5 |
| **Anti-IA2** | | | | | | | | | |
| RIA | KIPM2050 | 50 T | S | 20 | 2 | 0-60 U/mL | 0,8 U/mL | ON | 5,5 |
| **Insulin AutoAntibody (IAA)** | | | | | | | | | |
| RIA | KIP0091 | 100 T | S - P | 100 | 3 | 0-100 % | < 8,2% | 2,25 | 8 |
| RIA | KIPM2035 | 100 T | S | 20 | 2 | 0,4-50 U/mL | 0,2 U/mL | ON | 4,5 |
| **Glucagon** | | | | | | | | | |
| RIA | RB310 | 100 T | P | 200 | 2 | 4,7-150 pmol/L | 3 pmol/L | 48 | 12 |
| **Insulin (INS)** | | | | | | | | | |
| IRMA | KIP1251 | 96 T | S | 50 | 2 | 5,7-440 µIU/mL | 1 µIU/mL | 2 | 10 |
| IRMA | KIP1254 | 384 T | S | 50 | 2 | 5,7-440 µIU/mL | 1 µIU/mL | 2 | 10 |
| **Leptin** | | | | | | | | | |
| RIA CT | KIPMR44 | 125 T | S - P | 25 | 1 | 1-64 ng/mL | 0,1 ng/mL | 15 | 12 |

EP=EDTA Plasma - ON=Over night - P=Plasma - S=Serum

# Fertility

In order to understand the causes of infertility and the role that modern infertility treatment plays in assisting conception, it is useful to look at the natural process - a woman's ovulatory cycle and the production of sperm in the male - and the hormones implied in those processes.

The gonadotropins are hormones that primarily affect the ovaries and the testes. They regulate the development and hormone-secreting functions of these organs.

Three gonadotropins are essential to reproduction: human Follicle Stimulating Hormone (hFSH), human Luteinizing Hormone (hLH) and human Chorionic Gonadotropin (hCG). FSH and LH are secreted by the pituitary gland situated beneath the brain. Their secretion is controlled by another hormone, the Gonadotropin-Releasing Hormone (GnRH) produced by the hypothalamus. hCG is primarily produced by the placenta following successful implantation, and plays a role in maintaining pregnancy.

Androgen is the generic term for any natural or synthetic compound, usually a steroid hormone, that stimulates or controls the development and maintenance of masculine characteristics in vertebrates by binding to androgen receptors. This includes the activity of the accessory male sex organs and development of male secondary sex characteristics. Androgens, which were first discovered in 1936, are also called androgenic hormones or testoids. Androgens are also the original anabolic steroids. They are the precursor of all estrogens, the female sex hormones. The primary and most well-known androgen is testosterone.

A subset of androgens, adrenal androgens, includes any of the 19-carbon steroids synthesized by the adrenal cortex, the outer portion of the adrenal gland (zonula reticularis – innermost region of the adrenal cortex), that function as weak steroids or steroid precursors, including dehydroepiandrosterone (DHEA), dehydroepiandrosterone sulfate (DHEA-S), and androstenedione.

## Dehydroepiandrosterone (DHEA)

A steroid hormone produced in the adrenal cortex from cholesterol. It is the primary precursor of natural estrogens.

## Androstenedione

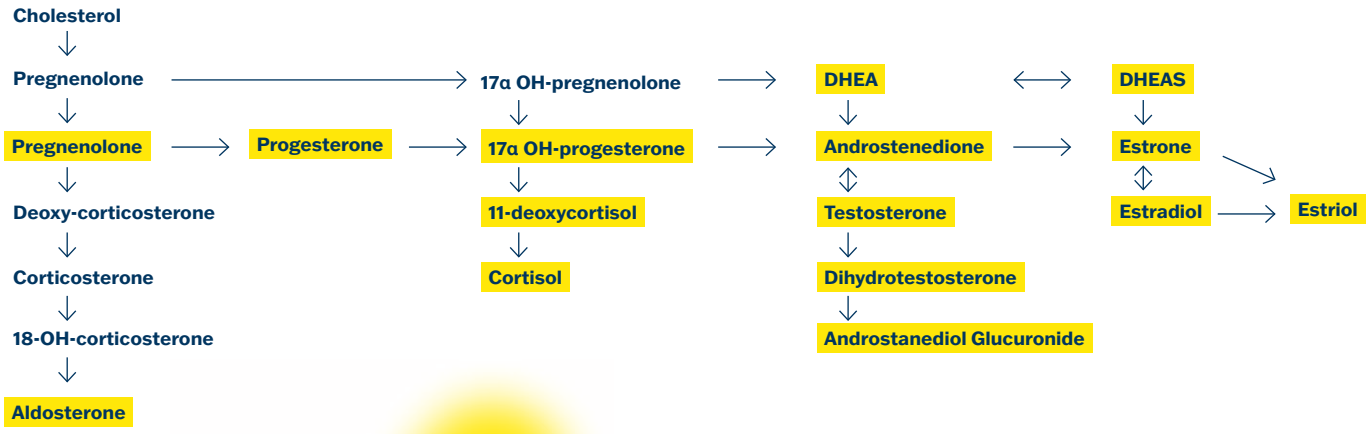
An androgenic steroid produced by the testes, adrenal cortex, and ovaries. While androstenedione is converted metabolically into testosterone and other androgens, they are also the parent structure of estrone.

## Androstenediol and 3α-Diol Glucuronide

Steroid metabolites that are thought to act as the main regulators of gonadotropin secretion.

## Dihydrotestosterone (DHT)

A metabolite of testosterone, and a more potent androgen than testosterone that binds more strongly to androgen receptors. It is produced in the adrenal cortex.




Assays available at DiaSource

| Format | Cat# | Size | Sample type | Sample size (µL) | Control Levels | Range | Sensitivity | Incubation (hours) | Max shelf life (weeks) |
|---|---|---|---|---|---|---|---|---|---|
| **3α-Diol Glucuronide** | | | | | | | | | |
| RIA CT | KIP0151 | 96 T | S - P | 100 | 2 | 0,2-75 ng/mL | 0,05 ng/mL | 2 | 10 |
| **Androstenedione** | | | | | | | | | |
| RIA CT | KIP0451 | 96 T | S - P | 25 | 2 | 0,1-11 ng/mL | 0,03 ng/mL | 1 | 10 |
| **Dehydroepiandrosterone- Sulfate (DHEA-S)** | | | | | | | | | |
| RIA CT | KIP0481 | 96 T | S | 10 | 2 | 1,7-1090 µg/dL | 1,23 µg/dL | 1 | 10 |
| **Dehydroepiandrosterone (DHEA)** | | | | | | | | | |
| RIA CT | KIPB1138 | 100 T | S - P | 300 | 0 | 0,5-35 ng/mL | 0,17 ng /mL | 1 | 8 |
| **Estradiol, 17β (E2)** | | | | | | | | | |
| RIA CT | KIP0629 | 96 T | S | 50 | 2 | 9-3900 pg/mL | 2,7 pg/mL | 3 | 10 |
| **Estrone (E1)** | | | | | | | | | |
| RIA CT | KIPI9100 | 96 T | S - P | 100 | 2 | 15-815 pg/mL | 3,2 pg/mL | 2 | 12 |
| **Follicle Stimulating Hormone (FSH)** | | | | | | | | | |
| IRMA | KIP0841 | 96 T | S - P | 100 | 2 | 0,7-152 mIU/mL | 0,1 mIU/mL | 1 | 9 |
| **Luteinizing Hormone (LH)** | | | | | | | | | |
| IRMA | KIP1311 | 96 T | S | 100 | 2 | 1,8-194 mIU/mL | 0,2 mIU/mL | 1 | 9 |
| **Progesterone (PROG)** | | | | | | | | | |
| RIA CT | KIP1458 | 96 T | S | 50 | 2 | 0,12-36 ng/mL | 0,05 ng/mL | 2 | 10 |
| **Progesterone, 17 α Hydroxy- (17-OHP)** | | | | | | | | | |
| RIA CT | KIP1409 | 96 T | S - P | 25 | 2 | 0,17-14 ng/mL | 0,03 ng/mL | 3 | 10 |
| **Prolactin (PRL)** | | | | | | | | | |
| IRMA | KIP1441 | 96 T | S - P | 25 | 2 | 2,9-205 ng/mL | 0,18 ng/mL | 2 | 9 |
| **Testosterone** | | | | | | | | | |
| RIA CT | KIP1709 | 96 T | S | 50 | 2 | 13,1 - 2250 ng/dL | 0,05 ng/mL | 3 | 10 |
| **Testosterone, Free** | | | | | | | | | |
| RIA CT | KIPI19000 | 96 T | S | 50 | 2 | 0,3-90 pg/mL | 0,08 pg/mL | 2 | 12 |
| **Testosterone, 5 α Dihydro (DHT)** | | | | | | | | | |
| RIA | KIPI9900 | 100 T | S - P | 300 | 2 | 25-2500 pg/mL | 20 pg/mL | 1,50 | 12 |

P=Plasma - S=Serum

# Gastrointestinal Metabolism

The digestive system is composed of the gastrointestinal (GI) tract, or the alimentary canal, salivary glands, the liver, and the exocrine pancreas. The principal functions of the gastrointestinal tract are to digest and absorb ingested nutrients, and to excrete waste products of digestion. Within the GI tract, many of these substances are solubilized and further degraded enzymatically to simple molecules whose form and small size permits their absorption across the mucosal epithelium.

## Gastrin

Gastrin is a hormone produced mainly by specialized endocrine (G) cells of the pyloric antral part of the stomach and is secreted in response to food in the stomach. It acts on histamine-secreting enterochromaffin-like cells and acid-secreting parietal cells in the body of the stomach to increase acid secretion. It may also regulate proliferation of epithelial cells in the stomach and other parts of the gastrointestinal tract. Gastrin secretion is inhibited by gastric acid. When acid secretion is reduced (in patients with pernicious anemia or individuals treated with proton pump inhibitors), plasma gastrin is elevated. There is also increased plasma gastrin in patients with gastrinoma (Zollinger–Ellison syndrome).organs and development of male secondary sex characteristics. Androgens, which were first discovered in 1936, are also called androgenic hormones or testoids. Androgens are also the original anabolic steroids. They are the precursor of all estrogens, the female sex hormones. The primary and most well-known androgen is testosterone.

## Pancreatic Polypetide (PP)

Pancreatic polypeptide (PP), 36-amino acid peptide, may function as an important feedback inhibitor of pancreatic secretion after a meal. It arises from both islet and acinar cells of the pancreas. Release of PP by a meal, primarily protein, occurs in a biphasic manner. The first rapid release occurs as a result of vagal stimulation; the second, more prolonged rise (the so-called intestinal phase) occurs in response to hormonal stimulation, predominantly cholecystokinin. Plasma PP levels increase with age; PP levels are elevated above those of age-controlled normal subjects in diabetic patients and in some patients with pancreatic amine precursor uptake decarboxylase tumors.

## Trypsin

Trypsin is an enzyme in the first section of the small intestine that starts the digestion of protein molecules by cutting long chains of amino acids into smaller pieces. The measurement of trypsin provides a rough estimation of the pancreatic function and is an aids in the diagnosis of acute/chronic pancreatitis, pancreatic tumors, pancreatic, malabsorption etc.

| Format | Cat# | Size | Sample type | Sample size (µL) | Control Levels | Range | Sensitivity | Incubation (hours) | Max shelf life (weeks) |
|---|---|---|---|---|---|---|---|---|---|
| **Gastrin*** | | | | | | | | | |
| RIA | MD302RUO | 100 T | S | 100 | 2 | 15,6-500 pmol/L | 6,3 pmol/L | 3 | 12 |
| **Pancreatic Polypeptide** | | | | | | | | | |
| RIA | RB316 | 100 T | S | 100 | 2 | 6,25-200 pmol/L | 3 pmol/L | 48 | 12 |
| **Trypsin*** | | | | | | | | | |
| RIA | KIRCE07 | 100 T | S | 100 | 1 | 36-1560 ng/mL | 4 ng/mL | 4 | 9 |

* For Research Use Only

# Growth Factors

The term growth factor refers to a naturally occurring protein capable of stimulating cellular proliferation and cellular differentiation. Growth factors are important for regulating a variety of cellular processes. Assessment of growth in stature is an essential part of the pediatric examination. Growth is an important index of physical and mental health and of the quality of the child's psychological environment; chronic problems in any of these areas may be reflected in a decreased growth rate.

## Growth hormone (GH or somatotropin)

Is a polypeptide hormone synthesised and secreted by the anterior pituitary gland which stimulates growth and cell reproduction in humans and other vertebrate animals.

The diseases resulting of GH excess are pituitary tumor, muscle weakness, insulin resistance or even a rare form of Type 2 diabetes, and reduced sexual function. GH deficiency induces growth failure and short stature in children while in adults, it may induce deficiencies of strength, energy, and bone mass, as well as increased cardiovascular risks.

## Somatomedin C (SM-C)

Are polypeptides with high sequence similarity to insulin. IGFs are part of a complex system that cells use to communicate with their physiologic environment. This complex system (often referred to as the IGF "axis") consists of two cell-surface receptors (IGF1R and IGF2R), two ligands (IGF-I and IGF-II), a family of six high-affinity IGF binding proteins (IGFBP 1-6), as well as associated IGFBP degrading enzymes, referred collectively as proteases.

IGF-1 and IGF-II are regulated by a family of proteins known as the IGF-Binding Proteins.
These proteins help to modulate IGF action in complex ways that involve both inhibiting IGF action by preventing binding to the IGF-1 receptor as well as promoting IGF action possibly through aiding in delivery to the receptor and increasing IGF half-life.

## Somatostatin

Is a hormone comprising two peptides, one of 14 amino acids, the other of 28 amino acids. Somatostatin is secreted not only by cells of the hypothalamus but also by delta cells of stomach, intestine, and pancreas. It binds to somatostatin receptors. It is classified as an inhibitory hormone whose main action is to inhibit the release of growth hormone.

## Insulin-like Growth Factor Binding Proteins (IGFBP)

Group of vertebrate secreted proteins, which bind to IGF-I and IGF-II with high affinity and modulate the biological actions of IGFs.

The IGFBP family has six distinct subgroups, IGFBP-1 to 6, based on conservation of gene (intron-exon) organization, structural similarity, and binding affinity for IGFs.

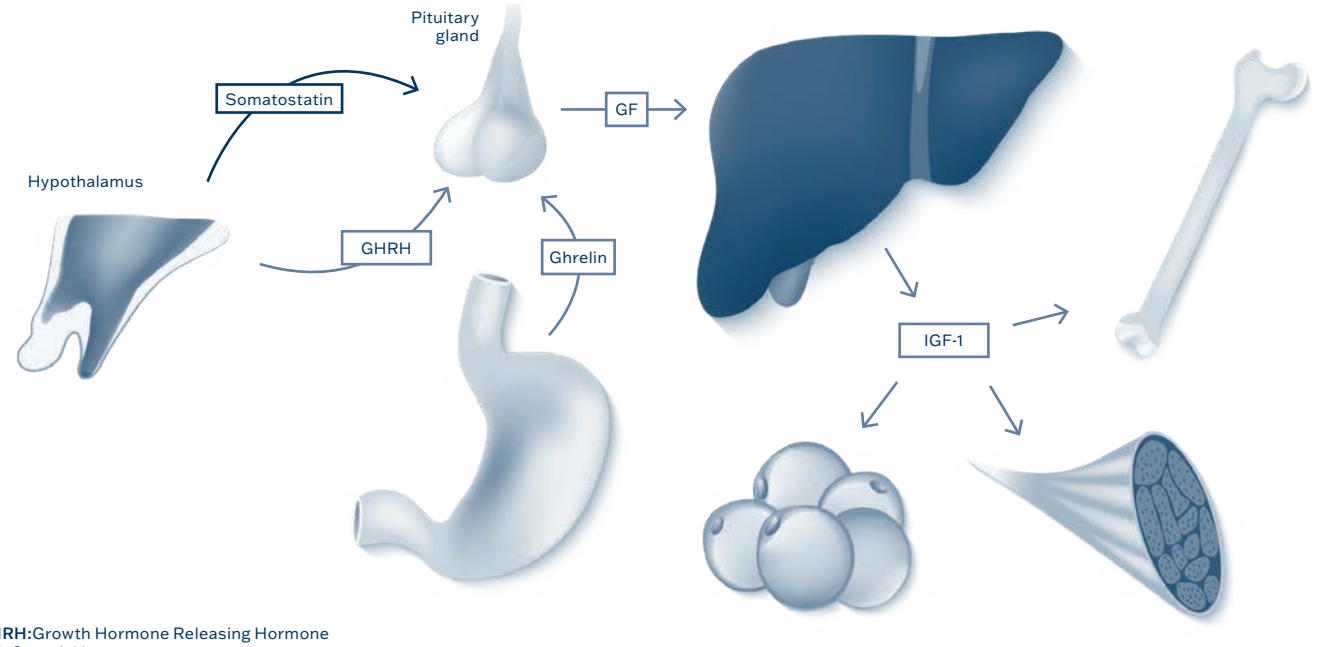
## IGFBP-3

Forms a ternary complex with insulin-like growth factor acid-labile subunit (IGFALS) and either insulin-like growth factor (IGF) I or II. In this form, it circulates in the plasma, prolonging the half-life of IGFs and altering their interaction with cell surface receptors. A single IGFBP-3 determination is an excellent screening parameter for GHD. IGFBP-3 is a good parameter for monitoring the therapeutic efficacy in both GHD an acromegaly.

## The IGFBP-2 concentration is age-dependent in blood

Normal values for healthy individuals (1.5 to > 70 years) were evaluated for this assay. Supplementary parameter to IGFBP-3 in the diagnosis of growth disorders (IGFBP-2/IGFBP-3 ratio), IGFBP-2 is an inhibitor of growth hormone action. Progression-dependent tumor marker in leukaemia, astrocystic CNS tumors, prostate, suprarenal cortex-, hepatocellular and other carcinomas. Anti-aging parameter: IGFBP-2 as a marker of physiological functionality.

## Growth hormone




**GHRH:**Growth Hormone Releasing Hormone
**GH:** Growth Hormone
**IGF-1:** Insulin-like Growth Factor

| Format | Cat# | Size | Sample type | Sample size (µL) | Control Levels | Range | Sensitivity | Incubation (hours) | Max shelf life (weeks) |
|---|---|---|---|---|---|---|---|---|---|
| **Human Growth Hormone (hGH)** | | | | | | | | | |
| IRMA | KIP1081 | 96 T | S | 50 | 2 | 1-120 µIU/mL | 0,04 µIU/mL | 2 | 9 |
| **Somatomedin C (SM-C)** | | | | | | | | | |
| RIA CT | KIP1589 | 96 T | S - P | 100 | 3 | 17,5-1750 ng/mL | 8,75 ng/mL | ON | 6 |
| **Insulin Growth Factor Binding Protein-3 (IGFBP-3)** | | | | | | | | | |
| IRMA | KIP1171 | 96 T | S | 10 | 2 | 380-13395 ng/mL | 27,9 ng/mL | 2 | 12 |
| **Somatostatin*** | | | | | | | | | |
| RIA | RB306RUO | 100 T | P | 1000 | 2 | 3,9-125 pmol/L | 6 pmol/L | ON X 2 | 12 |

*For Research Use Only
ON=Over night - P=Plasma - S=Serum - U=Urine

# Hematology

Hematology markers provide a comprehensive view of a patient's blood composition and function. They serve as diagnostic clues, helping healthcare professionals identify and manage a wide range of medical conditions, from anemias and infections to clotting disorders and leukemia. These markers are essential tools for delivering timely and accurate medical care, enabling early intervention and better patient outcomes.

## Ferritin

Ferritin, a ubiquitous intracellular protein, plays a pivotal role in iron metabolism. Beyond its physiological functions, ferritin serves as an essential biomarker in diagnostic medicine. Ferritin exists in two main forms: serum ferritin and tissue ferritin. Serum ferritin, the soluble form found in blood, reflects the body's iron stores. Its measurement aids in diagnosing and monitoring iron-related disorders like anemia, Hemochromatosis, assessing inflammatory conditions, evaluating liver health, and even contributing to Adult Still's disease diagnosis.

| Format | Cat# | Size | Sample type | Sample size (µL) | Control Levels | Range | Sensitivity | Incubation (hours) | Max shelf life (weeks) |
|---|---|---|---|---|---|---|---|---|---|
| **Ferritin** | | | | | | | | | |
| IRMA | KIPB3492 | 100 T | S - P | 20 | 2 | 4,5-1100 ng/mL | 0,39 ng/mL | 1 | 6 |

S=Serum - P=Plasma

# Hepatic Function

The liver has a significant role in metabolism, digestion, detoxification, and elimination of substances from the body. Diagnostic tests can help determine the area of hepatic injury, and the elevation pattern can help organize a differential diagnosis.

## Type III Procollagen

Concentrations of the N-terminal peptide of type III procollagen (PIIIP) in patients with chronic liver disease help to detect and monitor the various stages of the clinical course of the liver fibrogenesis. Liver fibrosis is one of the most important factors of disturbed liver function. Among several parameters used for this purpose, the aminoterminal PIIIP appears to be the most widely accepted. Studies have shown that PIIIP effectively distinguishes between non-fibrotic and fibrotic liver disease.

| Format | Cat# | Size | Sample type | Sample size (µL) | Control Levels | Range | Sensitivity | Incubation (hours) | Max shelf life (weeks) |
|---|---|---|---|---|---|---|---|---|---|
| **Procollagen III peptide (PIIIP)** | | | | | | | | | |
| RIA | OCFK07-PIIIP | 100 T | S | 20 | 1 | 0.1 -14 U/mL | | 0.1 U/mL | 5 | 6 |
| **UniQ PIIINP*** | | | | | | | | | |
| RIA | 68570 | 100 T | S | 200 | 1 | 1-50 µg/L | | 0.4 µg/L | 2.75 | 4 |

*Not available for Austria, Czech Republic, Germany, France, United Kingdom, Italy, Japan, Netherlands, Norway, Sweden, USA, New Zealand
S=Serum

# Thyroid Function

Measurement of Serum Thyroid Hormones T4/FT4 is the most used thyroid test of all.

The T4 reflects the amount of thyroxine in the blood. If the patient does not take any type of thyroid medication, this test is usually a good measure of thyroid function.

## Measurement of Serum Thyroid Hormones T3/FT3

Thyroxine (T4) represents 80% of the thyroid hormone produced by the normal gland and generally represents the overall function of the gland. The body normally produces antibodies to foreign substances such as bacteria; however, some people are found to have antibodies against their own thyroid tissue. The other 20% is triiodothyronine measured as T3. Sometimes the diseased thyroid gland will start producing very high levels of T3 but still produce normal levels of T4. Therefore measurement of both hormones provides an even more accurate evaluation of thyroid function.

## Measurement of Pituitary Production of TSH

Normally, low levels (less than 5 units) of TSH are sufficient to keep the normal thyroid gland functioning properly. When the thyroid gland becomes inefficient such as in early hypothyroidism, the TSH becomes elevated even though the T4/FT4 and T3/FT3 may still be within the "normal" range.

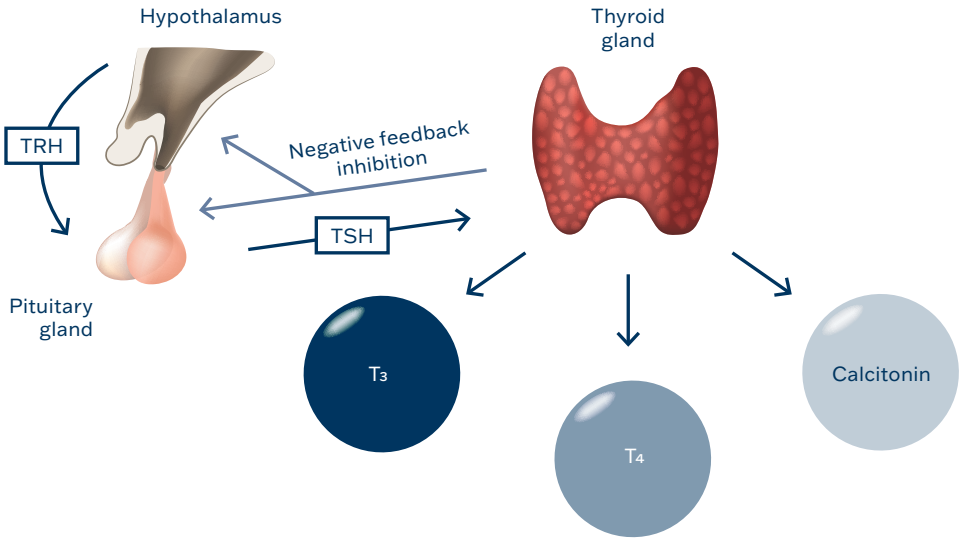
This rise in TSH represents the pituitary gland's response to a drop in circulating thyroid hormone; it is usually the first indication of thyroid gland failure. Since TSH is normally low when the thyroid gland is functioning properly, the failure of TSH to rise when circulating thyroid hormones are low is an indication of impaired pituitary function.

The new "sensitive" TSH test will show very low levels of TSH when the thyroid is overactive (as a normal response of the pituitary to try to decrease thyroid stimulation). Interpretations of the TSH level depends upon the level of thyroid hormone; therefore, the TSH is usually used in combination with other thyroid tests such as the T4/FT4 and T3/FT3.

## Thyroid Antibodies

The body normally produces antibodies against foreign substances such as bacteria; however, some people are found to have antibodies against their own thyroid tissue.
A condition known as Hashimoto's Thyroiditis is associated with a high level of these thyroid antibodies in the blood. Whether the antibodies cause the disease or whether the disease causes the antibodies is not known; however, the finding of a high level of thyroid antibodies is strong evidence of this disease. Occasionally, low levels of thyroid antibodies are found with other types of thyroid disease. When Hashimoto's thyroiditis presents as a thyroid nodule rather than a diffuse goiter, the thyroid antibodies may not be present.

## Thyroid hormones




**TRH:** Thyroid Releasing Hormone
**TSH:** Thyroid Simulating Hormone
**T3:** Triidothyronine hormone
**T4:** Thyroxine hormone

| Format | Cat# | Size | Sample type | Sample size (µL) | Control Levels | Range | Sensitivity | Incubation (hours) | Max shelf life (weeks) |
|---|---|---|---|---|---|---|---|---|---|
| **L-Thyroxine (T4)** | | | | | | | | | |
| RIA CT | KIP1641 | 96 T | S | 20 | 2 | 12,8-500 nmol/L | < 5 nmol/L | 1 | 10 |
| **Free L-Thyroxine (FT4)** | | | | | | | | | |
| RIA CT | KIPB1363 | 100 T | S-P | 25 | 1 | 2,6-83 pmol/L | 0,4 pmol/L | 1 | 8 |
| **Triiodo-Thyronine (T3)** | | | | | | | | | |
| RIA CT | KIP1631 | 96 T | S | 50 | 2 | 0,35-14 nmol/L | 0,15 nmol/L | 1 | 10 |
| **Reverse Triiodo-Thyronine (Reverse T3)** | | | | | | | | | |
| RIA | R-EW-125 | 125 T | S-P | 100 | 1 | 0,02-2,1 ng/mL | 0,014 ng/mL | 3,5 | 9 |
| **Free Triiodo-Thyronine (FT3)** | | | | | | | | | |
| RIA CT | KIPB1579 | 100 T | S-P | 100 | 1 | 2,1-44 pmol/L | 0,5 pmol/L | 2 | 8 |
| **Anti-Thyroglobulin AutoAntibodies (Tg Ab)** | | | | | | | | | |
| RIA CT | R-CI-100 | 96 T | S | 20 | 2 | 20-2000 IU/mL | 6 IU/mL | 1,5 | 9 |
| **Anti-Thyroperoxidase AutoAntibodies (TPO Ab)** | | | | | | | | | |
| RIA CT | R-CO-100 | 96 T | S | 20 | 2 | 40-1000 IU/mL | 7,4 IU/mL | 1,5 | 9 |
| **Thyroid Stimulating Hormone (TSH)** | | | | | | | | | |
| IRMA | KIP1891 | 96 T | S - P | 200 | 2 | 0,10-90 µIU/mL | 0,05 µIU/mL | 2 | 7 |
| IRMA | KIP1894 | 384 T | S - P | 200 | 2 | 0,10-90 µIU/mL | 0,05 µIU/mL | 2 | 7 |
| **TSH Receptor Autoantibody (TRAb)** | | | | | | | | | |
| RIA CT | KIPM2042 | 100 T | S | 100 | 2 | 1 - 50 IU/L | 0,17 IU/L | 2 | 6,5 |
| RIA | TCT-60* | 60 T | S | 100 | 2 | 1-40 IU/L | 0.33 IU/L | 3 | 7 |
| RIA | TCT-100* | 100 T | S | 100 | 2 | 1-40 IU/L | 0.33 IU/L | 3 | 7 |
| **Thyroglobulin (Tg- S)** | | | | | | | | | |
| IRMA Normal | R-CM-100 | 96 T | S - P | 50 | 1 | 1,5-600 ng/mL | 0,18 ng/mL | 20-26 | 9 |
| IRMA Sensitive | | | | 100 | | 0,75-600 ng/mL | | | |

*Not available for Japan, China, Hong Kong, Taiwan, USA, Canada and UK
P=Plasma - S=Serum

# Radioactive Decontaminant Solution

## The next generation of radioactive decontaminants

Designed to effectively remove radioactive contamination from your skin, safely and gently.

## Highly effective on all nuclear medicine isotopes

Bind-It™ is highly effective on Tc99m, I131, I125, I123 and most nuclear medicine isotopes.

## The top 7 reasons to use bind-it hand soap and spray

- Bind-It™ Hand Soap removes the bonding layer of viruses and splits open the outer membrane of the virus or bacteria, killing it. Bind-It then encapsulates the contaminants, holding them in solution. When rinsing or wiping the surface, all the dead germs are washed away
- Bind-It™ Hand Soap removes contamination every time you wash.
- Bind-It™ Hand Soap will not dry your hands like ordinary lab soap.
- Bind-It™ Hand Soap has a fresh, clean scent.
- Bind-It™ Hand Soap is economical and convenient.
  Our touch-free, wall mount dispenser makes it easy.
- Bind-It™ spray does not damage syringe shield windows, L-blocks or fume hoods as older generation of decontaminants do.
- Bind-It™ spray will not corrode metal, plastic or any other surface.

| Product Description | Part number for 1 unit | Part number for a box of 12 bottles |
|---|---|---|
| Bind-It™ Radioactive Decontamination Concentrate (473ml) | LTI004EU-01 | LTI004EU |
| Bind-It™ Spray Cleaner - Designed for Nuclear Medicine (946ml) | LTI030EU-01 | LTI030EU |
| Bind-It™ Hand Soap - Designed for Nuclear Medicine (237ml) | LTI046EU-01 | LTI046EU |
| Bind-It™ Wall Mount Touch-less Automatic Hand Soap Dispenser | LTI049EU | Non applicable |
| Bind-It™ Hand Soap - Designed for Nuclear Medicine - Dispenser refills (946ml) | LTI047EU-01 | LTI047EU |


# Instruments

## Gamma Counter

CAT# : SHIDG02

- Fully automated system provides easy and fast performance with 5 or 10 detectors
- Windows 10 O/S base and touch screen allow easy access for users
- RF-chip contains protocol information which saves user's time and effort selecting protocol information each time
- Saves up to 100 Assay Protocols and collects all assay result date in sequence of date
- Detectors are designed as through-hole type so each detector can be handled seperately. It allows easier maintenance and decontamination of the detecting part
- Worklist with sample information is transmitted from the network to the Gamma Counter
- Compatible Rack System, Automatic Calibration, Automatic Tube detection sensor, Multi Channel Analyzer, cross Talk, Spill Up/Down

## CoNEXT$^{125}$

CAT# : AMPCONEXT125R

- Semi-automatic LAB solution
- The open all-round system for automated pipetting combined with shaker, incubator and wash offers a perfect solution for medium and high throughput RIA labs

For more information contact instrumentation@diasource.be.

# Custom Diagnostic Laboratory Services & Sales Conditions

## ISO 9001 and ISO 13485 approved

The scientists at DiaSource have extensive experience in the development of antibodies and related enzymatic or radioactive assays. They can guide you through each step in the process of purifying, fragmenting, coating and labeling antibodies. High level technicians can be consulted at any time to discuss other services like filling and freeze-drying. We can offer specific and flexible suggestions to enhance the performance of your final product. All services are manufactured under strict ISO-9001 guidelines.

## Services Available

**Coating services**
- Coating of polystyrene tubes individually capped: batch size from 30,000 up to 100,000 tubes with your antibodies according to your coating procedure
- Coating of microtiter plates in sealed aluminum bags with your antibodies according to your coating procedure: batch size from 150 up to 900 microtiter plates
- Primary coated tubes with anti-rabbit, anti-sheep or avidin-streptavidin for RIA-IRMA applications
- Primary microtiter plates with anti-rabbit, anti-sheep, or avidin-streptavidin for ELISA applications

**Filling services**
- From solution preparation to filling, capping and labeling.

**Freeze-drying services**
- Freeze-dry from 0.25ml up to 15ml in glass vials: batch size up to 27,000 vials for 5ml vials.

**Tailored 125I labeling**
- Iodination and purification of your antigen (hapten, peptide, protein) either by gel filtration or HPLC.

**Mabs fragmentation**
- From the antibodies you send us we can produce F(ab')2 fragments on a large scale.

**Labeling Services**
- Labeling of your antibody or antigen (hapten, peptide) with several markers such as peroxidase, biotin tag or other labels.

**Antibody Purification**
- Whatever antibody you send us we can purify it by protein-A, protein-G or caprilic acid precipitation and even by affinity chromatography.

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## General conditions of sales

**Article 1 - Application**
Unless expressly agreed otherwise in writing, these general terms and conditions shall apply to all offers made by DiaSource and to all contracts concluded on the basis of such an offer or on the basis of an order confirmed by it. The client explicitly waives the application of its own general and special terms and conditions in the context of its relationship with DiaSource. DiaSource shall not be bound by contracts concluded through its staff or agents that do not comply with these terms and conditions. DiaSource reserves the right to amend these Terms and Conditions at any time and without prior notice to the client, provided that such amendments are made available to the client by such means as DiaSource deems appropriate. Such changes shall apply to all subsequent offers and contracts made by DiaSource.

**Article 2 - Conclusion of the contract**
An offer by DiaSource is only binding if it is accompanied by an option period, provided that this period has not expired. An order by the client shall be deemed to have been accepted by DiaSource as soon as DiaSource has explicitly confirmed the order in writing.
Each order has its own distinct characteristics, and products ordered by one customer cannot be redirected to another customer. It is the customer's responsibility to check the accuracy of the order and to notify DiaSource immediately of any errors. The customer may not cancel an accepted offer in whole or in part. If the client cancels an accepted offer, the client shall in any event pay the full price of the offer.
DiaSource reserves the right to (i) refuse requests for personalised offers, or requests for modifications to accepted offers; and/or (ii) charge the client for such modifications or personalised offers at the actual cost in force at the time, with a minimum of EUR 40 (excluding VAT).
Without prejudice to the third paragraph of this Article 2, an administration fee of up to EUR 40 (excl. VAT) shall be charged by DiaSource for any order with a value of less than EUR 500 (excl. VAT). DiaSource also reserves the right to suspend, cancel or refuse the order of a customer, in particular in the case where the data communicated by the customer are obviously erroneous or incomplete or where there is a dispute relating to the payment of a previous order.

**Article 3 - Prices and accessories**
Unless expressly agreed otherwise in writing, the prices set by DiaSource are valid for packaged products, which are delivered "Ex Works" (within the meaning of Incoterms 2010) to the registered office of DiaSource.
In addition to the agreed price, and unless otherwise expressly agreed in writing, the customer shall bear the following costs: (i) all costs of insurance, protection, loading, transport and unpacking of the goods (ii) All rates and taxes (including VAT and customs duties) relating to the products supplied or the items mentioned under (i), including those rates and taxes which only become applicable or are increased after the conclusion of the contract. (iii) Any additional costs for DiaSource as a result of an unfavourable increase in exchange rates.
All costs incurred as a result of payments made shall be borne by the client.
DiaSource may unilaterally adjust prices. This revision may lead to both an increase in price and a decrease in price. Such a unilateral price adjustment by DiaSource is only valid if DiaSource duly justifies it on the basis of the relevant parameters (increase in the cost of raw materials, etc.). In any case, this revision can only be applied to a maximum of 80% of the price initially fixed

**Article 4 - Payment**
Unless otherwise agreed, (i) DiaSource shall send a pro forma invoice to the Client, such pro forma invoice shall be paid prior to the date of despatch as confirmed, receipt of payment into the bank account stated on the invoice shall be prior to despatch of the material and (ii) each invoice shall be paid strictly in accordance with the terms of payment set out on the invoice.

Any complaint relating to an invoice must be sent by registered mail to the head office of DiaSource, eight calendar days after its receipt. Otherwise, the client will not be able to dispute the invoice.
Any late payment will result in all debts owed by the client to DiaSource becoming immediately due and payable upon notification by DiaSource.
Interest on the balance of all debts owed by the client to DiaSource that are due and payable shall be payable by operation of law and without notice of default, at the rate mentioned in article 5, paragraph 2 of the Law of 2 August 2002 concerning the fight against late payment in commercial transactions, increased by 3.5%.
All this is without prejudice to (i) the possibility for DiaSource to prove its actual damage and claim compensation, or (ii) the possibility to suspend the continued performance of all other obligations under this (or any other) contract, or to apply any other sanction under common law.

**Article 5 - Retention of title - transfer of risk**
Ownership of each product sold shall only be transferred to the customer after full payment of the price and accessories for this product, as well as any default interest or compensation that may be due as a result of late payment of this price.
Prior to such full payment, and unless expressly agreed otherwise in writing, the customer is prohibited from disposing of the product, encumbering it with securities, or processing or incorporating it in any way whatsoever. During this period, the customer shall ensure that the product is kept safe, insured and stored individually and that it is marked visibly and legibly as the property of DiaSource.
The risk of loss, destruction or damage of the product (also in case of force majeure) shall, however, pass to the client upon delivery of the product.

**Article 6 - Delivery time**
Each delivery period is only valid as an indication. Exceeding the delivery period shall not give rise to any sanctions, unless the parties have expressly agreed in writing that the delivery period is binding (in this case, exceeding the delivery period shall only result in compensation for actual damage, which has been proven and established by both parties, or in the dissolution of the contract, at the earliest one month after receipt by DiaSource of a formal notice of default from the client demanding delivery).

**Article 7 - Unforeseen events**
If, beyond the control of DiaSource, circumstances occur in the purchasing, production and distribution process or in any other necessary process which could not have been foreseen at the time of the conclusion of the contract (e.g. strikes, accidents, abnormal weather conditions, material defects, etc.) and which make the (timely) delivery of the product impossible or seriously impede the fulfilment of any other obligation, DiaSource shall be entitled to dissolve the contract or suspend its obligations, depending on the nature of these circumstances. DiaSource will not assume any liability in such a case and declares that it never accepts such a risk.

**Article 8 - Force Majeure**
DiaSource shall not be held responsible, either contractually or extra-contractually, in the event of temporary or definitive non-performance of its obligations when such non-performance results from a case of force majeure or fortuitous event.
The following events shall be considered as force majeure or fortuitous events 1) the total or partial loss or destruction of the Provider's computer system or its database where either of these events cannot reasonably be directly attributed to the Provider and it is not shown that the Provider failed to take reasonable steps to prevent either of these events, 2) earthquakes, 3) fires, 4) floods, 5) epidemics, 6) acts of war or terrorism, 7) strikes, whether declared or not, 8) lockouts 9) blockades, 10) insurrections and riots, 11) a breakdown in the supply of energy (such as electricity), 12) a failure of the Internet or data storage system, 13) a failure of the telecommunications network, 14) a loss of connectivity to the Internet or telecommunications network on which DiaSource relies, 15) an act or decision of a third party where that decision affects the proper performance of this Agreement or 16) any other cause beyond the reasonable control of DiaSource.

**Article 9 - Complaints**
**9.1 Visible defects**
Complaints concerning visible defects are only admissible if the product has not yet been used and if these complaints are sent in writing to customer.service@diasource.be within 3 working days of receipt of the products and documented by supporting documents (photos, article number, batch number, etc.). After this period, the products will be considered as accepted by the customer, which implies their conformity.
**9.2 Transport**
The customer must check the products immediately after delivery for conformity, correct quantities and visible defects. Complaints will only be taken into consideration if the customer has mentioned these on the signed delivery note. If these damages are not mentioned and described by the client on the transport documents, at the time of acceptance of the delivery, the goods will be considered as delivered without any damage and no claim will be accepted.
DiaSource will not accept any claims for damage caused by a carrier expressly commissioned by the client.
**9.3. Performance Defects**
All complaints regarding performance defects must be sent in writing to products.support@diasource.be.
In the event that the products are stored and shipped in a non-conforming condition, used for a purpose or in a process not approved by DiaSource, no claim will be accepted.
**9.4. Common provisions**
After the discovery of any defect, the customer is obliged to immediately stop using the product in question and to store the products in the correct manner, on pain of inadmissibility of the complaint.
Defective goods may not be returned by the customer without the express prior consent of DiaSource, and must be properly packaged to preserve their quality during return transport.
DiaSource is only obliged to accept returned goods if they have been the subject of a complaint that DiaSource has declared admissible and well-founded.
Once the customer has made a complaint to DiaSource, if the complaint is found to be justified, DiaSource will, at its option, provide a reasonable discount, credit note or replacement product at its expense.
Under no circumstances shall a complaint suspend the obligation to pay.
The following shall also be inadmissible: complaints concerning facts which are not within the competence of DiaSource, complaints concerning an error on the part of the customer, complaints concerning a subjective or ill-considered character of the said complaint.

**Article 10 - Liability / Security / Disclaimer**
DiaSource shall only be liable for hidden defects that fall under its warranty if the client notifies DiaSource of the existence of the defect in writing within 3 working days of the client becoming aware of the defect. In this case, the client may not demand that the sale of the product concerned be rescinded, and DiaSource shall only be liable for (i) the loss in value of the product, as well as, insofar as it is responsible for this, and (ii) the additional damage suffered by the client, if the latter provides proof of this. This compensation (i and ii) may not exceed the price paid by the customer for the product concerned.
The customer undertakes to comply strictly with the Good Distribution Practice (GDP) guidelines applicable to CE marked medical devices. The customer agrees to use the products in a professional manner and in accordance with the instructions provided by DiaSource. The customer agrees to inform DiaSource without delay of any malfunction or change in the characteristics and/or performance of a product purchased from DiaSource. In case of resale of the products by the client to a third party located outside the Belgian territory, the client undertakes to provide this third party with all necessary documents and instructions in the language(s) of the country of export.

**Article 11 - Compensation in case of insolvency of the customer**
If the client is declared bankrupt, or if any other insolvency proceedings, or proceedings similar to insolvency proceedings, are opened in relation to the client, all sums owed by and between DiaSource and the client shall be set off by operation of law on the date the insolvency proceedings are opened, even if these sums are not due, liquid or fully certain on the date the insolvency proceedings are opened.

**Article 12 - Transferability**
The client may not assign its rights and obligations towards DiaSource to a third party (by way of sale, capital contribution, gift, or any other transaction, including the assignment or contribution of a branch of activity or a universality, or a merger, demerger or other corporate restructuring) without the prior written consent of DiaSource.

**Article 13 - Relationship between the parties**
As the parties are independent legal entities, the contract only binds them to each other for the purposes mentioned in the contract. Consequently, the provisions of the contract may not be interpreted as creating any association or partnership between the parties or as conferring any mandate on one party to the other. Furthermore, neither party may bind the other in any way or to any person other than in accordance with the provisions of this contract.

**Article 14 - Illegality**
The possible illegality or invalidity of any article, paragraph or provision (or part of an article, paragraph or provision) shall not affect in any way the legality of the other articles, paragraphs or provisions of these general terms and conditions, nor the remainder of that article, paragraph or provision, unless the contrary intention is evident from the text.

**Article 15 - Headings**
The headings used in these general conditions are for reference and convenience only. They do not affect the meaning or scope of the provisions they refer to.

**Article 16 - Non-waiver**
No failure, neglect or delay by any party to exercise any right or remedy under these terms and conditions shall be construed as a waiver of such right or remedy.

**Article 17 - Applicable law and jurisdiction**
These General Terms and Conditions, as well as all contracts to which they relate, are governed by Belgian law, to the exclusion of Belgian private international law and the Vienna Convention on Contracts for the International Sale of Goods of 11 April 1980 (the Convention on the Limitation Period in the International Sale of Goods of 14 June 1974 remains applicable).
The courts of the district of Walloon Brabant shall have exclusive jurisdiction to hear disputes arising from these general terms and conditions or related to contracts concluded by DiaSource (including pre-contractual disputes) to which they refer.

**Article 18 - Discrepancies between the different language versions**
These general terms and conditions have been drafted in English and French. In case of discrepancies between the different language versions, the French version shall prevail.

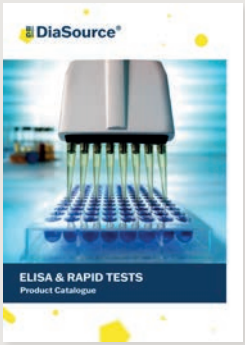
**Article 19 - GDPR & Privacy Policy**
DiaSource is compliant with the General Data Protection Regulation. Our privacy and data protection policy is available on our website www.diasource-diagnostics.com Any questions can be addressed to: GDPR@diasource.be.

## Index by Product Name



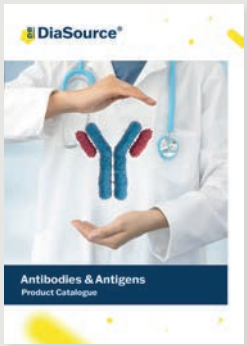
For registration requirements in countries outside of the European market, please contact regulatory.affairs@diasource.be.

# Our other available product catalogues




## ELISA & RAPID TESTS : Product catalogue

- Autoimmunity
- Biogenic Amines & Neurosciences
- Bone Metabolism
- Cancer Markers
- Cardiovascular & Salt Balance
- Diabetes & Metabolism
- Fertility
- Gastrointestinal Metabolism
- Growth Factors
- Inflammation Markers
- Infectious Diseases
- Thyroid Function




## Antibodies & Antigens: Product Catalogue

- Bone Metabolism
- Cancer Markers
- Cardiovascular & Salt Balance
- Diabetes & Metabolism
- Fertility
- Growth Factors
- Gastrointestinal Metabolism
- Inflammation
- Kidney Function
- Prenatal Screening
- Thyroid Function


## Instruments Catalogue
## ELISA - CLIA - RIA - BLOT

**Contact us**

**info@diasource.be**

**or visit our website**

**www.diasource-diagnostics.com**

**For more information scan this QR code**

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