

The background of the entire page is a blue-tinted microscopic image showing various biological structures, including what appear to be antibodies and antigens. A large, semi-transparent white circle is centered in the upper half of the page, containing the main title and logo. The overall aesthetic is clean and scientific.

# ANTIBODIES & ANTIGENS PRODUCT OVERVIEW

by **DIA** *Source*

Proven and Performing

# TABLE OF CONTENTS

Our Company	p. 3
To contact us	p. 4
Monoclonal Antibodies	p. 5
Antigens	p. 6
Anemia	p. 7
Soluble Transferrin Receptor (sTfR)	
Bone metabolism	p. 8
Aggrecan (PG)	
Cartilage Oligomeric Matrix Protein (COMP)	
Cathepsin K	
Osteocalcin (OST)	
Parathyroid Hormone (PTH)	
1,25(OH) <sub>2</sub> Vitamin D	
25OH Vitamin D	
Free 25OH Vitamin D	
Cancer markers	p. 14
Alpha-Fetoprotein (AFP)	
Calcitonin (CT)	
Carcino Embryonic Antigen (CEA)	
Chorionic Gonadotropin Hormone (Free beta-hCG)	
Chromogranin A	
Cardiovascular and salt balance	p. 18
Adrenocorticotrophic Hormone (ACTH)	
Aldosterone	
Angiotensin I	
N-Terminal Proatrial Natriuretic Peptide (NT-ProANP)	
Renin	
Diabetes and metabolism	p. 21
Adiponectin	
Fatty Acid-Binding Protein 4 (FABP4)	
Insulin	
Leptin	
Fertility	p. 24
Chorionic Gonadotropin (HCG)	
Estradiol (E2)	
Estriol (E3)	
Follicle Stimulating Hormone (FSH)	
Luteinizing Hormone (LH)	
Placental Lactogen (HPL)	
Progesterone	
Prolactin (PRL)	
Testosterone	
Free Testosterone	
Growth factors	p. 30
Growth Hormone (HGH)	
Insulin-like Growth Factor (IGF-1)	
Insulin-like Growth Factor Binding Protein-3 (IGFBP-3)	
Inflammation	p. 33
Procalcitonin (PCT)	
Kidney function	p. 34
Cystatin C	
Uromodulin	
Prenatal Screening	p. 35
Placental protein 13 (PP-13)	
Thyroid function	p. 36
Thyroid Stimulating Hormone (TSH)	
Thyroglobulin Autoantibodies (TgAb)	
L-Thyroxine (T4)	
Free T4 (FT4)	
Triiodothyronine (T3)	
Free T3 (FT3)	
Custom Diagnostic Laboratory Services & Sales Conditions	p. 40
Index by Product Name	p. 42

# OUR COMPANY

## 30 YEARS OF EXPERIENCE IN IVD ANTIBODIES AND ANTIGENS

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 RIA and ELISA assays, and ANTIBODIES and ANTIGENS for use in in-vitro diagnostic assays. Primarily, our antibodies and antigens have been developed for our own IVD assays. Since a number of years now, we also supply them to other IVD companies, for use in different assay platforms including RIA, ELISA, CLIA and POCT. The use of these antibodies in DIAsource RIA and ELISA immunoassays for more than 30 years guarantees a high quality and lot-to-lot consistency, and uncompromising quality control. Throughout our own assays projects, our R&D scientists have developed and selected the best matched pairs for sandwich assays, and the best antibody/conjugated antigen pair for the competitive assays. A special focus has been put on sensitivity, selectivity and stability to ensure a long term supply of highly performing material. It is our ambition to use our 30 years of expertise to remain a well-known supplier of Antibodies and Antigens for the IVD market.

## MISSION

Our mission is to develop, manufacture and market a complete panel of quality immunoassays and Antibodies and Antigens, as reliable tools to detect and monitor endocrine disorders. We are dedicated to provide high quality products to deliver uncompromising support to our customers. We strive to meet the needs of our customers 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 developed manual ELISA - and RIA immunoassays for the diagnosis and monitoring of a wide variety of endocrine disorders. We constantly developed specific antibodies and antigens for use in our diagnostic assays. In addition, we offer these antibodies and antigens also to other diagnostic companies. Constantly looking for new technologies and applications, we put our expertise in the development of new antibodies and antigens to measure a number of hormones including i.e. 25OH Total Vitamin D (D2+D3), PTH, Renin, Aldosterone, ACTH, IGFBP-3, TSH, T3, T4 and Calcitonin.

## 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 9001 and 13485 quality manuals. 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.



**Eric Maes**  
Business Segment Manager ELISA,  
Instruments & Antibodies  
DIAsource ImmunoAssays S.A.



**Beatrice de Borman**  
CEO  
DIAsource ImmunoAssays S.A.

# TO CONTACT US

Our people, our professional and experienced Customer Service and Technical Support teams are dedicated to ensure complete customer satisfaction. We take pride in providing helpful and accurate information in a 24-hour turnaround time. Ordering: please see below and consult the 'How to order' section for your local contact.



**CEO**  
Béatrice de Borman  
Tel.: +32 (0) 10 84 99 07  
beatrice.deborman@diasource.be

## 📍 CUSTOMER SERVICE - ORDERING

Tel.: +32 (0)10 84 99 00 - Fax: +32 (0)10 84 99 90-96 - customer.service@diasource.be  
Belgium Free Phone: 0800 159 59 - France Free Phone: 0800 908 443 - France Free Fax: 0800 902 588



**Planning, Logistics & Customer Service Manager**  
Manuelle Jadoul  
Tel.: +32 (0)10 84 99 12  
manuelle.jadoul@diasource.be



**Customers Service Representative**  
Muriel Hirsoux



**Customer Service Representative**  
Sabrina Baio



**Customer Service Representative**  
Isabelle Rosman



**Customer Service Representative**  
M-F Sanchez

## 📍 SALES & MARKETING



**International Sales Director & Business Segment Manager RIA**  
Peter Kerckx  
Mobile: +32 (0)475 57 76 86  
peter.kerckx@diasource.be



**Business Segment Manager ELISA & Instrumentation and Antibodies**  
Eric Maes  
Mobile: +32 (0)479 70 00 71  
eric.maes@diasource.be



**Marketing Project Coordinator**  
Joëlle Bock  
Tel.: +32 (0)10 84 99 13  
joelle.bock@diasource.be



**Product Manager**  
Flore Laurent  
Mobile: +32 (0)472 02 36 47  
Tel.: +32 (10) 84 99 50  
products.support@diasource.be



**Product Manager**  
Valérie Preud'homme  
Mobile: +32 (0)494 71 35 21  
Tel.: +32 (10) 84 99 23  
products.support@diasource.be



**Service Engineer Instruments**  
Albert Rosell  
Mobile: +32 (0)471 32 60 35  
Tel.: +32 (10) 84 99 76  
Instrumentation@diasource.be

## 📍 SHIPPING SUPERVISOR



**Luciana Frasson**  
Tel.: +32 (0)10 84 99 69  
Fax: +32 (0)10 84 99 95  
shipping@diasource.be

# MONOCLONAL ANTIBODIES

Polyclonal antibodies, from sheep or rabbit, have been widely used from the 90s, in Immunoassays. While polyclonal antibodies are simple and inexpensive to produce, they usually lack specificity and suffer from batch to batch variability. Monoclonal antibody production requires high skills and is more expensive. However, a careful selection process ensures a superior specificity profile. Moreover, state of the art production techniques ensure a constant and renewable source of antibodies and all batches are identical.

## 📍 DIAsource MONOCLONAL ANTIBODIES

The DIAsource Monoclonal Antibodies are produced in-house and purified using cutting-edge technologies. The use of these antibodies in DIAsource RIA and ELISA immunoassays for more than 30 years guarantees a high quality and lot-to-lot consistency, and uncompromising quality control. Throughout our own assays projects our R&D scientists have developed and selected the best matched pairs for sandwich assays, and the best antibody/conjugate pair for the competitive assays. A special focus has been put on sensitivity, selectivity and stability to ensure a long term supply of highly performing material.

### The key features of our Monoclonal Antibodies line are:

- Large scale production in state of the art facilities
- Fully automated purification equipment
- Uncompromised quality control in DIAsource assays
- Excellent lot-to-lot consistency
- Constant stock and fast delivery

### Manufactured under ISO 9001 - ISO 13485

### Experienced technical support dedicated to development projects and production troubleshooting

### Our Monoclonal Antibodies product range covers the following areas:

- Bone Metabolism
- Cancer markers
- Cardiovascular & Salt balance
- Diabetes & Metabolism
- Fertility
- Growth Factors
- Inflammation
- Kidney function
- Prenatal screening
- Thyroid Function

Our Monoclonal Antibodies are available in the purified unconjugated, purified fragmented and purified biotin conjugate formats. Contact us for more information about the formats. DIAsource expertise in antibody development and production, along with our expertise in IVD immunoassay development, creates interesting synergies that can help IVD companies bring new assays to the market in a reliable and efficient way.



# ANTIGENS

Antigens can be of two different natures in immunoassays. Sandwich assays for large molecules such as proteins involve antigens for the preparation of the assay calibrators and controls. These antigens are either native or recombinant and identical or very similar to the antigen to be measured in the sample. Competitive assays for small molecules such as steroids also use native antigens in their calibrators and controls. In addition, a specific antigen conjugated to the assay label (HRP, AP, biotin etc.) is also used as the conjugate. The label is attached to a particular position, that matches the structure of the immunogen used for the development of the antibody. As important as the matching antibodies pair for sandwich assay, a matching pair of the antibody and this specific antigen is required for competitive assays.

## ⦿ DIAsource ANTIGENS

The DIAsource Antigens are produced and purified using organic chemistry cutting-edge technologies. The use of these antigens in DIAsource RIA and ELISA immunoassays for more than 30 years guarantees a high quality and lot-to-lot consistency, and uncompromising quality control. Throughout our own assays projects our R&D scientists have developed and selected the best antibody/antigen pairs for the competitive assays.

### The key features of our Antigens line are:

- Large scale production in state of the art facilities
- State of the art purification equipment
- Uncompromised quality control in DIAsource assays
- Excellent lot-to-lot consistency
- Constant stock and fast delivery

Manufactured under ISO 9001 - ISO 13485

Experienced technical support dedicated to development projects and production troubleshooting

### Our pairs of Antibodies and Antigens cover the following areas :

- Bone Metabolism
- Fertility
- Cardiovascular diseases
- Thyroid Function
- Diabetes & Metabolism

Our Antigens are available with different conjugated labels, or with chemical functionalities that allow further conjugation with any label. Contact us for more information about the formats. DIAsource expertise in antibody and antigens development and production, along with our expertise in IVD immunoassay development, creates interesting synergies that can help IVD companies bring new assays to the market in a reliable and efficient way.



# ANEMIA

Anemia is a condition that occurs when the amount of Hb in a person's blood drops below normal. Several routine laboratory tests may be used to help diagnose anemia as well as help to determine the underlying cause.

Depending on the results of these, the medical history of the person, and signs and symptoms, other tests may be done as follow up to help diagnose the cause of anemia and to help guide treatment. sTfR helps to distinguish between anemia caused by iron deficiency or by inflammation or chronic illness.

## ⦿ SOLUBLE TRANSFERRIN RECEPTOR (STFR)

Soluble transferrin receptors (sTfR) are proteins found in blood that can be elevated with iron deficiency. The sTfR test is primarily ordered to help distinguish between anemia that is caused by iron deficiency and anemia that is caused by inflammation or a chronic illness. It is not a routine test but may be ordered if other tests that evaluate the amount of iron in the body do not provide conclusive information.

Ferritin is usually the preferred test to evaluate stored iron, but it is an acute phase reactant, which means that it may be increased with inflammation or with chronic diseases such as autoimmune disorders, some cancers, and chronic infections. In these cases, ferritin may not be a good measure of stored iron. Since sTfR is not an acute phase reactant, it may be ordered as an alternative to ferritin if a chronic illness is present or suspected.

### Antibodies:

Cat#	Size	Type	Clone/Host	Isotype	Format
5362606*	1 mg	Mab	OBV 4	IgG1	Purified Unconjugated

\* A Sandwich assay can be built with this antibody as capture and detection at the same time



# BONE METABOLISM

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

Aggrecan (PG) is being investigated for its role in cartilage deterioration during joint injury, disease, and aging. COMP can be measured for the evaluation of aggressive joint destruction in arthritis. Cathepsin K is a marker of bone resorption.

## AGGREGAN (PG)

Aggrecan (PG) is the predominant proteoglycan species in articular cartilage. It is composed of a core protein of 210 kDa to which over 100 chondroitin sulfate chains, about 20-50 keratan sulfate chains and O-linked as well as N-linked oligosaccharides are covalently attached. The core protein contains three distinct globular domains (G1-G3).

### Antibodies:

Cat#	Size	Type	Clone/Host	Isotype	Format
5114616	1 mg	Mab	969D 4D11 2A9*	IgG1	Purified Unconjugated
5114612					Purified Biotin Conjugated
5114617					Purified F(ab)'2 Unconjugated
5314626			1R1 14A6 3B2*		Purified Unconjugated
5314627					Purified F(ab)'2 Unconjugated

\* Matched pair

### Antigens & Conjugates:

Cat#	Size	Type	Match with	Format
5114618	1 mL	MAB HRP conjugate	5314626, 5314627	Liquid, pure conjugate
4114603	5.5 mL	MAB HRP conjugate	5314626, 5314627	Liquid, ready to use



## CARTILAGE OLIGOMERIC MATRIX PROTEIN (COMP)

Levels of Cartilage Oligomeric Matrix Protein (COMP) in serum can be measured for the evaluation of aggressive joint destruction in arthritis.

It was also presented as a biomarker of liver fibrosis, and has been found to be expressed in tumor tissues from breast, prostate, and colon cancer, and is currently evaluated as an independent prognostic marker in these populations.

Cat#	Size	Type	Clone/Host	Isotype	Format
5362306	1 mg	Mab	OBV 2*	IgG1, Kappa	Purified Unconjugated
5162306			OBV 3*		

\* Matched pair

## CATHEPSIN K

It has been shown that cathepsin K plays a major role in the resorption of the bone matrix by osteoclasts.

Cathepsin K can also be considered a novel marker of obesity and a target for the inhibition of adipose mass growth.

### Antibodies:

Cat#	Size	Type	Clone/Host	Isotype	Format
5362806	1 mg	Mab	OBV 5	IgG2b	Purified Unconjugated

## OSTEOCALCIN (OST)

Osteocalcin or bone Gla protein (B.G.P) is the major non-collagen protein of the bone matrix. It has a molecular weight of 5800 Da and contains 49 amino-acids, including 3 residues of gamma carboxyl glutamic acid. Osteocalcin is synthesized in the bone by the osteoblasts. After production, it is partly incorporated in the bone matrix and the rest is found in the blood circulation. The exact physiological function of osteocalcin is still unclear. A large number of studies show that the circulating levels of osteocalcin reflect the rate of bone formation.

### Clinical application:

The determination of the blood levels of osteocalcin is valuable for:

- The identification of women at risk of developing osteoporosis
- Monitoring bone metabolism during the perimenopause and postmenopause
- Monitoring bone metabolism during hormone replacement therapy and treatment of premenopausal women with LHRH agonists
- Monitoring bone metabolism in patients with growth hormone deficiency, hypothyroidism, hyperthyroidism, chronic renal failure

## Antibodies:

Cat#	Size	Type	Clone/Host	Isotype	Format
5113806	1 mg	Mab	002/12 BD7*	IgG1, Kappa	Purified Unconjugated
5113817					Purified F(ab)'2 Unconjugated
5313806			Purified Unconjugated		
5313808					Purified Biotin Conjugated

\* Matched pair

## Antigens & Conjugates:

Cat#	Size	Type	Match with	Format
5113818	50 µL	MAB HRP conjugate	5313806, 5313808	Liquid, pure conjugate
4113822	400 µL	MAB HRP conjugate	5313806, 5313808	Liquid, concentrate
4113825	11 mL	Dilution buffer for 4113822	NA	Liquid, ready to use

## ⊙ PARATHYROID HORMONE (PTH)

Human parathyroid hormone (hPTH) is a major physiological regulator of phosphocalcic metabolism. hPTH increases serum calcium concentrations by its actions on kidney (enhancing tubular Ca<sup>++</sup> reabsorption and phosphate excretion) and bone (stimulating osteoclastic activity and bone resorption). It indirectly affects intestinal absorption of Ca<sup>++</sup> by stimulating renal 1 $\alpha$ -hydroxylation of 25 hydroxyvitamin D. The release of PTH is controlled in a negative feedback loop by the serum concentration of Ca<sup>++</sup>.

## Clinical application:

The measurement of intact hPTH is used to establish the diagnosis of primary hyperparathyroidism by demonstrating elevated serum levels of bioactive PTH. It allows documenting the occurrence of secondary hyperparathyroidism in patients with Vit.D deficiency, intestinal malabsorption, or renal failure. In this last situation, the absence of interference with the inactive carboxyl-terminal fragments is especially valuable. The specificity and high sensitivity of the assay also allows differentiating clearly low serum PTH levels in hypoparathyroidism or in tumor-induced hypercalcaemia.

## Antibodies:

Cat#	Size	Type	Clone/Host	Isotype	Format
5114906	1 mg	Mab	77B 14H5 1C7	IgG1, Kappa	Purified Unconjugated
5314926			OBP 1*	IgG1	

\* Matched pair

## Antigens & Conjugates:

Cat#	Size	Type	Match with	Format
5114918	100 µL	MAB HRP conjugate	-	Liquid, pure conjugate
4114803	11 mL	MAB HRP conjugate	-	Liquid, ready to use

## ⊙ 1,25(OH)<sub>2</sub> VITAMIN D

1,25(OH)<sub>2</sub> Vitamin D is the biologically active form of Vitamin D, and binds to the Vitamin D Receptor (VDR). It originates from the hydroxylation of 25OH Vitamin D, and its production is under the control of PTH. The measurement of 1,25(OH)<sub>2</sub> Vitamin D is essentially used in the assessment of Vitamin D status in patients with renal disease, but also in renal transplant recipients, in adults under 1OH Vitamin D treatment, in children under therapy known to affect bone mineral status, in children with bone tumors, and in the diagnosis of hypophosphatemic rickets/osteomalacia.

Our 1,25(OH)<sub>2</sub> Vitamin D Monoclonal Antibodies recognized the two forms, D2 and D3, of the molecule, which is a must-have nowadays.

## Antibodies:

Cat#	Name	Size	Type	Subtype	Clone/Host	Format
5319306	Monoclonal Antibody against 1,25(OH) <sub>2</sub> Vitamin D2/D3	1mg	Monoclonal Antibody <sup>1</sup>	Tail	BA2	Purified, Unconjugated
5319316					283/C4 GF3 Mouse	
5319256					EG4	

## Antigens & Conjugates:

Cat#	Name	Size	Type	Subtype	Clone/Host	Format
5019220	1,25(OH) <sub>2</sub> Vitamin D antigen - carboxylic acid	1mg	Antigen/Conjugate <sup>1</sup>	Tail	NA	Purified, Carboxylic acid (COOH)
5019221	1,25(OH) <sub>2</sub> Vitamin D antigen - BSA					Purified, BSA conjugate
Please contact us	1,25(OH) <sub>2</sub> Vitamin D antigen - amino					Purified, Amino (NH <sub>2</sub> )
Please contact us	1,25(OH) <sub>2</sub> Vitamin D antigen - biotin					Purified, Biotin conjugate

\*In 2009, DIALsource Immunoassays has patented Mouse Monoclonal Antibodies, based on a proprietary Vitamin D hapten, recognizing both 25OH Vitamin D3 and 25OH Vitamin D2.  
1. Matching 1,25(OH)<sub>2</sub> Vitamin D pairs.

## 25OH VITAMIN D

25OH Vitamin D is produced from Vitamin D, in the liver, through the action of an enzyme. It represents the storage form of Vitamin D in the body, and is metabolized to the active 1,25(OH)<sub>2</sub> Vitamin D under the control of PTH. The measurement of 25OH Vitamin D is the best test to assess Vitamin D deficiency in the general and pathological population. It is also used to monitor Vitamin D supplementation, and to identify hypervitaminosis D.

Our 25OH Vitamin D Monoclonal Antibodies recognized the two forms, D2 and D3, of the molecule, which is a must-have nowadays.

In addition, we have developed a specific collection of Vitamin D analogues that pair with our antibodies and from other antibodies from the market.

Furthermore, DIAsource offers a wide panel of unique displacement solutions, mandatory to release 25OH Vitamin D from its binding proteins, that are compatible with most of the 25OH Vitamin D antibodies.

### Antibodies:

Cat#	Name	Size	Type	Subtype	Clone/Host	Format
5319706	Monoclonal Antibody against 25OH Vitamin D2/D3*	1mg	Monoclonal Antibody <sup>1</sup>	Tail	LMBP 7013CB	Purified, Unconjugated
5319716					LMBP 7012CB	
5319726					LMBP 7011CB	
5319835	Polyclonal Antibody against 25OH Vitamin D2/D3	100µl	Polyclonal Antibody <sup>1</sup>	Tail	Rabbit	Crude

### Antigens & others:

Cat#	Name	Size	Type	Subtype	Clone/Host	Format
5019700	Vitamin D derivative - Carboxylic acid	100µg/1mg	Antigen/Conjugate <sup>1</sup>	Tail	NA	Purified, Carboxylic acid (COOH)
5019701	Vitamin D derivative - BSA conjugate					Purified, BSA conjugate
5019703	Vitamin D derivative - amino					Purified, Amino (NH <sub>2</sub> )
5019708	Vitamin D derivative - biotin conjugate					Purified, Biotin conjugate
5019502	Vitamin D antigen - 3-carboxylic acid	1mg	Antigen/Conjugate <sup>2</sup>	Position-3	NA	Purified, Carboxylic acid (COOH)
5019503	Vitamin D antigen - 3-amino					Purified, Amino (NH <sub>2</sub> )
5019504	Vitamin D antigen - 3-biotin					Purified, Biotin conjugate
3019702	Vitamin D Release Solution - 10 solutions screening kit	1 kit	Release Solution	NA	NA	Liquid, ready to use

\*In 2009, DIAsource Immunoassays has patented Mouse Monoclonal Antibodies, based on a proprietary Vitamin D hapten, recognizing both 25OH Vitamin D3 and 25OH Vitamin D2.  
1. Matching 25OH Vitamin D pairs – Tail. 2. Matching with 25OH Vitamin D antibodies - position-3, from the market.

## FREE 25OH VITAMIN D

25OH Vitamin D is a hydrophobic molecule, and circulates on the Vitamin D Binding Protein (VDBP) and Albumin. A tiny fraction is not bound to these binding proteins, and is called Free 25OH Vitamin D. The measurement of Free 25OH Vitamin D is a better marker of Vitamin D deficiency in conditions in which the concentration of VDBP is altered. This includes pregnancy, liver and renal disease, critical illness and proteinuria.

### Antibodies:

Cat#	Name	Size	Type	Subtype	Clone/Host	Format
5319706	Monoclonal Antibody against 25OH Vitamin D2/D3*	1mg	Monoclonal Antibody <sup>1</sup>	Tail	LMBP 7013CB	Purified, Unconjugated
5319716					LMBP 7012CB	
5319726					LMBP 7011CB	
5319835	Polyclonal Antibody against 25OH Vitamin D2/D3	100µl	Polyclonal Antibody <sup>1</sup>	Tail	Rabbit	Crude

### Antigens & Conjugates:

Cat#	Name	Size	Type	Subtype	Clone/Host	Format
5019700	Vitamin D derivative - Carboxylic acid	1mg	Antigen/Conjugate <sup>1</sup>	Tail	NA	Purified, Carboxylic acid (COOH)
5019700-100		100µg				
5019701	Vitamin D derivative - BSA conjugate	1mg				
5019701-100		100µg				Purified, BSA conjugate
5019703	Vitamin D derivative - amino	1mg				
5019703-100		100µg				Purified, Amino (NH <sub>2</sub> )
5019708	Vitamin D derivative - biotin conjugate	1mg				
5019708-100		100µg				Purified, Biotin conjugate

# CANCER MARKERS

Tumour or cancer markers are produced either by the tumour itself or by the body in response to the presence of cancer or certain non-cancerous benign conditions.

AFP is used in the follow-up management of patients undergoing cancer therapy. Calcitonin helps in the diagnosis and follow-up of medullary thyroid carcinoma and of MEN type II. CEA is used in the monitoring of colorectal cancer and selected other cancers. Free bhCG is an aid in the diagnosis of testicular tumors, ovarian germ cell tumors, and teratomas, mainly.

## ⊙ ALPHA-FETOPROTEIN (AFP)

α-Fetoprotein (AFP) is a 70.000 Da MWV oncofetal protein synthesized by liver parenchymal cells, yolk sac and gastrointestinal tract of human fetus. The peak of AFP concentration occurs between weeks 12 and 15 of gestation. After birth AFP concentration in plasma rapidly decreases to less than 5 IU/ml. AFP levels are elevated in the following clinical situation:

The main clinical applications of measurements of AFP are found in the monitoring of cancer following treatment. However, AFP measurement may also be of clinical interest in monitoring of pregnancy when applied to serum or amniotic fluid.

- Cancer
- Hepatocellular carcinoma
- Teratocarcinomas and embryonal cell carcinoma of testis and ovaries
- Yolk sac tumor
- Other cancers (less than 5 %)
- Viral diseases
- Acute hepatitis (usually < 100 IU/ml)
- Chronic active hepatitis (usually < 100 IU/ml)

### Antibodies:

Cat#	Size	Type	Clone/Host	Isotype	Format
5100806	1 mg	Mab	89B 2/21 G3*	TBD	Purified Unconjugated
5300806		Mab	89B 2/23H5 3H3 2C10*	IgG1, kappa	
5300808					Purified Biotin Conjugated

\* Matched pair

## ⊙ CALCITONIN (CT)

Calcitonin(CT) is a 32 amino acid peptide hormone secreted by the para-follicular C-cells of the thyroid gland under serum calcium control. After acute administration this peptide acts as a potent hypocalcemic and hypophosphatemic hormone by increasing renal calcium clearance and reducing bone resorption. However its precise physiological role...

### The measurement of CT is used for:

- Diagnosis of medullary thyroid carcinoma (MTC)
- Follow up of malignant tumors, to check the success of surgery and to monitor for recurrence
- Diagnosis of the preclinical cases of the familial forms of MTC (MEN II or Sipple syndrome) by the use of stimulation tests (calcium or pentagastrin)
- Study of the pathophysiology of the calcium-phosphate and bone metabolism

### Antibodies:

Cat#	Size	Type	Clone/Host	Isotype	Format		
5104206	1 mg	Mab	379A 6H11 3E4	IgG2a	Purified Unconjugated		
5104236			IF2 3G11 AC9*	IgG1, kappa			
5104237			379A 3B1 1C10	IgG1	Purified Unconjugated		
5304206							
5304226					CB1*	IgG1, kappa	Purified Biotin Conjugated
5304228							

\* Matched pair

### Antigens & Conjugates:

Cat#	Size	Type	Match with	Format
5104238	50 µL	MAB HRP conjugate	5304226, 5304228	Liquid, pure conjugate
4104223	125 µL	MAB HRP conjugate		Liquid, concentrate
4104225	6 mL	Dilution buffer for 4104223	NA	Liquid, ready to use



## ⊞ CARCINO EMBRYONIC ANTIGEN (CEA)

CEA is a 200.000 Daltons oncofetal glycoprotein expressed by normal tissues during the first six months of fetal life. Later on the expression of CEA by normal cells becomes largely repressed except in cancer tissues of various cell types, which may secrete large amounts of this oncofetal protein into the circulation. Widely accepted as a useful adjunct for monitoring the course of cancer diseases, CEA should not be regarded as a tumor-specific marker because it is still secreted in small amounts by certain normal tissues during adult life, with small serum level increases in case of benign diseases such as cirrhosis, hepatitis, inflammatory bowel diseases, renal failure and in heavy smokers. Therefore, the measurement of CEA serum concentration for diagnostic purposes must be considered with great care.

### Clinical application:

- Monitoring of cancer diseases
- Diagnostic adjunct in cancer
- Prognostic adjunct in cancer

Cat#	Size	Type	Clone/Host	Isotype	Format
5103306	1 mg	Mab	88B II35F10 C4*	IgG1	Purified Unconjugated
5103317					Purified F(ab)'2 Unconjugated
5303306			4D4 A4*		Purified Unconjugated

\* Matched pair

## ⊞ CHORIONIC GONADOTROPIN HORMONE (FREE BETA-HCG)

The chorionic gonadotropic hormone is synthesised by the syncytiotrophoblast of the placenta all along the pregnancy and is released in the blood flow as soon as the 9th day following ovulation. The hCG has biologic characteristics similar to the LH. During pregnancy, this placental hormone stimulates the remaining corpus luteum that secretes oestrogen and progesterone for the first three months of the pregnancy.

### Clinical application:

**Diagnostic and monitoring test in pregnancy:** hCG and its free subunits  $\alpha$  and  $\beta$  appear in the serum and urine of pregnant women about 9 days following ovulation. The Free  $\beta$ hCG level then increases rapidly to reach a peak between the 8th and the 12th week.

**Tumour marker test in trophoblastic tumours:** hydatiform moles and choriocarcinomas may secrete large amounts of native hCG and its two free subunits  $\alpha$  and  $\beta$  into the peripheral blood circulation

**Tumour marker test in non-trophoblastic cancers:** 10 to 15 % of the breast, lung, and digestive tract cancers release hCG and/or either of its two constitutive subunits  $\alpha$  and  $\beta$ .

### Antibodies:

Cat#	Size	Type	Clone/Host	Isotype	Format
5110006	1 mg	Mab	981A 2G7	IgG1, Kappa	Purified Unconjugated
5110017					Purified F(ab)'2 Unconjugated
5310036			979A 3E8 G4 AC11*		Purified Unconjugated
5310038					Purified Biotin Conjugated
5110026			981A 3G6*		Purified Unconjugated
5110027					Purified F(ab)'2 Unconjugated

\* Matched pair

## ⊞ CHROMOGRANIN A

Chromogranin A is an acidic protein located in secretory vesicles of neurons and endocrine cells. It is a precursor to several functional peptides which negatively modulate the neuroendocrine function of releasing or nearby cells (autocrine and paracrine). As CGA is a useful biomarker throughout the disease course of the patient, CGA assay are used for investigation in an extensive amount of clinical trials. CGA is for instance used in the diagnosis and monitoring of carcinoid tumors and other neuroendocrine tumors.

### Antibodies:

Cat#	Size	Type	Clone/Host	Isotype	Format
5137906	1 mg	Mab	1H6	IgG1	Purified Unconjugated
5337926			2E8		

### Antigens & Conjugates:

Cat#	Size	Type	Clone/Host	Isotype	Format
5137918	0,1ml	Mab HRP Conjugated	N/A	N/A	Purified HRP Conjugated

# CARDIOVASCULAR AND SALT BALANCE

ACTH is used in the differential diagnosis of hypercortisolism and hypocortisolism, e.g. caused by Cushing or Addison disease, and certain tumours. Aldosterone and Renin are typically measured together, and their ratio is the most sensitive means of differentiating primary from secondary causes of hyperaldosteronism. Angiotensin I is involved in hypertension, and NT-ProANP is a marker of heart failure and sepsis.

## ADRENOCORTICOTROPIC HORMONE (ACTH)

Adrenocorticotrophic hormone (ACTH or corticotrophin) is a polypeptide hormone synthesised (from POMC, pro-opiomelanocortin) and secreted from corticotropes in the anterior lobe of the pituitary gland in response to the hormone corticotrophin-releasing hormone (CRH) released by the hypothalamus. It consists of 39 amino acids with a molecular weight of 4540 Da. ACTH regulates steroid synthesis by the adrenal cortex. ACTH stimulates the secretion of cortisol from the adrenal glands. Cortisol and other glucocorticoids increase glucose production, inhibit protein synthesis and increase protein breakdown, stimulate lipolysis, and affect immunological and inflammatory responses. Too much ACTH can result in overproduction of cortisol which can cause Cushing's syndrome. Too much ACTH can be caused by benign pituitary adenoma. Other causes of Cushing's syndrome (too much cortisol) include ectopic production of ACTH as encountered in some lung tumors and benign and malignant adrenal tumors. The most common cause of Cushing's syndrome is exogenous ingestion of glucocorticoids.

### Antibodies:

Cat#	Size	Type	Clone/Host	Isotype	Format
5300696	1 mg	Mab	180/A2 LF3/BC8*	IgG1, Kappa	Purified Unconjugated
5100696			OBP 2*		

\* Matched pair

## ALDOSTERONE

Aldosterone stimulates sodium transport across cell membranes, particularly in the distal renal tubule where sodium is exchanged for hydrogen and potassium. Secondly, aldosterone is important in the maintenance of blood pressure and blood volume.

Measurement of Aldosterone is used for investigation of primary aldosteronism (eg, adrenal adenoma/carcinoma and adrenal cortical hyperplasia) and secondary aldosteronism (renovascular disease, salt depletion, potassium loading, cardiac failure with ascites, pregnancy, Bartter syndrome).

Aldosterone and Renin or Plasma Renin Activity (PRA) are often measured concomitantly. A high ratio of serum aldosterone to plasma renin activity (PRA) in ng/mL per hour, is a positive screening test result, a finding that warrants further testing.



### Antibodies:

Cat#	Size	Type	Clone/Host	Isotype	Format
5331225	1 mL	PoAb	NA	NA	Crude
5331235					

### Antigens & Conjugates:

Cat#	Size	Type	Match with	Format
1302615-V	2 mg	Antigen - COOH	5331225, 5331235	Solid
1302616	2 mg	Antigen - BSA	5331225, 5331235	Liquid

## ANGIOTENSIN I

Angiotensin is a peptide hormone that causes vasoconstriction and an increase in blood pressure. It is part of the renin-angiotensin system, which is a major target for drugs that raises blood pressure. Angiotensin also stimulates the release of aldosterone, which also drives blood pressure up.

Angiotensin I is formed by the action of renin on angiotensinogen. Therefore the measurement of Angiotensin I is also a measurement of the Plasma Renin Activity (PRA). Both terminologies are often used to design the same assay.

Angiotensin I is further converted into Angiotensin II and III, the low cross-reactivity of the Antibody for these two metabolites is therefore critical.

### Antibodies:

Cat#	Size	Type	Clone/Host	Isotype	Format
5353616	1 mg	PoAb	Rabbit	NA	Purified Unconjugated

### Antigens & Conjugates:

Cat#	Size	Type	Match with	Format
1302619	2 mg	Antigen	5353616	Lyophilized powder

## ⊙ N-TERMINAL PROATRIAL NATRIURETIC PEPTIDE (NT-ProANP)

NT-ProANP serves as a helpful marker for the diagnosis of pediatric heart failure and follow-up of treatment and after operation in children.

NT-proANP is also discussed as valuable marker for sepsis, or risk stratification in heart failure.

### Antibodies:

Cat#	Size	Type	Clone/Host	Isotype	Format
5362406	100 µg	PoAb	Sheep	NA	Purified Unconjugated

## ⊙ RENIN

Renin is a proteolytic acidic enzyme produced and secreted by the juxtaglomerular cells. It cleaves angiotensinogen into angiotensin I (inactive), which ultimately leads to the production of angiotensin II (active). Therefore, renin, which has a limiting effect on the production of angiotensin, is a key-factor in the regulation of arterial pressure and hydrosodic metabolism.

As most enzymes which act outside of the cells in which they are synthesized, renin exists in both inactive and active forms. Inactive renin (prorenin) which is found in plasma, amniotic fluid and in the kidney, can be activated in different ways (cryoactivation, acidification or partial proteolysis) which expose the active site of the enzyme. Inactive renin can account for up to 90 % of the total renin in the circulation. However, it is the active renin which provides the medium through which biological activity takes place.

### Antibodies:

Cat#	Size	Type	Clone/Host	Isotype	Format
5115306	1 mg	Mab	244/1 RH12*.*	IgG1, Kappa	Purified Unconjugated
5315356			257/A5 GC10 AH4 BA7#		
5315366			244/2 OE6*		
5315367					Purified F(ab') <sub>2</sub> Unconjugated

\*.\* Matched pair

### Antigens & Conjugates:

Cat#	Size	Type	Match with	Format
5115318	50 µL	MAB HRP conjugate	5315366, 5315367	Liquid, pure conjugate
4115303	50 µL	MAB HRP conjugate	5315366, 5315367	Liquid, concentrate
4115305	11 mL	Dilution buffer for 4115303	NA	Liquid, ready to use

# DIABETES AND METABOLISM

A low Adiponectin result might suggest Type 2 diabetes mellitus or metabolic syndrome. Circulating FABP4 levels are associated with several aspects of metabolic syndrome and cardiovascular disease. Insulin is used in the management of diabetes and in the diagnosis of insulinoma. The measurement of Leptin can be used in the management of obesity.

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

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.

## ⊙ ADIPONECTIN

Adiponectin is a 30kDa protein which percentage in serum proteins is 0.01%. It is mainly synthesized by Adipocytes, but also muscle cells and hepatocytes have the ability to synthesize Adiponectin. Until now, IGF-I is the only known natural inducer of the synthesis. It consists of a Collagen-like N-terminal and a globular C-terminal domain. In vivo Adiponectin appears with different oligomers. Beside the trimer and dimer also high molecular multimers exist (1-3). Up to now two different receptors are known, both receptors are ubiquitarily expressed, though the distribution in the tissues varies.

The Adiponectin Receptor 1 (AdipoR1) is especially in muscle- and AdipoR2 in liver tissue synthesized. The significance for the human organism is not clear until now. First studies show, that adiponectin correlates negatively with BMI and thus it could have relevance for the energy metabolism for example through the regulation of fatty acid oxidation. Beside the correlation with BMI, Adiponectin level is associated with the Insulin-Resistance and so also linked with Type II Diabetes.

Adiponectin is associated also with glucose- and lipometabolism. Furthermore it is involved in inflammatory processes and therewith it is of importance for appearance of arteriosclerosis and coronaritis, thus the determination of Adiponectin level in plasma could serve to estimate the risk of coronary disease. Beside this Adiponectin influences further physiological processes as for example the angiogenesis.

### Antibodies:

Cat#	Size	Type	Clone/Host	Isotype	Format
5300726	1 mg	Mab	236/1 DC12	IgG1, Kappa	Purified Unconjugated
5300746			236/1 GE9	IgG2b, Kappa	
5362016			OBV 1	IgG1, Kappa	
5362006*	100 µg	PoAb	Sheep	NA	

\* A Sandwich assay can be built with this antibody as capture and detection at the same time



## ▷ FATTY ACID-BINDING PROTEIN 4 (FABP4)

Fatty acid-binding protein 4 (FABP4), known as adipocyte FABP (A-FABP) or aP2, plays important roles in the development of insulin resistance and atherosclerosis in relation to metabolically driven low-grade and chronic inflammation, referred to as 'metaflammation'. Circulating FABP4 levels are associated with several aspects of metabolic syndrome and cardiovascular disease. Pharmacological modification of FABP4 function would be novel therapeutic strategies for several diseases, including obesity, diabetes mellitus, atherosclerosis and cardiovascular disease.

### Antibodies:

Cat#	Size	Type	Clone/Host	Isotype	Format
5362106*	100 µg	PoAb	Sheep	NA	Purified Unconjugated

\* A Sandwich assay can be built with this antibody as capture and detection at the same time

## ▷ INSULIN

Insulin, a polypeptide hormone with a molecular weight of 5800, is secreted by the beta cells of the islets of Langerhans from the pancreas. Insulin possesses a wide spectrum of biological actions. It stimulates cellular glucose uptake, glucose oxydation, glycogenesis, lipogenesis, proteogenesis and the formation of DNA and RNA. Insulin plays a key role in the regulation of plasma glucose levels (hepatic output inhibition, stimulation of peripheral glucose utilisation).

The resulting hypoglycemic effects of insulin are counterbalanced by hormones with hyperglycemic effects (glucagon, growth hormone, cortisol, epinephrine). Insulin secretion is mainly controlled by the plasma glucose levels: hyperglycemia induces a prompt and important increase in circulating insulin levels.

Neural influences, as well as various metabolic and hormonal factors (amino acids, glucagon, gastrointestinal hormone) also participate to the control of insulin secretion. Type I (insulin dependent: "juvenile") diabetes is due to a destruction of the beta cells, with a consequence of absolute lack of insulin.

In type II (noninsulin-dependent: "maturity onset") diabetes, insulin resistance may play an important role; however after several years of evolution, beta-cells failure may occur, leading to a relative insulinopenia requiring, in some cases, insulin administration. Insulin resistance is associated with high circulation levels of the hormone.

The most common case of insulin resistance is represented by obesity. Various endocrinopathies (acromegaly, Cushing syndrome) as well as rare cases of insulin receptor defects or cases with anti-insulin receptor antibodies are associated with glucose intolerance or even diabetes due to insulin resistance.

The determination of plasma insulin levels is an important parameter in the diagnosis of hypoglycemia. Insulin levels are high in cases of insulinoma (beta-cell tumor). Functional postprandial hypoglycemia may also be associated with inappropriate insulin release to carbohydrate intake.

### Insulin levels are determined either in the fasting state or during dynamic test:

- Stimulation test: carbohydrate rich meal, oral glucose tolerance test (OGTT), arginin infusion, tolbutamide or other sulfonylureas administration.
- Inhibition test: fasting, somatostatine infusion

### Clinical application of insulin determination:

- Determination of the beta-cell reserve during glucose tolerance test or after a carbohydrate rich meal, as a guide for the instauration of insulin therapy
- Contribution to the diagnosis of insulin and non-insulin-dependent diabete
- Characterisation and follow-up of states of glucose intolerance
- Diagnosis and study of cases of insulin resistance
- Diagnosis of insulinoma and other causes of hypoglycemia

### Antibodies:

Cat#	Size	Type	Clone/Host	Isotype	Format
5112526	1 mg	Mab	336F 20B11 AF2 BA4*	IgG1	Purified Unconjugated
5312506			86/A 2/5E4*		
5312508					Purified Biotin Conjugated

\* Matched pair

### Antigens & Conjugates:

Cat#	Size	Type	Match with	Format
5112518	100 µL	MAB HRP conjugate	5312506, 5312508	Liquid, pure conjugate
4112503	6 mL	MAB HRP conjugate	5312506, 5312508	Liquid, ready to use

## ▷ LEPTIN

Leptin, the product of the ob gene, is a hormone secreted by adipocytes. Animals with mutations in the ob gene are obese, diabetic and have reduced activity. Administration of recombinant leptin to these animals decreases food intake and causes weight loss. In humans, this type of mutation has not been found. Human leptin cDNA encodes a 167 amino acid non-glycosylated protein including a 21 AA signal peptide, which is cleaved to give mature human leptin. The human receptor for leptin (OB-R) has been identified as a 1144 amino acid transmembrane glycoprotein. It is expressed in the choroid plexus and in the hypothalamus. Leptin is implicated in an increasing number of endocrine regulations including adiposity, satiety, energy homeostasis, puberty and fertility).

### Antibodies:

Cat#	Size	Type	Clone/Host	Isotype	Format
5122816	1 mg	Mab	A130D 1E9 1H6*	IgG1, Kappa	Purified Unconjugated
5122817					Purified F(ab)'2 Unconjugated
5322826			A130D 1H6 2B9 BE8*	IgG2a, Kappa	Purified Unconjugated

\* Matched pair

### Antigens & Conjugates:

Cat#	Size	Type	Match with	Format
5122818	50 µL	MAB HRP conjugate	5322826	Liquid, pure conjugate
4122823	11 mL	MAB HRP conjugate	5322826	Liquid, ready to use

# FERTILITY

In women, different hormones can be measured in order to identify the causes of infertility, and/or to monitor pregnancy or IVF. This is the case of hCG, LH, FSH, Progesterone, estrogens, such as Estradiol and Estriol, Testosterone, and Prolactin. The latter two are also used to diagnose fertility problems in men.

## CHORIONIC GONADOTROPIN (HCG)

hCG is a glycoprotein synthesised by the syncytiotrophoblast of the placenta throughout pregnancy. hCG-molecular weight 37.9 kDa - comprises two subunits. The hCG  $\alpha$  subunit -molecular weight 14.9 kDa - is chemically similar to the  $\alpha$  subunits of FSH, LH and TSH hormones. The hCG  $\beta$  subunit molecular weight 23.0 kDa - has a structure similar to that of the LH  $\beta$  subunit, differing by only a few epitopes. hCG has biological characteristics similar to LH.

During pregnancy, hCG stimulates the remaining corpus luteum and the placental tissue to secrete the various steroid hormones.

In addition to its stimulating action on the luteal and placental tissue, hCG, by crossing the placenta, is essential to differentiate the genital tract of the fetus, which occurs around the 7th week of pregnancy.

### Clinical applications:

- Diagnostic and monitoring test in pregnancy hCG and its free subunits  $\alpha$  and  $\beta$  appear in the serum and urine of pregnant women about 9 days following ovulation. The hCG level then increases rapidly to reach a peak between the 8th and the 12th week.
- Tumour marker test in trophoblastic tumours
- Hydatiform moles and choriocarcinomas may secrete large amounts of native hCG and its two free subunits  $\alpha$  and  $\beta$  into the peripheral blood circulation
- Tumour marker test in non-trophoblastic cancers: 10 to 15 % of the breast, lung, and digestive tract cancers release hCG and/or either of its two constitutive subunits  $\alpha$  and  $\beta$

### Antibodies:

Cat#	Size	Type	Clone/Host	Isotype	Format
5309806	1 mg	Mab	100H 8/2F1 3C6	IgG1 lambda	Purified Unconjugated
5309808					Purified Biotin Conjugate

## ESTRADIOL (E2)

17-beta-estradiol (E2) is a C-18 steroid hormone (molecular weight 272.4 Da) produced mainly by the ovary and placenta, and in small amounts by adrenals and testes. Estradiol is in equilibrium with estrone, which can be converted to estriol by the liver and placenta.

### Antibodies:

Cat#	Size	Type	Clone/Host	Isotype	Format
5306235	100 $\mu$ L	PoAb	Rabbit	NA	Crude
5306255					
5306275					
5306286	1 mg	Mab	294/4 BC7	IgG1, kappa	Purified Unconjugated

### Antigens & Conjugates:

Cat#	Size	Type	Match with	Format
5006200	1 mg	Antigen - COOH	5306235, 5306255, 5306286, 5306296, 5306265	Solid
5106218	100 $\mu$ L	Steroid HRP conjugate		Liquid, pure conjugate
4106203	500 $\mu$ L			Liquid, concentrate
4106205	6 mL	Dilution buffer for 4106203	NA	Liquid, ready to use

## ESTRIOL (E3)

Estriol (also oestriol or E3) is one of the three main estrogens produced by the human body. Estriol is only produced in significant amounts during pregnancy as it is made by the placenta from 16-hydroxydehydroepiandrosterone sulfate (16-OH DHEAS), an androgen steroid made in the fetal liver and adrenal glands.

The human placenta produces pregnenolone and progesterone from circulating cholesterol. Pregnenolone is converted in the fetal adrenal gland into dehydroepiandrosterone (DHEA), a C19 steroid, then subsequently sulfonated to dehydroepiandrosterone sulfate (DHEAS). DHEAS is converted to 16-OH DHEAS in the fetal liver. The placenta converts 16-OH DHEAS to estriol, and is the predominant site of estriol synthesis.

### Antibodies:

Cat#	Size	Type	Clone/Host	Isotype	Format
5306406	1 mg	Mab	59D 10/13D11	IgG1	Purified Unconjugated

### Antigens & Conjugates:

Cat#	Size	Type	Match with	Format
1302614-V	2 mg	Antigen - COOH	5306406	Solid



## ⊙ FOLLICLE STIMULATING HORMONE (FSH)

The measurement of LH and FSH concentrations in serum is essential for investigating fertility and especially disorders of the hypothalamic/pituitary/gonadal axis. Both LH and FSH are secreted by the basophil cells of the anterior pituitary as a result of gonadotropin releasing hormone (GnRH) secretion from hypothalamic cells.

In adults, LH and FSH hormones control gonadal functions; mainly gametogenesis and steroid secretion. Circulating levels of FSH are controlled by a negative feedback effect on the hypothalamus by steroidal hormones and gonadal peptides.

### Antibodies:

Cat#	Size	Type	Clone/Host	Isotype	Format
5108406	1 mg	Mab	1D8 4E9 1C10*	IgG1	Purified Unconjugated
5108417					Purified F(ab)'2 Unconjugated
5308426			96B 4/5H10 2C5 AF7*		Purified Unconjugated

\* Matched pair

## ⊙ LUTEINIZING HORMONE (LH)

Both LH and FSH are secreted by the basophil cells of the anterior pituitary as a result of gonadotropin releasing hormone (GnRH) secretion from hypothalamic cells. In adults, LH and FSH hormones control gonadal functions; mainly gametogenesis and steroid secretion.

### Clinical applications:

The measurement of LH and FSH concentrations in serum is essential for investigating fertility and especially disorders of the hypothalamic/pituitary/gonadal axis.

Cat#	Size	Type	Clone/Host	Isotype	Format
5113146	1 mg	Mab	1/9G7 CA10*	IgG1	Purified Unconjugated
5113147					Purified F(ab)'2 Unconjugated
5313146			90C 1/4A11 2D7 AE6*	IgG1, Kappa	Purified Unconjugated
5113106			90C I2D7 1D9	TBD	
5313106			90D I122E2 2H4		

\* Matched pair

## ⊙ PLACENTAL LACTOGEN (HPL)

Human Placental Lactogen Protein (hPL) is a dimer of two polypeptide chains of equivalent weight (19,000) with lactogenic, luteotropic and growth activities. hPL, which is produced by trophoblastic cells of the normal placenta or by trophoblastic tumor tissue, has an amino acid composition quite similar to that of hGH, and to a lesser extent to that of prolactin. hPL becomes detectable in serum from about 6th week of pregnancy; later on hPL levels in serum increase progressively throughout pregnancy to reach a plateau of 2-10 µg/ml by the 34th week reflecting directly the growth of the placental tissue. Because of its short plasma half-life (± 20 minutes), hPL becomes undetectable in the serum 4 hours after delivery.

### Antibodies:

Cat#	Size	Type	Clone/Host	Isotype	Format
5311406	1 mg	Mab	105F 6/4C8#	IgG1	Purified Unconjugated
5311408			105F 6/4C8 + 105F 6/6A3		Purified Biotin Conjugated
5311426			105F 6/6A3#		Purified Unconjugated

# Can be used alone or as a 50/50 mixture

## ⊙ PROGESTERONE

Progesterone is an endogenous steroid and progestogen sex hormone involved in the menstrual cycle, pregnancy, and embryogenesis of humans and other species. Progesterone has a variety of important functions in the body. It is also a crucial metabolic intermediate in the production of other endogenous steroids, including the sex hormones and the corticosteroids, and plays an important role in brain function as a neurosteroid.

### Antibodies:

Cat#	Size	Type	Clone	Isotype	Format
5314506	1 mg	Mab	OBP 4	IgG1, kappa	Purified Unconjugated

### Antigens & Conjugates:

Cat#	Size	Type	Match with	Format
1302627-V	2 mg	Antigen - COOH	5314506	Solid

## ➤ PROLACTIN (PRL)

Prolactin (PRL) is a polypeptide hormone (molecular weight 20,000 Da) secreted by the pituitary gland, which plays a key role in the development of the mammary gland, the production and secretion of milk and the control of male and female gonadal functions. Prolactin secretion is under hypothalamic control exerted directly by dopamine, several prolactin releasing factors (PRF) and perhaps VIP (vasoactive intestinal polypeptide) or a closely related peptide.

TRH also acts directly at the pituitary level to stimulate prolactin release but its physiological role in the control of prolactin secretion has not been established yet. Several neuroendocrine factors, involving serotonergic or noradrenergic pathways are also involved in the control of prolactin secretion.

The plasma concentration of prolactin increases in various physiological situations such as stress, pregnancy and lactation. Physiological levels fluctuate according to a nycthemeral rhythm, a significant rise being observed at night. Drugs with anti-dopamine activity (psychotropic agents) and ovulatory suppressants, increase prolactin secretion.

### Clinical applications:

**Prolactinoma:** circulating prolactin levels are elevated in patients with a prolactin secreting pituitary adenoma. Amenorrhea and impotence are characteristic clinical symptoms in such cases

**Other pituitary diseases:** increased prolactin levels are also observed in 5% to 20% of patients with acromegaly and when pituitary control by the hypothalamus is suppressed (pituitary stalk section). Decreased PRL levels may be observed in cases of complete destruction of the pituitary as in Sheehan's syndrome.

**Galactorrhea and amenorrhea:** the measurement of the prolactin levels in serum is a useful test in the differential diagnosis of galactorrhea and amenorrhea.

### Antibodies:

Cat#	Size	Type	Clone/Host	Isotype	Format
5114426	1 mg	Mab	1/3G6 1G10 2C10 BA5*	IgG1	Purified Unconjugated
5314426			1/5C4 2D5 BB10*	IgG2a , Kappa	

\* Matched pair

### Antigens & Conjugates:

Cat#	Size	Type	/	Match with	Format
1302106-V	100 ug	Native antigen		pair 514426/5314426	Liquid in PBS buffer

## ➤ TESTOSTERONE

Testosterone is the major androgenic hormone. It is responsible for the development of the male external genitalia and secondary sexual characteristics. In females, its main role is as an estrogen precursor. In both genders, it also exerts anabolic effects and influences behavior. Measurement of total testosterone is often sufficient for diagnosis, particularly if it is combined with measurements of LH and follicle-stimulating hormone (FSH). However, these tests may be insufficient for diagnosis of mild abnormalities of testosterone homeostasis, particularly if abnormalities in SHBG function or levels are present. Additional measurements of free testosterone or bioavailable testosterone are recommended in this situation. This antibody can be used in both total and free Testosterone assays.

### Antibodies:

Cat#	Size	Type	Clone	Isotype	Format
5317016	1 mg	Mab	OBP 3	IgG1	Purified Unconjugated
1302535-V	100 µL	PoAb	Rabbit	NA	Crude

### Antigens & Conjugates:

Cat#	Size	Type	Match with	Format
1302626-V	2 mg	Antigen - COOH	5317016, 1302535-V	Solid

## ➤ FREE TESTOSTERONE

Testosterone is a hydrophobic molecule, and circulates on the binding proteins SHBG, Albumin and CBG. About 2-3% circulates in the free, unbound, form. As Free Testosterone diffuses through cell membranes, to act on its specific receptors, measuring this fraction is sometimes superior to the assessment of Total Testosterone.

The measurement of Free Testosterone is recommended in men whose Total Testosterone concentrations are in the lower end of the normal range and in men with conditions that make Total Testosterone measurements less reliable. E.g., accurate determination of Free Testosterone values is central to an accurate diagnosis of hypogonadism.

### Antibodies:

Cat#	Size	Type	Clone	Isotype	Format
5317016	1 mg	Mab	OBP 3	IgG1	Purified Unconjugated
1302535-V	100 µL	PoAb	Rabbit	NA	Crude

### Antigens & Conjugates:

Cat#	Size	Type	Match with	Format
1302626-V	2 mg	Antigen - COOH	5317016, 1302535-V	Solid

# GROWTH FACTORS

The hGH, IGF-1 and IGFBP-3 tests are used to investigate different growth disorders, such as acromegaly, gigantism, and precocious or delayed puberty. They can also be useful in the monitoring of treatment with recombinant hGH.

## ➤ GROWTH HORMONE (HGH)

hGH is a polypeptide hormone (molecular weight 21,500 Da) produced by the acidophil cells of the anterior pituitary under the control of two main substances from the median eminence: Growth-hormone Releasing Factor (GRF) and an inhibitory agent, somatostatin. Dopaminergic, adrenergic and serotonergic neuroendocrine pathways also play an important role in the control of hGH secretion.

hGH hyposecretion is one of the various causes of small stature in children. Serum hGH measurement with a highly sensitive assay, especially following a provocative stimulus (absence of response), is an important way to establish this diagnosis because this group of patients can be treated by administration of hGH.

Serum hGH measurement is also an index of pituitary function when hypopituitarism (either idiopathic or due to tumour and surgery) is suspected. Serum hGH measurement, especially following a provocative inhibitory test (absence of response), is an important way to establish the diagnosis of hGH hypersecretion due to acidophilic pituitary tumour. This results in gigantism in children and acromegaly in adults. Both of these disorders may be treated by surgery or radiation.

### Antibodies:

Cat#	Size	Type	Clone/Host	Isotype	Format
5110806	1 mg	Mab	107D 4/2G7 1C3*	IgG1	Purified Unconjugated
5110817				IgG2a, Kappa	Purified F(ab)'2 Unconjugated
5310806			107D 4/6H8 1E7*	IgG1	Purified Unconjugated
5310808					Purified Biotin Conjugated

\* Matched pair

### Antigens & Conjugates:

Cat#	Size	Type	Match with	Format
5110818	50 µL	MAB HRP conjugate	5310806, 5310818	Liquid, pure conjugate
4110802	200 µL	MAB HRP conjugate	5310806, 5310818	Liquid, concentrate
4110805	6 mL	Dilution buffer for 4110802	NA	Liquid, ready to use



## ➤ INSULIN-LIKE GROWTH FACTOR (IGF-1)

IGF-1 is a 70-amino acid polypeptide. IGF1 is a member of a family of closely related growth factors with high homology to insulin that signal through a corresponding group of highly homologous tyrosine kinase receptors. IGF1 is produced by many tissues, but the liver is the main source of circulating IGF1. IGF1 is the major mediator of the anabolic and growth-promoting effects of growth hormone (GH). IGF1 is transported by IGF-binding proteins, in particular insulin-like growth factor-binding protein 3 (IGFBP3), which also controls its bioavailability and half-life.

Low IGF1 and IGFBP3 levels are observed in GH deficiency or GH resistance. If acquired in childhood, these conditions result in short stature.

Elevated serum IGF1 and IGFBP3 levels often indicate a sustained overproduction of GH, or excessive rhGH therapy. Malnutrition results in low serum IGF1 concentrations, which recover with restoration of adequate nutrition.

### Antibodies:

Cat#	Size	Type	Clone	Isotype	Format
5115806	1 mg	Mab	OBP 7*	IgG1, Kappa	Purified Unconjugated
5315836			OBP 6*		
5315816			OBP 5	IgG1	

\* Matched pair

## ➤ INSULIN-LIKE GROWTH FACTOR BINDING PROTEIN-3 (IGFBP-3)

IGFBP-3 is the most abundant IGF-binding protein, accounting for as much as 75% or more of the circulating IGF-binding capacity in healthy subjects. IGFBP-3 shares functional properties with IGFBP-5 in that both peptides are able to form high molecular weight ternary complexes of ~150 kilo Dalton with ALS and either IGF-I or -II.

However, IGFBP-5 circulates in much lower concentrations than IGFBP-3, and in healthy subjects the ternary complexes carry as much as 90% of IGFBP-3 but only about 50% of IGFBP-5. Originally, the IGFBPs were thought to serve as IGF-carrier proteins, stabilizing plasma IGF levels and controlling the egress of IGF from the circulation to the extra-vascular compartment.

Furthermore, it was assumed that IGFBP-complexed IGF was biologically more or less inactive, being deprived its ability to interact with the IGF-I receptor.

However, it soon became apparent that in some experimental settings the IGFBPs stimulated rather than inhibited IGF-I mediated actions, and accordingly, the IGFBPs are now often referred to as modulators of IGF-I bioactivity. In addition, the majority of the IGFBPs, and in particular IGFBP-3, exerts IGF-I and IGF-I receptor independent effects, possible involving interactions with specific receptors located at the cell surface and intracellular.

For example, IGFBP-3 is nowadays considered to serve as an anti-cancer molecule, apparently protecting against several common cancers, and effects of IGFBP-3 on insulin signaling in cultured adipocytes have also been suggested. The turnover of the ternary complexes is very slow, and the plasma concentration of IGFBP-3 remains stable throughout the day, being unaffected by short-term nutritional changes.

Thus, the level of IGFBP-3 may be determined by one single measurement. GH is the primary regulator of IGFBP-3 as well as of IGF-I and ALS and therefore, all three peptides increase during the pubertal growth spurt, where after levels gradually decline with increasing age. In children, IGFBP-3 has been shown to correlate with the 24-h integrated GH secretion and in particular in children IGFBP-3 may be helpful in the diagnosis of GH deficiency.

## Antibodies:

Cat#	Size	Type	Clone/Host	Isotype	Format
5111736	1 mg	Mab	175/B4 KA7 BF3 BC9 BA11*	IgG1, Kappa	Purified Unconjugated
5311726			175/B4 EF2 BE10*		

\* Matched pair

## Antigens & Conjugates:

Cat#	Size	Type	Match with	Format
5111718	100 µL	MAB HRP conjugate	5311726	Liquid, pure conjugate
4111703	500 µL	MAB HRP conjugate	5311726	Liquid, concentrate
4111705	11 mL	Dilution buffer for 4111703	NA	Liquid, ready to use

# INFLAMMATION

Procalcitonin is one of the major markers of inflammation. It is e.g. used in the diagnosis of bacteremia, septicaemia, and systemic infection. It is also useful in monitoring antibacterial therapy.

## PROCALCITONIN (PCT)

Procalcitonin (PCT) test is used in the diagnosis of bacteremia and septicaemia, in the diagnosis of renal involvement in urinary tract infection, in the diagnosis of bacterial infection in neutropenic patients, in the diagnosis, risk stratification, and monitoring of septic shock, in the diagnosis of systemic secondary infection post-surgery, and in severe trauma, burns, and multiorgan failure, in the differential diagnosis of bacterial versus viral meningitis, in the differential diagnosis of community-acquired bacterial versus viral pneumonia, and in the monitoring of therapeutic response to antibacterial therapy.

## Antibodies:

Cat#	Size	Type	Clone/Host	Isotype	Format
5362906*	100 µg	PoAb	Rabbit	NA	Purified Unconjugated

\* A Sandwich assay can be built with this antibody as capture and detection at the same time



# KIDNEY FUNCTION

The kidney function is typically evaluated using creatinine-based equations to calculate GFR. To the contrary of Creatinin, Cystatin C has the advantage of not being influenced by age, gender, and other external factors. Urinary Uromodulin levels is a marker of early renal disfunction.

## ⌕ CYSTATIN C

Serum Cystatin C has shown promise as a replacement for serum creatinine in estimation of glomerular filtration rate (GFR). Concentration of serum cystatin C is not affected by gender, age, race, protein intake, and muscle mass, unlike serum creatinine. When GFR decreases, cystatin C level begins to rise proportionately.

Cystatin C can be used as an alternative to blood creatinine or creatinine clearance to screen for, diagnose or monitor kidney failure in known, suspected kidney disease patients.

It can be required if there is a strong suspicion of a decrease in GFR in a patient whose creatinine is, however, normal.

### Antibodies:

Cat#	Size	Type	Clone/Host	Isotype	Format
5362206	100 µg	PoAb	Sheep*	NA	Purified Unconjugated
5362216			Rabbit*		

\* Matched pair

## ⌕ UROMODULIN

Uromodulin, also known as Tamm–Horsfall protein, is one of the glycoproteins that affect the formation of calcium-containing kidney stones or calculus. Decreased levels of Uromodulin in urine have been found to be a good indicator of kidney stones.

Lowered Uromodulin values are also a sensitive marker of loss in renal function, particularly in the initial stage, when conventional markers are not really significant.

### Antibodies:

Cat#	Size	Type	Clone/Host	Isotype	Format
5362506*	100 µg	PoAb	Sheep	NA	Purified Unconjugated

\* A Sandwich assay can be built with this antibody as capture and detection at the same time



# PRENATAL SCREENING

Prenatal screening covers a variety of testing performed during pregnancy. PP-13 has attracted attention as an early predictive marker of preeclampsia.

## ⌕ PLACENTAL PROTEIN 13 (PP-13)

Placenta protein 13 (PP-13) is a dimer protein which is produced by placenta and has role in implementation. This protein has been attracted as a probable marker for early diagnosis of preeclampsia. During normal pregnancy, the PP-13 serum levels increase while the declined levels have been found in patients who developed preeclampsia. Studies have shown that measuring PP-13 levels in the first trimester has predictive value.

### Antibodies:

Cat#	Size	Type	Clone/Host	Isotype	Format
5362706*	100 µg	PoAb	Rabbit	NA	Purified Unconjugated

\* A Sandwich assay can be built with this antibody as capture and detection at the same time



# THYROID FUNCTION

Thyroid tests are performed in order to evaluate the function of the thyroid glands and to help diagnose thyroid disorders such as hyper- and hypothyroidism, goiter, thyroiditis, as well as thyroid cancers. TSH, Free T3 and T4, as well as Total T3 and T4 are part of the test panel.

The TgAb test is used primarily to help diagnose autoimmune conditions involving the thyroid gland.

## ⊙ THYROID STIMULATING HORMONE (TSH)

### 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/FT4 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.

### Antibodies:

Cat#	Size	Type	Clone/Host	Isotype	Format
5118806	1 mg	Mab	103B 2/7A3 1B7*	IgG1, Kappa	Purified Unconjugated
5118817					Purified F(ab)'2 Unconjugated
5318806			103B 2/2B4 1A8*.#		Purified Unconjugated
5318817					Purified F(ab)'2 Unconjugated
5318826			103B 2/3E1 2F12*.#		Purified Unconjugated
5318837					Purified F(ab)'2 Unconjugated

\* Matched pairs # Can be used alone or as a 50/50 mixture

## ⊙ THYROGLOBULIN AUTOANTIBODIES (TgAb)

Thyroglobulin Autoantibodies bind thyroglobulin (Tg), a major thyroid-specific protein. Tg plays a crucial role in thyroid hormone synthesis, storage, and release. Tg is not secreted into the systemic circulation under normal circumstances. However, follicular destruction through inflammation, haemorrhage, or rapid disordered growth of thyroid tissue, can result in leakage of Tg into the blood stream and in the formation of autoantibodies to Tg (TgAb) in some individuals.

A TgAb test is therefore useful in the diagnosis of autoimmune thyroid diseases, such as Hashimoto disease, postpartum thyroiditis, neonatal hypothyroidism, and Graves' disease. It can also be used to identify potentially unreliable serum Tg measurements in the follow-up of patients with thyroid cancers. The test is often ordered together with other biomarkers, such as Tg, TPOAb, T3, T4, TSH, CEA or CT.

### Antibodies:

Cat#	Size	Type	Clone/Host	Isotype	Format	Application
5333516	1 mg	Mab	Tg8-B1	IgG1, Kappa	Purified Unconjugated	ELISA/RIA/CLIA
5333536			Tg10-1B11			

## ⊙ L-THYROXINE (T4)

Levothyroxine (INN, USAN) or L-thyroxine is a synthetic thyroid hormone that is chemically identical to thyroxine (T4), which is naturally secreted by the follicular cells of the thyroid gland. It is used to treat thyroid hormone deficiency, and occasionally to prevent the recurrence of thyroid cancer. Like its naturally secreted counterpart, levothyroxine is a chiral compound in the L-form.

The related drug dextrothyroxine (D-thyroxine) was used in the past as a treatment for hypercholesterolemia (elevated cholesterol levels) but was withdrawn due to cardiac side effects.

It is on the World Health Organization's List of Essential Medicines, a list of the most important medication needed in a basic health system.

### Antibodies:

Cat#	Size	Type	Clone/Host	Isotype	Format
5316406	1 mg	Mab	T41	IgG1	Purified Unconjugated

### Antigens & Conjugates:

Cat#	Size	Type	Match with	Format
1302193-V	2 mg	Antigen - COOH	5316406	Solid



## ⊙ FREE T4 (FT4)

Approximately 70% of circulating T4 is bound to TBG, while about 10% and 20% is bound to transthyretin (TTR) and Albumin, respectively. Less than 0.1% circulates as free T4 (FT4). FT4 enters and leaves cells freely by diffusion, and is therefore the only form that is biologically active.

The measurement of FT4 is used in the determining of thyroid status of sick, hospitalized patients, in the determination of the thyroid status of patients in whom abnormal binding proteins have been identified, and possibly is also useful in pediatric patients.

### Antibodies:

Cat#	Size	Type	Clone/Host	Isotype	Format
5316406	1 mg	Mab	T41	IgG1	Purified Unconjugated

### Antigens & Conjugates:

Cat#	Size	Type	Match with	Format
1302193	2 mg	Antigen - COOH	5316406	Solid

## ⊙ TRIIODOTHYRONINE (T3)

Triiodothyronine, also known as T3, is a thyroid hormone. It affects almost every physiological process in the body, including growth and development, metabolism, body temperature, and heart rate.

Production of T3 and its prohormone thyroxine (T4) is activated by thyroid-stimulating hormone (TSH), which is released from the pituitary gland. This pathway is part of a closed-loop feedback process: Elevated concentrations of T3, and T4 in the blood plasma inhibit the production of TSH in the pituitary gland. As concentrations of these hormones decrease, the pituitary gland increases production of TSH, and by these processes, a feedback control system stabilizes the amount of thyroid hormones that are in the bloodstream.

T3 is the true hormone. Its effects on target tissues are roughly four times more potent than those of T4. Of the thyroid hormone that is produced, just about 20% is T3, whereas 80% is produced as T4. Roughly 85% of the circulating T3 is later formed in the liver and pituitary by removal of the iodine atom from the carbon atom number five of the outer ring of T4. In any case, the concentration of T3 in the human blood plasma is about one-fortieth that of T4. This is observed in fact because of the short half-life of T3, which is only 2.5 days. This compares with the half-life of T4, which is about 6.5 days.

### Antibodies:

Cat#	Size	Type	Clone/Host	Isotype	Format
5316306	1 mg	Mab	MO11	IgG1	Purified Unconjugated

### Antigens & Conjugates:

Cat#	Size	Type	Match with	Format
1302172-V	2 mg	Antigen - COOH	5316306	Solid

## ⊙ FREE T3 (FT3)

Normally, Triiodothyronine (T3) circulates tightly bound to TBG and Albumin. Only 0.3% of the Total T3 is unbound (free). The free fraction is the active form.

FT3 is a second- or third-level test of thyroid function. It provides further confirmation of hyperthyroidism, supplementing the T4, TSH and T3 assays. It is essentially used in the evaluation of clinically euthyroid patients who have an altered distribution of binding proteins, and for the monitoring of thyroid hormone replacement therapy.

### Antibodies:

Cat#	Size	Type	Clone/Host	Isotype	Format
5316306	1 mg	Mab	MO11	IgG1	Purified Unconjugated

### Antigens & Conjugates:

Cat#	Size	Type	Match with	Format
1302172-V	2 mg	Antigen - COOH	5316306	Solid

# CUSTOM DIAGNOSTIC LABORATORY SERVICES & SALES CONDITIONS

## ISO 9001 AND ISO 13485 APPROVED

The scientists at DIAsource mmunoAssays S.A 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 <sup>125</sup>I 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')<sub>2</sub> fragments on a large scale.

### Labeling Services

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

### Antibody Purification

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

## GENERAL CONDITIONS OF SALES

### Article 1 – Application

Unless there is an explicit deviation agreed upon in writing, the present general terms and conditions apply to every DIAsource offer as well as every contract that is formed on the basis of such an offer or an order confirmed by DIAsource. The client waives explicitly and fully the application of its own general terms and conditions by virtue of its relationship with DIAsource. Contracts that have been concluded through the staff or representatives of DIAsource and that do not observe these general terms and conditions do not bind DIAsource.

### Article 2 – Conclusion of the contract

An offer from DIAsource is only binding if it is accompanied by a period of acceptance and only if this period has not yet expired. A client's order can only be considered accepted by DIAsource after DIAsource's express written confirmation of that acceptance. As any order has its own specific characteristics and, therefore, the products ordered by one client cannot be redirected to another client, the client cannot cancel an accepted order whether in full or in part. If the client would cancel an accepted order, it will still have to pay the full price of the relevant order. DIAsource reserves the right to (i) refuse requests for customized orders, or requests for modifications of accepted orders; and/or to (ii) charge such modifications or customizations to the client at the then-prevailing actual cost, with a minimum of 25 EUR (excl. VAT). Without prejudice to the third paragraph of this article 2, an administrative fee of 25 EUR (excl. VAT) will be charged by DIAsource for any order with a value of less than 500 EUR (excl. VAT).

### Article 3 – Price and related costs

Unless agreed otherwise in writing, all of DIAsource's set prices apply to packaged products that are delivered Ex Works (in the sense of Incoterms 2010) to the registered seat of DIAsource. The following, on top of the stipulated price, are to be paid by the client, unless there is any explicit written deviation from this rule:

- (i) All costs of insurance, security, loading, transport, and unpacking of the products.
- (ii) All taxes and levies (including VAT and customs duties) related to the delivered products or the items mentioned under (i), including the taxes and levies that are applied or adapted only after the conclusion of the contract.
- (iii) All additional costs for DIAsource that have been incurred as a result of differences in the currency exchange rates that are detrimental to DIAsource. Every cost that is charged for execution of payments must always be borne by the client ultimately.

### Article 4 – Payment

Unless agreed otherwise, (i) if DIAsource sends a pro forma invoice to the client, such pro forma invoice must be paid before the confirmed shipment date and (ii) if DIAsource does not send a pro forma invoice to the client, all invoices should be paid upon receipt. The payment of a (pro forma) invoice may not be refused or postponed for any reason whatsoever. Any late payment will make all debts of the client to DIAsource immediately due upon notification to that effect by DIAsource. An interest on late payment will be charged—ex officio and without notice—on the unpaid balance of all debts of the client to DIAsource which are due and payable, and the rate of it will be equal to the interest rate calculated according to Article 5, paragraph 2 of the Act of 2 August 2002 on combating late payments in commercial transactions, increased by 3.5% per year. On top of this, a compensation of 15% of the unpaid balance will be charged to cover the administrative costs associated with late payments, and this at a minimum of EUR 100 per invoice that is paid late. All of this is without prejudice to (i) the possibility for DIAsource to prove the actual damage it suffered and to demand compensation for it, or (ii) the possibility for DIAsource to suspend the further performance of its obligations under this or any other contract with the client, or apply any other common law sanction.

### Article 5 – Reservation of ownership – transfer of risk

The ownership of every sold product only passes to the client after the client has fully paid the price and related costs for this product, as well as the late interest and compensation that would be due by virtue of late payment of this price. Before full payment is made, and unless explicitly agreed otherwise in writing, the client may not alienate the product, encumber it with securities, or transform it or attach it to an immovable property in any way; in that time span, the client will conserve the product safely and have it insured; it will also conserve it in a way it can be identified individually, with a legible and visible mark on it, explicitly confirming that it is property of DIAsource. The risk of loss, destruction, or damage to the product (also if caused by force majeure) will nevertheless pass to the client as soon as the product is delivered to the client.

### Article 6 – Delivery Period

Every agreed upon delivery term is only (and is to be considered) indicative. Not observing this term does not entitle the client to any remedy, unless the parties agree explicitly in writing that the delivery term is binding (in that event, not observing the delivery term can only give way to indemnification for the damage that is actual, proven, and established in such a way that both parties are able to submit observations, or to the termination of the sale, any of which can only be sought at the earliest 1 month from the date of a notice demanding delivery).

### Article 7 – Hardship

If, beyond the will of DIAsource, unforeseen circumstances (e.g., strike, accidents, weather conditions, material defects, etc.) materialize in the procurement, production, distribution or any other necessary type of process that make the delivery or timely delivery or the performance of any other obligation impossible (or strongly impede this), then DIAsource, depending on the nature of the circumstances, has the right to terminate the contract or suspend the performance of its obligations. DIAsource will not incur any liability if this occurs.

### Article 8 – Complaints

Complaints regarding visible defects or non-conformity are only admissible if (i) the product has not been used yet, and (ii) the complaint is in writing and is sent to the commercial services department of DIAsource in Louvain-La-Neuve no later than 3 working days from the date of delivery. After that, the products will irrefutably be considered accepted. Following complaints are also non-receivable: anonymous complaints, claims related to results dating more than a year before the introduction of the same complaint, complaints linked to a "mistake" of the customer ("lex: mishandling, error in following the protocol, etc.), claims related to facts that are not within the competence of DIAsource, claims relating to a failure to provide information by the client, claims related to a subjective nature of the said claim.

### Article 9 – Liability/Security

DIAsource will only be liable for hidden defects if the client notifies DIAsource thereof by registered letter within 7 business days after such hidden defects are discovered by the client. This term is to be considered a term unable to be suspended or reset ("délai de déchéance" / "vervaltermijn"). In that event, the client will not be entitled to claim the dissolution of the sale of the relevant product, and DIAsource will only be liable for (i) the decrease in value of the product, and, to the extent DIAsource can be held liable for it, and (ii) the additional damage suffered by the client, it being understood that the client bears the burden of proof. This indemnity (i & ii) will in any event be limited to the price paid by the client for the relevant product. The client must conform strictly with the directives regarding the good distribution practices (GDP) applicable to medical devices marked 'CE'. The client must use the products in a professional way and in accordance with the instructions of DIAsource. The client must inform DIAsource immediately of any dysfunction or any alteration of the properties and/or performances of the product he has bought from DIAsource. If the products are resold by the client to a third party outside of Belgium, the client must provide all documents and necessary instructions to that third party in the language(s) of the country of destination. DIAsource must only accept returned goods to the extent that they are the subject of a complaint which DIAsource has declared admissible and well-founded.

### Article 10 – Netting in case of insolvency of the client

In case the client is declared bankrupt, or in case any other insolvency or insolvency-like procedure is initiated in respect of the client, any amounts reciprocally due by and between DIAsource and the client shall be netted automatically and by force of law on the date of the opening of the insolvency procedure, regardless of whether such amounts are already due or determined ("vaststaand"/"liquide") on the date of the opening of the insolvency procedure, and even if they are not entirely certain.

### Article 11 – No assignment

The client may not assign its rights and obligations against DIAsource to any third party (through a sale, a capital contribution, a donation or any other transaction, including the sale or contribution of a division ("bedrijfstak"/"branche d'activité") or of a business as a whole ("algemeenheid"/"universalité"), or a merger, spin-off, split-up or other corporate restructuring) without the prior written consent of DIAsource.

### Article 12 – Applicable law and competent court

Belgian law applies to all agreements to which the present general terms and conditions apply, but with the exclusion of the application of Belgian private international law and the Convention on the International Sale of Goods of Vienna dated 11 April 1980 (except for the Convention on the Limitation Period in the International Sale of Goods of 14 June 1974, whose application remains). The courts of Walloon Brabant, Belgium are exclusively competent to hear all disputes arising out of or in connection with contracts concluded by DIAsource (including the pre-contractual disputes) to which the present general terms and conditions apply.

### Article 13 – Discrepancies between language versions

The present general terms and conditions have been drafted in Dutch, English, French and Spanish. In case of discrepancies between the different language versions, the French version will prevail.

### Article 14 – GDPR & Privacy policy

DIAsource is compliant to the General Data Protection Regulation. Our policy for privacy and data protection is available on our website [www.diasource-diagnostics.com](http://www.diasource-diagnostics.com). Any questions can be sent to: [GDPR@diasource.be](mailto:GDPR@diasource.be)



# INDEX BY PRODUCT NAME

Product description	Page
25OH Vitamin D	12
1,25(OH) <sub>2</sub> Vitamin D	11
Adiponectin	21
Adrenocorticotrophic Hormone (ACTH)	18
Aggrecan (PG)	8
Aldosterone	18
Alpha-Fetoprotein (AFP)	14
Angiotensin I	19
Calcitonin (CT)	15
Carcino Embryonic Antigen (CEA)	16
Cartilage Oligomeric Matrix Protein (COMP)	9
Cathepsin K	9
Chorionic Gonadotropin (HCG)	24
Chorionic Gonadotropin Hormone (Free Beta-hcg)	16
Chromogranin A	17
Cystatin C	34
Estradiol (E2)	25
Estriol (E3)	25
Fatty Acid-Binding Protein 4 (FABP4)	22
Follicle Stimulating Hormone (FSH)	26
Free 25OH Vitamin D	13
Free T3 (FT3)	39
Free T4 (FT4)	38
Free Testosterone	29
Growth Hormone (HGH)	30
Insulin	22
Insulin-Like Growth Factor (IGF-1)	31
Insulin-Like Growth Factor Binding Protein-3 (IGFBP-3)	31
L-thyroxine (T4)	37
Leptin	23

Product description	Page
Luteinizing Hormone (LH)	26
N-Terminal Proatrial Natriuretic Peptide (NT-ProANP)	20
Osteocalcin (OST)	9
Parathyroid Hormone (PTH)	10
Placental Lactogen (HPL)	27
Placental Protein 13 (PP-13)	35
Procalcitonin (PCT)	33
Progesterone	27
Prolactin (PRL)	28
Renin	20
Soluble Transferrin Receptor (StFr)	7
Testosterone	29
Thyroglobulin Autoantibodies (TgAb)	37
Thyroid Stimulating Hormone (TSH)	36
Triiodothyronine (T3)	38
Uromodulin	34

For more information, we invite you to visit our dedicated website: [www.diasource-antibodies.com](http://www.diasource-antibodies.com)



# OUR OTHER AVAILABLE PRODUCT CATALOGS



## ➤ IMMUNOASSAYS

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



## ➤ VITAMIN D

- RIA Product:
  - 25OH Vitamin D3
  - 25OH Vitamin D Total
  - 1,25 (OH)2 Vitamin D
- ELISA product:
  - 25OH Vitamin D Total
  - 25OH Vitamin D Total '90'
  - Free 25OH Vitamin D
  - 1,25 (OH)2 Vitamin D



## ➤ MULTI-SPECIES

- Allergy
- Endocrinology & Metabolism
- Infectious Disease

### ⊕ MANUFACTURED BY:

**DIAsource ImmunoAssays® S.A.**

rue du Bosquet 2 - BE 1348 Louvain-la-Neuve - Belgium  
Tel.: +32 (0)10 84 99 11 - Fax: +32 (0)10 84 99 90  
info@diasource.be - customer.service@diasource.be

### ⊕ FOR MORE INFORMATION:

[www.diasource-diagnostics.com](http://www.diasource-diagnostics.com)  
[www.diasource-antibodies.com](http://www.diasource-antibodies.com)

### ⊕ DISTRIBUTED BY:

