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**CHEMILUMINESCENCE  
IMMUNOASSAY**

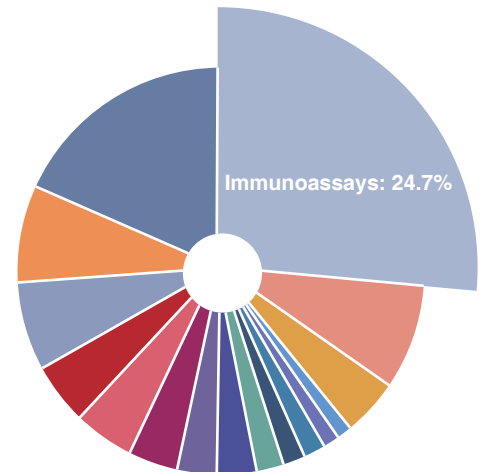
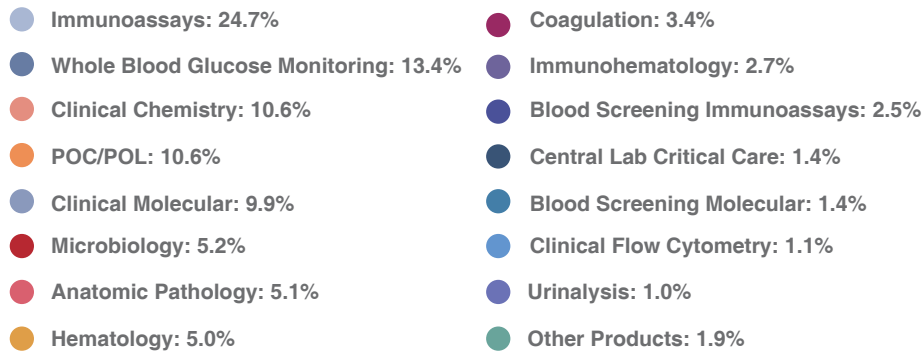
**2020**

# In-Vitro Diagnostics

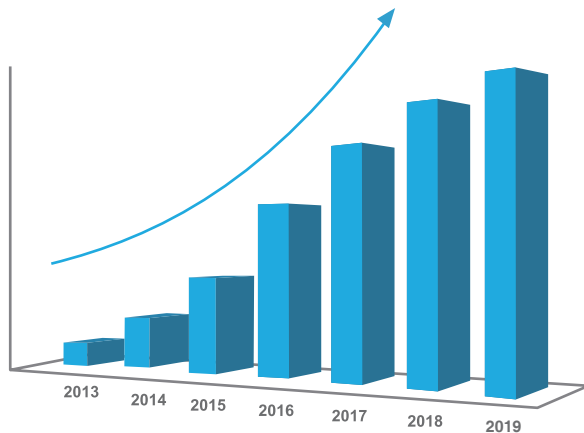
## In-Vitro Diagnostic Market Size

Compound Annual Growth Rate(CAGR) of over 5%

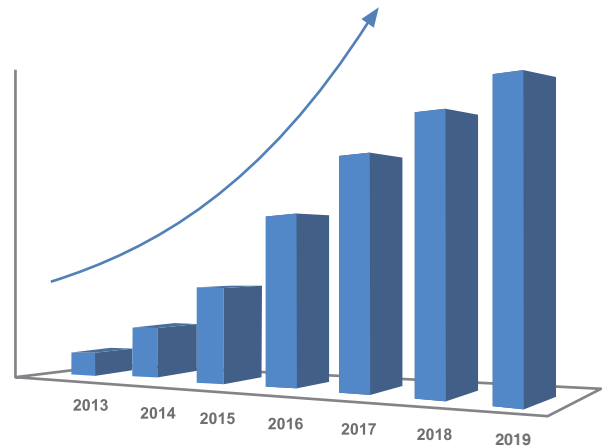
### Rank



Snibe International Business Growth



Annual New Installation Unit



Snibe's core products were put into batch production in 2010 and since then, the company has experienced rapid growth and development.

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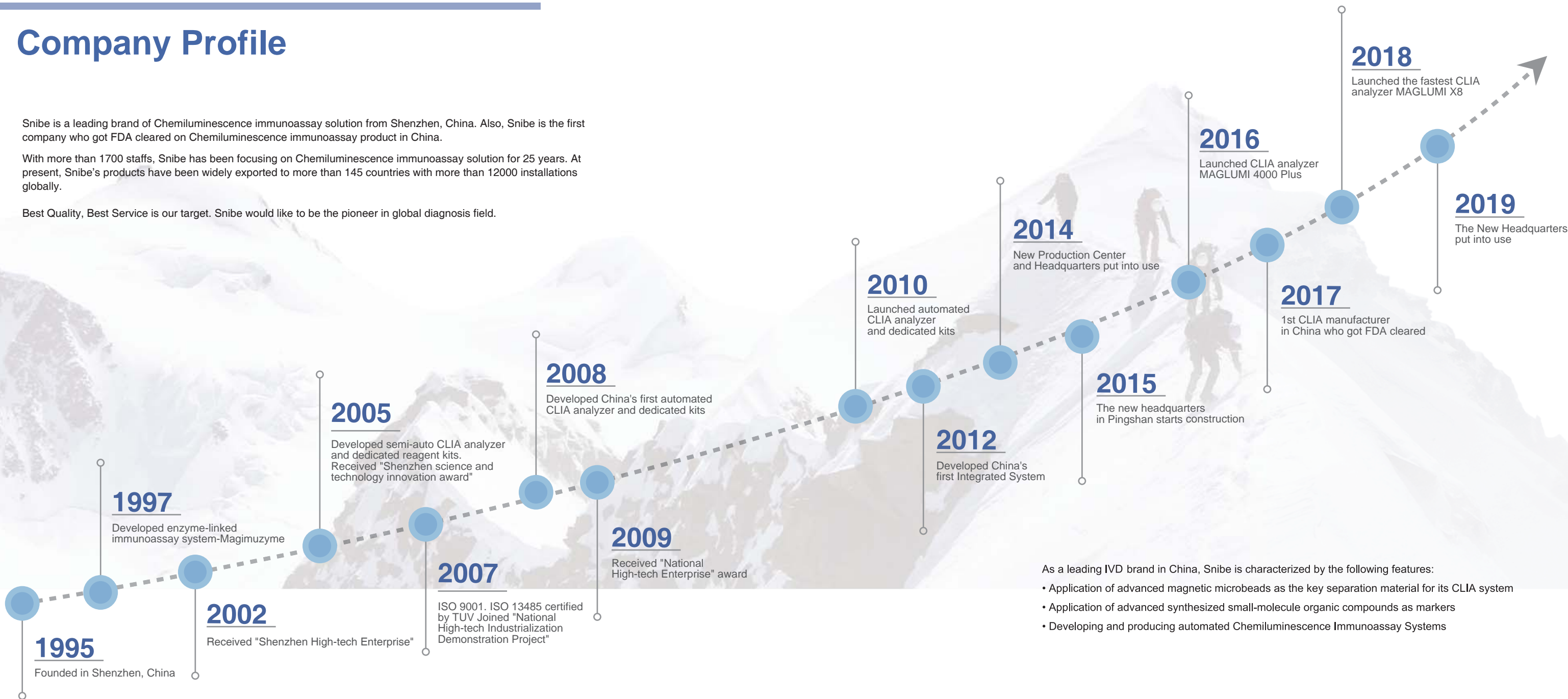


# Company Profile

Snibe is a leading brand of Chemiluminescence immunoassay solution from Shenzhen, China. Also, Snibe is the first company who got FDA cleared on Chemiluminescence immunoassay product in China.

With more than 1700 staffs, Snibe has been focusing on Chemiluminescence immunoassay solution for 25 years. At present, Snibe's products have been widely exported to more than 145 countries with more than 12000 installations globally.

Best Quality, Best Service is our target. Snibe would like to be the pioneer in global diagnosis field.



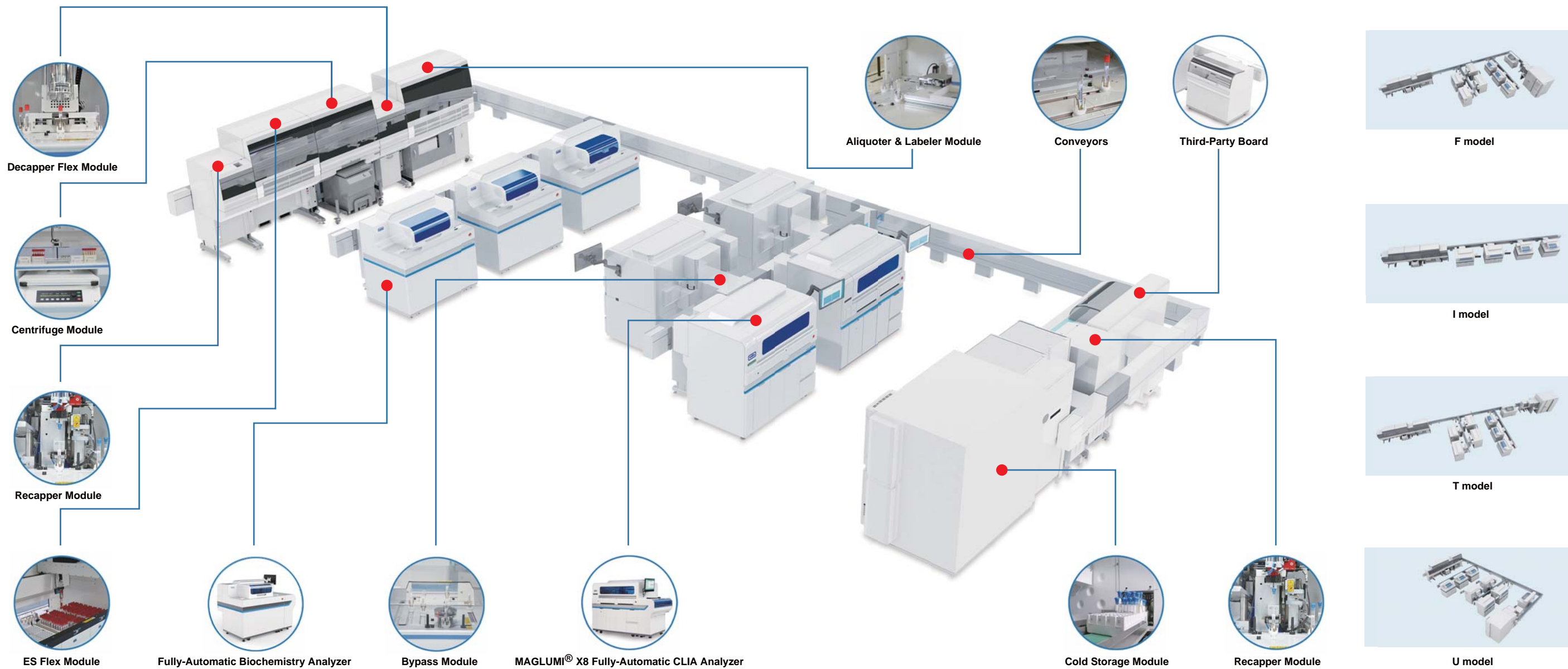
As a leading IVD brand in China, Snibe is characterized by the following features:

- Application of advanced magnetic microbeads as the key separation material for its CLIA system
- Application of advanced synthesized small-molecule organic compounds as markers
- Developing and producing automated Chemiluminescence Immunoassay Systems



# Total Laboratory Automation Solutions

# ATLAS-TCA



# Integrated System

## Biolumi 8000



### Flexible combination of different module



B+S



I+B+S



I+I+B+S



I+B+B+B+E+S

### Specificity

#### ◆ IMMUNOASSAY MODULE (I)

- Magnetic separation, flash CLIA technology
- More than 160 parameters (Tumor marker, Fertility, Hepatic Fibrosis, Inflammation Monitoring, Cardiac Markers, Infectious Disease, Autoimmune etc.)
- **25** reagents on board
- **280** tests/hour
- Clot detection, liquid level detection

#### ◆ BIOCHEMISTRY MODULE (B)

- **1600** tests/hour
- Continuous loading reagent during operation
- Clot detection, liquid level detection
- Wavelength range 340nm - 800nm, detect 16 different wavelengths simultaneously

#### ◆ ELECTROLYTE MODULE(E)

- **1000** tests/hour
- Continuous loading reagent during operation
- Clot detection, liquid level detection

#### ◆ SAMPLE PROCESSING MODULE(S)

- Loading **280** samples at one time
- Recognize the barcode of primary tube
- Continuous loading and unloading samples during operation
- Specific STAT channel

# Immunoassay



## MAGLUMI 600

### SPECIFICATION

- Throughput: Maximum **180** tests/hour
- Sample and reagent continuous loading
- On board capability: up to **16** samples
- Reagent position: **4**
- Random access or batch mode, STAT

### TARGETED END-USER

- Small labs
- Back-up

### TEST VOLUME PER DAY

- 5-10 parameters
- Daily test: 10-35



## MAGLUMI 800

### SPECIFICATION

- Throughput: Maximum **180** tests/hour
- Sample and reagent continuous loading
- On board capability: up to **40** samples
- Reagent position: **9**
- Random access or batch mode, STAT

### TARGETED END-USER

- Small labs
- Mid-size Labs

### TEST VOLUME PER DAY

- 5-10 parameters
- Daily test: 40-80



## MAGLUMI 2000

### SPECIFICATION

- Throughput: Maximum **180** tests/hour
- Sample and reagent continuous loading
- On board capability: up to **144** samples
- Reagent position: **15**
- Random access or batch mode, STAT
- **Inpeco Automation Track Connectable**

### TARGETED END-USER

- Mid or large size labs
- Hospitals

### TEST VOLUME PER DAY

- > 20 parameters
- Daily test: 100-300



**MAGLUMI 2000 Plus**



**MAGLUMI 4000 Plus**



**MAGLUMI X8**

**SPECIFICATION**

- Throughput: Maximum **180** tests/hour
- Sample and reagent continuous loading
- On board capability: up to **144** samples
- Reagent position: **25**
- Random access or batch mode, STAT
- Refrigerated sample and reagent area
- **Inpeco Automation Track Connectable**

**TARGETED END-USER**

- Large labs
- Hospitals
- Chain labs

**TEST VOLUME PER DAY**

- > 20 parameters
- Daily test: 100-300

**SPECIFICATION**

- Throughput: Maximum **280** tests/hour
- Sample and reagent continuous loading
- On board capability: up to **144** samples
- Reagent position: **25**
- Random access or batch mode, STAT
- Refrigerated sample and reagent area
- **Inpeco Automation Track Connectable**

**TARGETED END-USER**

- Large labs
- Hospitals
- Chain labs

**TEST VOLUME PER DAY**

- > 20 parameters
- Daily test: > 300

**SPECIFICATION**

- Throughput: Maximum **600** tests/ hour
- Up to 2400 tests/hour (Four modules combined)
- Sample and reagent continuous loading
- On board capability: up to **300** samples
- Reagent position: **42**
- Random access or batch mode, STAT
- Refrigerated reagent
- **Capable to link Laboratory Automation system (TLA/LAS)**

**TARGETED END-USER**

- Large labs
- Hospitals
- Chain labs

**TEST VOLUME PER DAY**

- > 20 parameters
- Daily test: > 500



# MAGLUMI Test Menu

## Tumor Markers

Ferritin  
 AFP  
 CEA  
 Total PSA  
 f-PSA  
 CA 125  
 CA 15-3  
 CA 19-9  
 HCG/ $\beta$ -HCG  
 Tg (Thyroglobulin)  
 PAP  
 CA 50  
 CYFRA 21-1  
 CA 242  
 CA 72-4  
 NSE  
 S-100  
 SCCA  
 TPA-snibe  
 Pepsinogen I  
 Pepsinogen II  
 Gastrin-17  
 H.pylori IgG  
 H.pylori IgA  
 H.pylori IgM  
 $\beta$ 2-MG  
 Calcitonin  
 Proinsulin  
 ProGRP  
 HE4  
 HER-2  
 \*PIVKA-II

## Cardiac

CK-MB  
 Troponin I  
 Myoglobin  
 hs-cTnl  
 H-FABP  
 NT-proBNP  
 BNP  
 Aldosterone  
 Angiotensin I  
 Angiotensin II  
 Direct Renin  
 D-Dimer  
 Lp-PLA2  
 hs-CRP  
 \*MPO

## TORCH

Toxo IgG  
 Toxo IgM  
 Rubella IgG  
 Rubella IgM  
 CMV IgG  
 CMV IgM  
 HSV-1/2 IgG  
 HSV-1/2 IgM  
 HSV-2 IgG  
 \*HSV-2 IgM  
 \*HSV-1 IgG  
 \*HSV-1 IgM

## Thyroid

<sup>FDA</sup>TSH (3rd Generation)  
<sup>FDA</sup>T4  
<sup>FDA</sup>T3  
<sup>FDA</sup>FT4  
<sup>FDA</sup>FT3  
 Tg (Thyroglobulin)  
 TGA (Anti-Tg)  
 Anti-TPO  
 TRAb  
 TMA  
 Rev T3  
 \*T-Uptake

## Drug Monitoring

Digoxin  
 CSA (Cyclosporine A)  
 FK 506 (Tacrolimus)

## Prenatal Screening

AFP (Prenatal Screening)  
 Free  $\beta$ -HCG  
 PAPP-A  
 HCG/ $\beta$ -HCG  
 free Estriol

## Infectious Disease

HBsAg  
 Anti-HBs  
 HBeAg  
 Anti-HBe  
 Anti-HBc  
 Anti-HCV  
 Syphilis  
 Anti-HAV  
 HAV IgM  
 HIV Ab/Ag Combi  
 Chagas  
 HTLV I+II  
 H.pylori IgG  
 H.pylori IgA  
 H.pylori IgM  
 \*Anti-HBc IgM

## Anemia

Vitamin B12  
 Ferritin  
 Folate (FA)  
 \*RBC Folate

# Broadest CLIA Test Menu

## Glyco Metabolism

C-Peptide  
 Insulin  
 ICA  
 IAA (Anti Insulin)  
 Proinsulin  
 GAD 65  
 Anti-IA2

## Hepatic Fibrosis

HA  
 PIIIP N-P  
 C IV  
 Laminin  
 Cholyglycine

## EBV

EBV EA IgG  
 EBV EA IgA  
 EBV VCA IgG  
 EBV VCA IgM  
 EBV VCA IgA  
 EBV NA IgG  
 EBV NA IgA

## Fertility

FSH  
 LH  
 HCG/ $\beta$ -HCG  
 PRL  
 Estradiol  
 Testosterone  
 free Testosterone  
 DHEA-S  
 Progesterone  
 free Estriol  
 17-OH Progesterone  
 AMH  
 SHBG  
 Androstenedione  
 \*PIGF  
 \*sFlt-1

## Inflammation Monitoring

hs-CRP  
 PCT (Procalcitonin)  
 IL- 6  
 \*SAA(Serum Amyloid A)

## Autoimmune

TGA(Anti-Tg)  
 Anti-TPO  
 TRAb  
 TMA  
 ICA  
 IAA(Anti Insulin)  
 GAD 65  
 Anti-IA2  
 Anti-dsDNA IgG  
 ANA Screen  
 ENA Screen  
 Anti-Sm IgG  
 Anti-Rib-P IgG  
 Anti-Scl-70 IgG  
 Anti-Centromeres IgG  
 Anti-Jo-1 IgG  
 Anti-M2-3E IgG  
 Anti-Histones IgG  
 Anti-nRNP/Sm IgG  
 Anti-SS-B IgG  
 Anti-SS-A IgG  
 Anti-CCP  
 \*Anti-Cardiolipin IgG  
 \*Anti-Cardiolipin IgM  
 \*Anti-MPO

## Bone Metabolism

Calcitonin  
 Osteocalcin  
 25-OH Vitamin D <sup>FDA</sup>  
 Intact PTH  
 \* $\beta$ -CrossLaps ( $\beta$ -CTX)  
 \*total P1NP

## Kidney Function

$\beta_2$ -MG  
 Albumin  
 \*NGAL

## Immunoglobulin

IgM  
 IgA  
 IgE  
 IgG

## Others

Cortisol  
 GH (hGH)  
 IGF-I  
 ACTH  
 IGFBP-3

# MAGLUMI Special Assays

## Autoimmune (Anti-dsDNA, ANA Screen, ENA Screen, Anti-Sm, Anti-Rib-P, Anti-Centromeres, Anti-Jo-1, Anti-M2-3E, Anti-Histones, Anti-nRNP/Sm, Anti-SS-B, Anti-SS-A, Anti-CCP)

Antinuclear antibodies (ANA) are autoantibodies of different specificity directed against antigens of the cell nucleus. Systemic autoimmune diseases are characterized by the presence of antinuclear antibodies. The presence of antinuclear antibodies occurs with high frequency in systemic autoimmune diseases such as Systemic Lupus Erythematosus (SLE), Mixed Connective Tissue Disease (MCTD), Sjogren's Syndrome (SS), Systemic Sclerosis (SSc), Poly/Dermatomyositis (PM/DM) and Primary Biliary Cirrhosis (PBC).

## Anti-TPO

Thyroid peroxidase (TPO) is a key enzyme in the synthesis of thyroid hormones. Disorders of the thyroid gland are frequently caused by autoimmune mechanisms Anti-TPO activate the complement. The increase of Anti-TPO is often seen in autoimmune thyroid diseases such as: Hashimoto thyroiditis, Graves' disease and Hypothyroidism.

## TRAb

TSH receptor antibodies (TRAbs) are the auto- antibodies of the thyroid membrane TSH receptor (TSHR). TRAbs are grouped depending on their effects on receptor signalling: activating antibodies (associated with hyperthyroidism), blocking antibodies (associated with thyroiditis) and neutral antibodies.

## 25-OH Vitamin D

25-OH Vitamin D (25-hydroxylation of Vitamin D also known as Calcifediol) is a prohormone that is produced in the liver by hydroxylation of Vitamin D by the enzyme cholecalciferol 25-hydroxylase. Concentration of 25-OH Vitamin D is considered the best indicator of Vitamin D status.

## ProGRP

Gastrin-releasing peptide (GRP) is an important regulatory molecule. Studies have confirmed that small cell lung cancer (SCLC) patients with tumor cells produced GRP and ProGRP was positively correlated, therefore, the detection of ProGRP in serum is a general method.

## H.pylori IgG & IgA & IgM

After contact with H.pylori, patients may exhibit antibodies of classes IgA, IgG and IgM against H.pylori in the serum. IgM antibodies are formed a few days after contact with H.pylori. After a few weeks specific IgM is no longer detectable. IgA antibodies usually form after a few weeks and remain detectable over a long time period.

## HER-2

Numerous reports have revealed that the Human Epidermal Growth Factor Receptor 2 (HER-2) gene and its protein products play an important role in the occurrence, development and metastasis of breast cancer. The overexpression of HER-2 usually indicates that breast cancer is highly malignant and prone to relapse and metastasis with poor prognosis.

## SCCA

The SCC-Ag is a serological tumor marker and it is a subfraction of the tumor-associated antigen TA-4, characterized as glycoprotein. Serum concentration of SCC-Ag correlates with stage of disease, the presence or absence of risk factors, the effect of treatment and the oncological outcome.

## HE4

The human epididymal protein 4 (HE4) belongs to the family of whey acidic four-disulfide core (WFDC) proteins with suspected trypsin inhibitor properties. HE4 can detect 67% sensitivity to ovarian cancer with a specific level of 96% and shows the highest sensitivity of any single marker, especially in early stage disease.

## Gastrin-17

Gastrin-17 has the strongest biological activity in the Gastrin family, which can be used for the diagnosis of Zollinger-Ellison Tumor (Gastrinoma) and Peptic Ulcer Disease, early screening and prognosis of Gastric Carcinoma and differential diagnosis of Chronic Atrophic Gastritis (CAG).

## CA 50

Cancer antigen 50 (CA 50) is a non-specific tumor marker for a variety of cancers, which may elevate in most cases of pancreatic cancer. CA 50 has been used to diagnose different types of cancers in combination with other markers. It has also been used to evaluate treatment response and monitor cancer recurrence.

## CA 72-4

Elevated CA 72-4 has been found in patients with epithelial ovarian cancer but not those with benign ovary diseases. Therefore, CA 72-4 is a valuable marker for distinguishing patients with ovary malignant diseases between those with benign diseases. Combination test of CA 72-4, CEA and CA 199 could increase the sensitivity for diagnosis of gastric cancer.

## PG I/PG II

Pepsinogen (PG) is a kind of aspartate protease secreted by digestive gland. According to the immunogenicity it can be divided into two types: PG I and PG II. PG can be used to reflect the status and function of gastric mucosa. PG I/PG II < 3 as diagnostic cut-off value.

## CA242

CA 242 has been used in the diagnosis of pancreatic cancer and colorectal cancer. In combination with other markers such as CA 19-9 and CEA, increased sensitivity and specificity may give some values for cancer diagnosis. CA 242 is also used to monitor patients with pancreatic cancer and colorectal cancer after surgery.

## NSE

Neuron specific enolase (NSE) is a kind of enolase that involved in glycolysis pathway. The study of NSE shows that it excessively exist in the tumors which origin from neuroendocrine tissue, especially in small cell lung cancer (SCLC), results in the obvious increase of serum NSE level.

## CYFRA 21-1

As the high specificity and sensitivity, CYFRA 21-1, a fragment of cytokeratin 19, has become the most valuable serum tumor marker for squamous cell carcinoma, especially for the non-small cell lung cancer (NSCLC) and becoming the first choice of NSCLC diagnosis.



# MAGLUMI Special Assays

## f-PSA/Total PSA

The level of Prostate-specific antigen (PSA) is very low in the blood of healthy men, most PSA is often bound to serum proteins while few of the PSA which are not bound with serum proteins, is defined as "free PSA (f-PSA)". A lower ratio of f-PSA/total PSA is an indicator of prostate cancer occurrence or recurrence.

## Androstenedione

Androstenedione is a C19 steroid hormone, and its overproduction is due to ovarian dysfunction or may be of adrenal origin. High circulating levels are found in women with polycystic ovaries and 21-hydroxylase deficiency. Significant lower levels are found in postmenopausal osteoporosis.

## SHBG

Sex hormone-binding globulin (SHBG) is a glycoprotein responsible for blood transport of testosterone and estradiol. Blood SHBG concentrations are affected by a number of different diseases, such as hyperthyroidism, hypogonadism, hirsutism, virilism, polycystic ovarian syndrome (PCOS).

## 17-OH Progesterone

17-OH Progesterone is mainly converted by Progesterone in Adrenal cortex, and partly in gonad. 17-OH Progesterone can be used for the evaluation of patients with suspected congenital adrenal hyperplasia (CAH), primarily for newborns and adolescent girls. 17 $\alpha$ -hydroxylase deficiency may lead to very low or undetectable levels of 17-OH Progesterone.

## free Testosterone

Only measurement of free testosterone permits the estimating of the hormone biological activity. Free testosterone determinations are recommended to overcome the influences caused by variations of transport proteins on the total testosterone concentration.

## AMH

The Anti-Mullerian Hormone (AMH), a peptide homodimer of molecular weight 140 kDa, plays an important role in sexual determination and differentiation during embryonic development. AMH is correlated with ovarian pathophysiology and can be used for the diagnosis of abnormal sex development in children.

## H-FABP, hs-cTnI

For early diagnosis of acute myocardial infarction (AMI), Heart-type Fatty Acid Binding Protein (H-FABP) and hs-cTnI show better detection sensitivity. H-FABP is an ideal diagnostic marker of AMI recurrence and an important mortality predication marker of acute coronary syndrome (ACS). The hs-cTnI assays will improve both early diagnosis and short and long-term risk stratification.

## NT-proBNP

NT-proBNP is a marker of hemodynamic stress on the heart, denoting the neurohumoral activation of the myocardium. NT-proBNP is mainly secreted by myocardial cells of ventricular wall, which can be used for diagnosis of congestive heart failure (CHF), grade and prognosis of heart failure and risk stratification of patients with acute coronary syndrome (ACS) and CHF.

## Lp-PLA2

Lp-PLA2, a member of phospholipase A2 superfamily, is associated with circulating atherogenic lipoproteins, and is highly expressed in the diseased vessel. Lp-PLA2 has predictive value for CHD or cardiovascular complications in healthy individuals and for recurrent events in patients with known atherosclerosis.

## Direct Renin

Renin, also known as an angiotensinogenase, is a kind of proteolytic enzyme secreted by the juxtaglomerular cells of kidney. Direct Renin can be used for the diagnosis of hypertension, the guidance for hypertension treatment and the diagnosis of renin-producing tumors in the kidney. The ratio between Direct Renin and Aldosterones can be used for the diagnosis of Primary Aldosteronism (PA).

## Aldosterone

Aldosterone (ALD) is a hormone synthesized by the adrenal glands, which plays an important role in maintaining normal sodium and potassium concentrations in blood. Testing ALD can be used for diagnosis of the primary hyperaldosteronism (Conn's syndrome) and secondary hyperaldosteronism.

## Hepatic Fibrosis (HA, PIIIP N-P, C IV, Laminin, Cholyglycine)

Hyaluronic acid (HA) can sensitively reflect the fiber amount generated in liver and show the condition of liver damage accurately. In chronic liver diseases and fibrosis, Laminin (LN) is progressively deposited along Disse's space accompanying sinusoid capillarization and its serum values have been related to the degree of portal hypertension. P III P N-P serum can reflect the stage of liver fibrosis in chronic liver disease. Type IV collagen (C IV) is one of the earliest synthesized during experimental injury, and the serum level of C IV is a useful biomarker in the research of hepatic injury and fibrosis. When liver cells are damaged, the capacity of CG absorption reduced, CG concentration in the blood increased.

## PCT, IL-6

Procalcitonin (PCT) and Interleukin-6 (IL-6) can be released as an acute-phase reactant in response to inflammatory stimuli, especially those of bacterial origin. PCT will be increased in bacterial infections, reflecting the activity of systemic inflammatory response. IL-6 reaches peak concentrations several hours before the rise in CRP and PCT concentration occurs, therefore, IL-6 and PCT can be used for the inflammation monitoring with combined detection.

## CSA

Cyclosporin A (CSA) is used in medicinal transplantation and cure of autoimmune diseases as a available immunosuppressive drug. The safety margin of cyclosporine is narrow. Therefore, the application of cyclosporin requires drug monitoring.

## FK506

FK506 (tacrolimus) is an immunosuppressive drug that is used mainly for organ transplant to reduce the activity of the patient's immune system. Monitoring the levels of FK506 in blood can promptly adjust medication of FK506 via drug interactions and reduce the incidence of renal toxicity and rejection.

## Cortisol

Cortisol is synthesized from cholesterol and its production is stimulated by pituitary adrenocorticotrophic hormone (ACTH) which is regulated by corticotropin releasing factor (CRF). Increased cortisol levels may indicate: Cushing's syndrome or Adrenal tumors in patients. Decreased cortisol levels may indicate: Underactive or damaged adrenal glands (adrenal insufficiency).

# Key Techniques

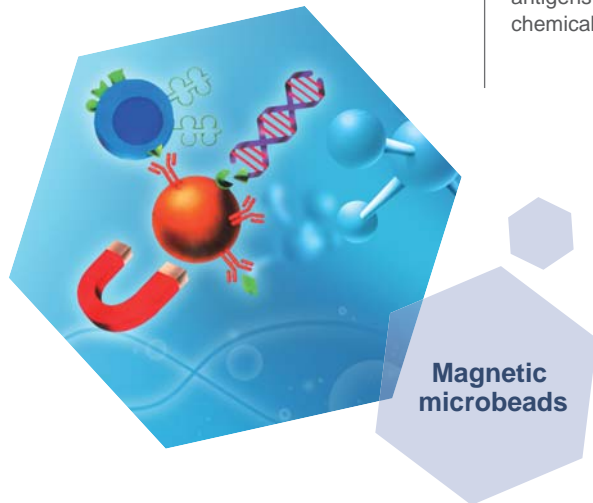
## Chemiluminescence Immunoassay (CLIA) System

CLIA uses two important technologies, one is the labelling technology which determines the reaction mode, and the other is a separation technology which determines the sensitivity, accuracy and precision of the reagents.

### LABELLING TECHNOLOGY

Two types of labelling technologies are commonly used. One is an enzyme label and another is a non-enzyme small molecule. Enzyme label reagents are not very stable and easily affected by the change of storage conditions.

The MAGLUMI system applies ABEI labels. ABEI is a non-enzyme small molecule with special molecular formula to enhance stability in acid and alkaline buffer. Using fast Chemiluminescence, ABEI's chemical reaction with sodium hydroxide (NaOH) and Hydroperoxide ( $H_2O_2$ ) finishes the process in 3 seconds.



### SEPARATION TECHNOLOGY

MAGLUMI uses Magnetic Microbeads. As separation technology, it has been widely used in the field of CLIA.

Compared with traditional separation technology, it has the following advantages:

- Shortening the reaction time by enlarging the reaction area of antigens and antibodies.

- Enhancing the sensitivity by better and faster capture of antigens and antibodies.

- Reducing inter or intra-assay discrepancies significantly by mixing the reagents thoroughly in a liquid separation platform.

- Enhancing the accuracy by absorbing antigens and antibodies through chemical reaction.

### PRODUCT ADVANTAGES

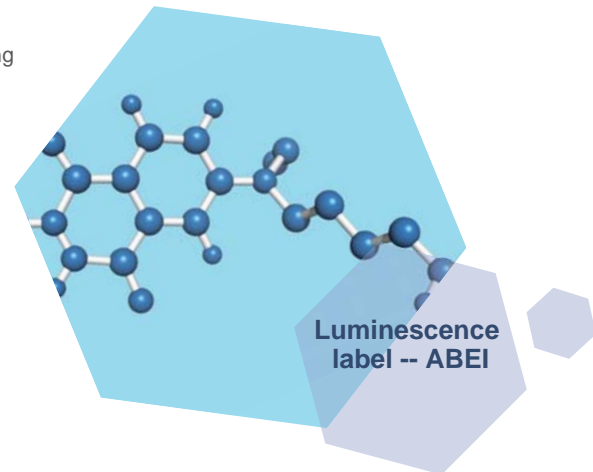
- Comprehensive test menu, over 160 parameters

- High throughput, up to 600 tests/hour

- Reliable performance, lower breakdown rate

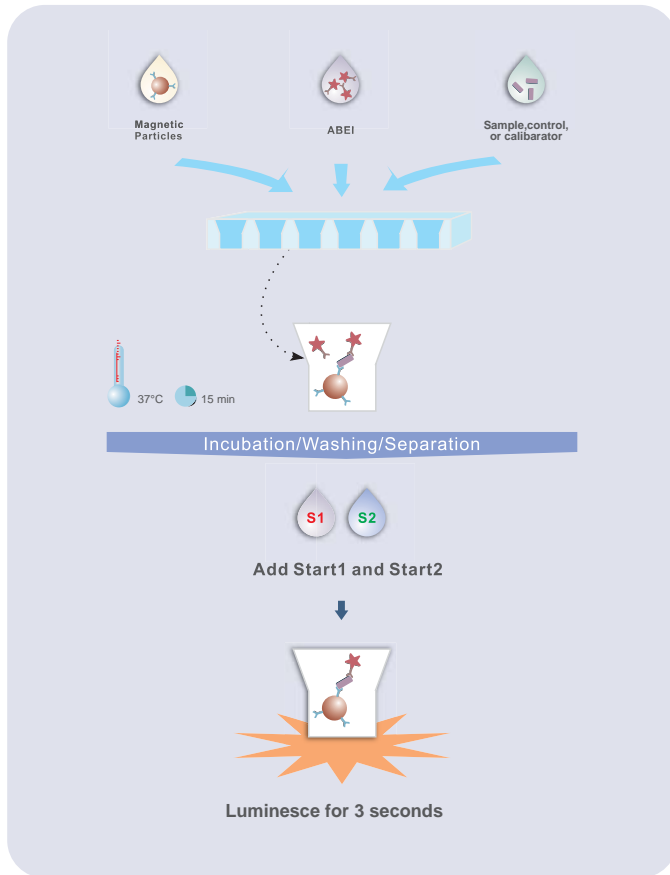
- Same reagent package available for series instruments

- Integrated reagent kit, internal control and calibrators FOC

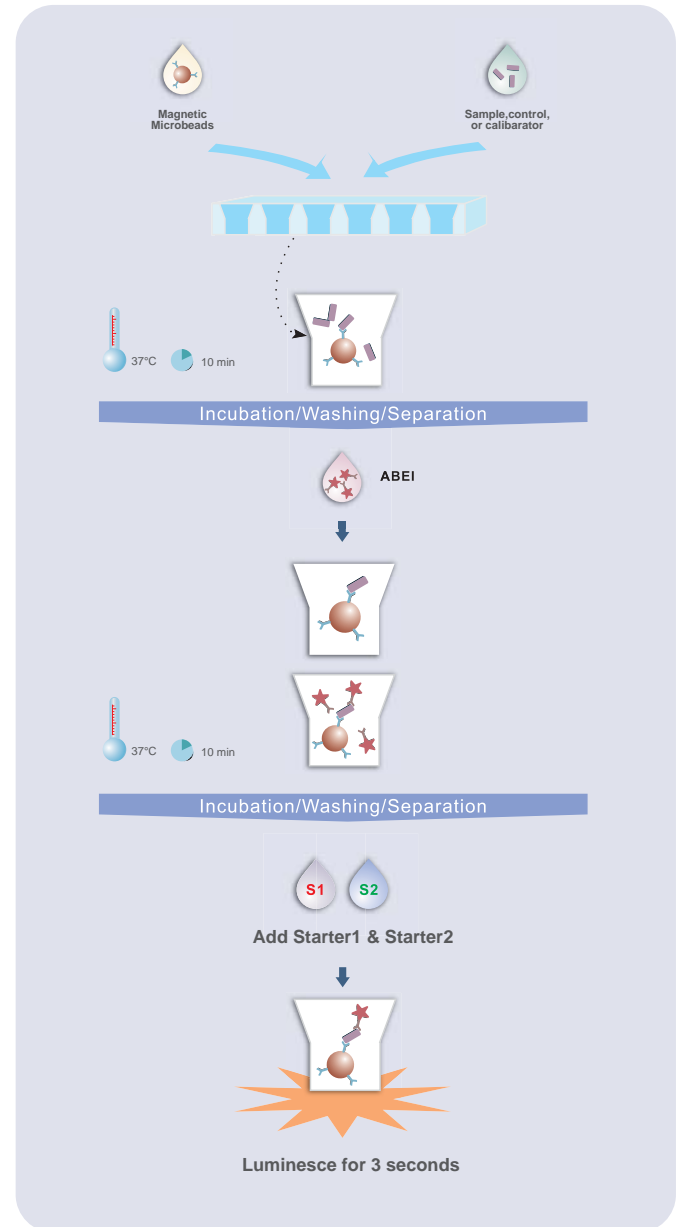


# Principle

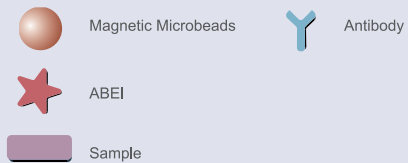
## ONE STEP ASSAY



## TWO STEP ASSAY

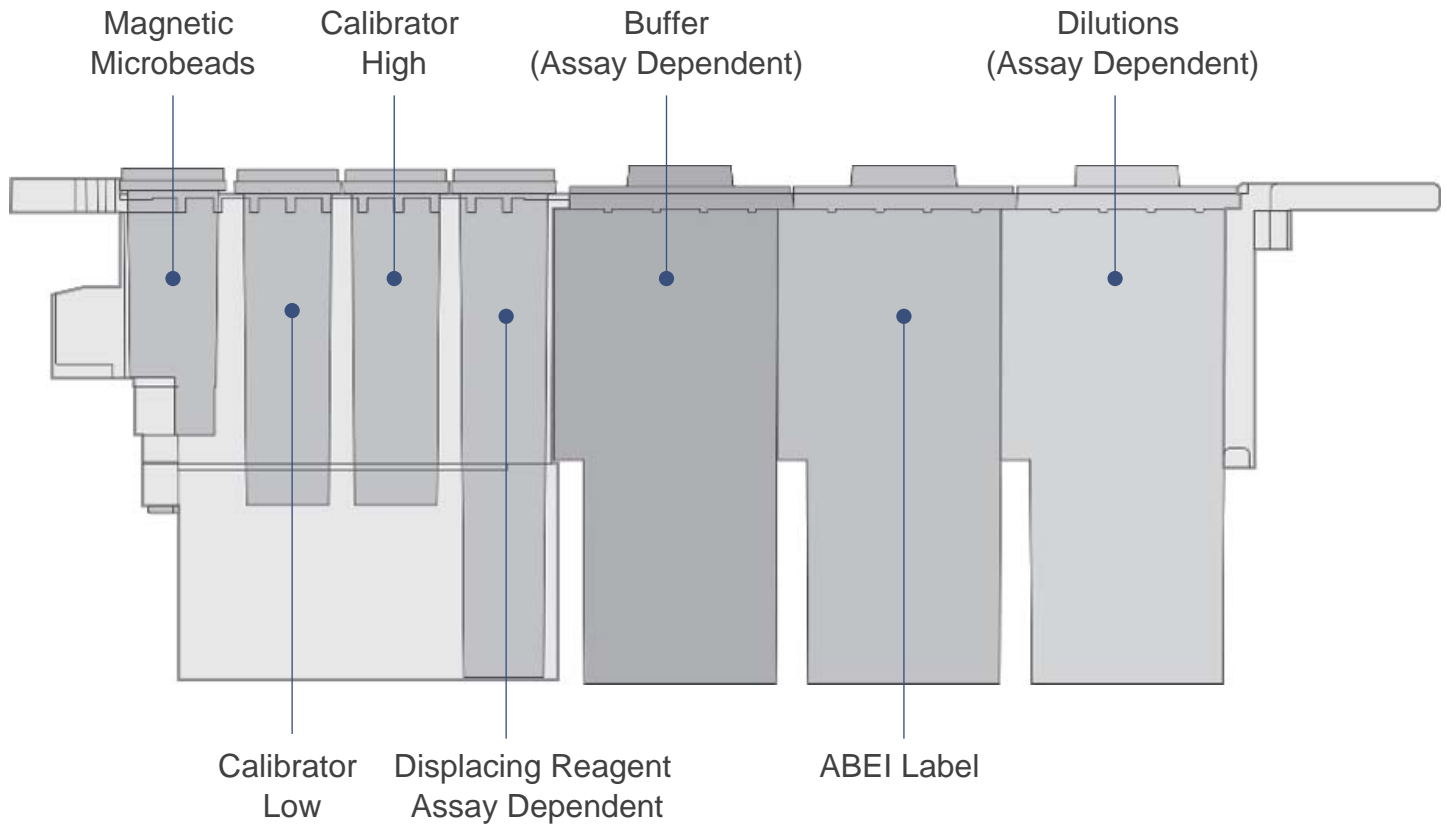


## NOTE





# Reagent Component



Reagent (50T/100T)

# Consumables



1

Reaction Module



2

Light Check



3

Wash Concentrate



4

Starter 1+2



5

Tubing Cleaning Solution



6

Reagent Storage Box



# Biochemistry Analyzer



## Bioassays 240

### SPECIFICATION

- Throughput: **240** tests/hour
- Sample Handling: up to **90** sample positions, STAT
- Reagent Handling: up to **90** reagent positions, with refrigeration
- Reaction cuvette: **80** (Disposable)
- ISE: optional



## Bioassays 240 Plus

### SPECIFICATION

- Throughput: **240** tests/hour
- Sample Handling: up to **90** sample positions, STAT
- Reagent Handling: up to **90** reagent positions, with refrigeration
- Reaction cuvette: **80** (Reusable)
- ISE: optional
- Washing Station: Available



## Bioassays BC1200

### SPECIFICATION

- Throughput: **600** T/H (Photometric), **600** T/H (ISE Module)
- Sample Handling: **115** sample positions, STAT
- Reagent Handling: **2** trays, **90** reagent positions, with refrigeration
- Reaction cuvette: **120**
- ISE: optional



## Bioassays BC2200

### SPECIFICATION

- Throughput: **1600** tests/hour
- Sample Handling: **280** sample positions, STAT
- Reagent Handling: **2** trays, **90** reagent positions, with refrigeration
- Reaction cuvette: **330**

# Biochemistry Test Menu

## Cardiac

CK  
CK-MB  
α-HBDH  
LDH  
\*LDH1

## Hepatic

TBA  
ALT (SGPT)  
AST (SGOT)  
ALP  
GGT  
TBIL  
DBIL  
TP  
ALB  
\*Ammonia  
\*PA  
\*CHE  
\*AFU  
\*5'-NT

## Diabetes

GLU  
LAC  
\*HbA1c  
\*GSP  
\*D3-HB  
\*GA  
\*NAG

## ISE

Na  
K  
Cl  
Ca  
pH

## Inorganic Ion

Fe (Iron)  
Ca  
P (phos)  
\*Mg

## Special Protein

IgM  
IgA  
IgG  
Transferrin  
\*ASO  
\*RF  
\*CRP (Full Range)  
\*UIBC  
\*Urine/CSF Protein  
\*G6PD  
\*C3  
\*C4  
\*ACP  
\*Haptoglobin

## Lipids

HDL-C  
LDL-C  
TC  
TG  
ApoE  
ApoA1  
ApoB  
Lp(a)  
Hcy  
\*NEFA

## Renal

Cr (CREA)  
Uric Acid  
Urea  
\*Cysc  
\*mALB  
\*α1-MG  
\*β2-MG  
\*Urine/CSF Protein  
\*RBP

## Pancreatic

α-AMY  
\*LIP

\* Available soon







# External Quality Assessment

Snibe participates various EQA program every year



CAP Proficiency Test



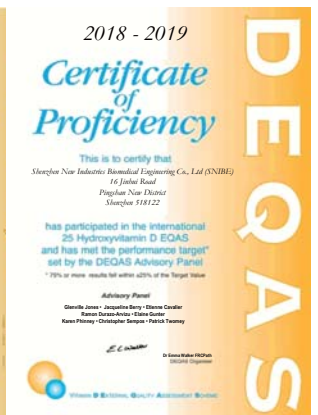
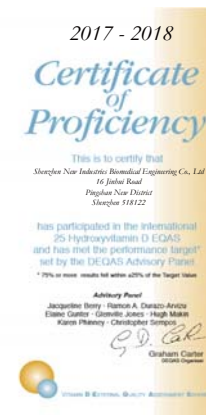
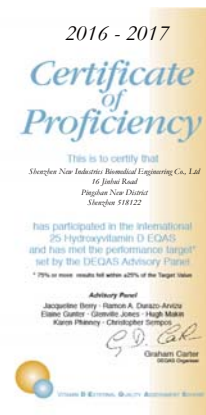
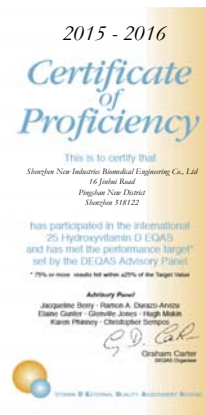
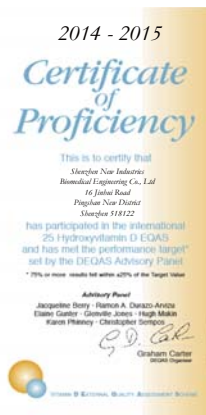
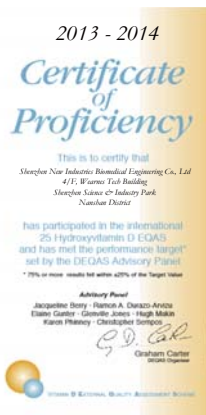
RCPAQAP



BIO-RAD External Quality Assurance Services (EQAS)



Randox International Quality Assessment Scheme (RIQAS)



Snibe participated in the international 25 OH Vitamin D EQAS and gained the certificate for 6 consecutive years.

## New Headquarters

### R&D Production Center







## Analyzer Production

- High precision Instrument Production, over 9000 m<sup>2</sup>
- Auto-Immunoassay Analyzer: 3000 units/year.
- Auto-Chemistry Analyzer: 1500 units/year.



## Reagent Production

- Modern kits production facility, over 12000 m<sup>2</sup>
- 8 production lines
- With annual productivity of 4 million reagent kits



# Analyzer Comparison

## High workload system






Manufacturer	Comparison	Specification	Principle	Throughput	Time to First Result	Sample Positions	Clot Detection	Reagent Positions	On-board Refrigeration	Loading Number of cuvettes in One Time		Operation Mode	Reagent Kit	On-board Shelf Life Reagent Kit	Stability of Recalibration	Lumination Label	Substrate	Solid Phase
Snibe		<b>MAGLUMI X8</b>	Flash CLIA	600 tests/hour	15 mins	300	available	42	available	2912		random access, batch, STAT	control and calibrators included	4 weeks	1-4 weeks	ABEI	NaOH, H <sub>2</sub> O <sub>2</sub>	Superpara magnetic microbeads
Snibe		<b>MAGLUMI 4000Plus</b>	Flash CLIA	280 tests/hour	16 mins	144	available	25	available	960		random access, batch, STAT	control and calibrators included	4 weeks	1-4 weeks	ABEI	NaOH, H <sub>2</sub> O <sub>2</sub>	Superpara magnetic microbeads
SIEMENS		<b>Immulite 2000</b>	Glow CLIA	200 tests/hour	35 mins	90	available	24	available	1000		random access, batch, STAT	calibrators and QC extra charged	90 days	2 weeks	ALP	AMPPD	Plastic balls, centrifuging needed
SIEMENS		<b>Centaur XP</b>	Flash CLIA	240 tests/hour	18 mins	180	available	30	available	1000		random access, batch, STAT	calibrators and QC extra charged	4-28 days	1-4 weeks	Acridinium ester	NaOH, H <sub>2</sub> O <sub>2</sub>	Superpara magnetic particles
ABBOTT		<b>Architect i2000 SR</b>	Flash CLIA	200 tests/hour	15 mins	135	available	25	available	1200		random access, batch, STAT	calibrators and QC extra charged	4-28 days	14 days	Acridinium ester	NaOH, H <sub>2</sub> O <sub>2</sub>	Superpara magnetic particles
ROCHE		<b>Cobas E601</b>	ECLIA	170 tests/hour	17 mins	150	available	25	available	1006		random access, batch, STAT	calibrators and QC extra charged	4-28 days	2-4 weeks	[Ru(bpy) <sub>3</sub> ] <sup>2+</sup> ruthenium	TPA	Superpara magnetic particles
BECKMAN		<b>Dxl 600</b>	Glow CLIA	200 tests/hour	12 mins	60	available	50	available	2200		random access, batch, STAT	calibrators and QC extra charged	56 days	56 days	ALP	AMPPD	Superpara magnetic particles
DIASORIN		<b>Liaison XL</b>	Flash CLIA	180 tests/hour	17mins	120	available	25	available	1000		random access, batch, STAT	QC extra charged	4 weeks	2-4 weeks	ABEI	NaOH, H <sub>2</sub> O <sub>2</sub>	Superpara magnetic particles
ORTHO		<b>VITROS 3600</b>	Glow CLIA	189 tests/hour	16 mins	90	available	31	N/A	N/A		random access, batch, STAT	QC extra charged	4 weeks	28 days	HRP	luminogenic substrates	Micro Well

# Analyzer Comparison

## Medium workload system

Manufacturer	Comparison	Specification	Principle	Throughput	Time to First Result	Sample Positions	Clot Detection	Reagent Positions	On-board Refrigeration	Loading Number of cuvettes in One Time		Operation Mode	Reagent Kit	On-board Shelf Life Reagent kit	Stability of Recalibration	Lumination Label	Substrate	Solid Phase
Snibe		<b>MAGLUMI 2000</b>	Flash CLIA	180 tests/hour	17 mins	144	available	15	available	720		random access, batch, STAT	calibrators and quality control included	4 weeks	1-4 weeks	ABEI	NaOH, H <sub>2</sub> O <sub>2</sub>	Superpara magnetic microbeads
ROCHE		<b>Cobas e411</b>	ECLIA	88 tests/hour	18 mins	30/75	available	18	available	180		random access, batch, STAT	calibrators and QC extra charged	14-56 days	4 weeks	[Ru(bpy) <sub>3</sub> ] <sup>3+</sup> ruthenium	TPA	Superpara magnetic particles
BECKMAN		<b>Access 2</b>	Glow CLIA	100 tests/hour	12 mins	60	not available	24	available	294		random access, batch, STAT	calibrators and QC extra charged	56 days	56 days	ALP	AMPPD	Magnetic particles
TOSOH		<b>AIA900</b>	Flourescence EIA	90 tests/hour	20 mins	100	available	Max 100 cups	not available	120		random access, batch, STAT	calibrators and QC extra charged	N/A	90 days	ALP	4-MUP	Magnetic beads
ABBOTT		<b>Architect i1000 SR</b>	Flash CLIA	100 tests/hour	15 mins	65	available	25	available	360		random access, batch, STAT	calibrators and QC extra charged	4-28 days	2 weeks	Acridine Ester	/	Superpara magnetic particles
DIASORIN		<b>LIAISON<sup>®</sup> XS</b>	Flash CLIA	85 tests/hour	17 mins	48	available	10	available	172		random access, batch, STAT	QC extra charged	4 weeks	2 weeks	ABEI	NaOH, H <sub>2</sub> O <sub>2</sub>	Superpara magnetic particles

## Low workload system

Manufacturer	Comparison	Specification	Principle	Throughput	Time to First Result	Sample Positions	Clot Detection	Reagent Positions	On-board Refrigeration	Loading Number of cuvettes in One Time		Operation Mode	Reagent Kit	On-board Shelf Life Reagent kit	Stability of Recalibration	Lumination Label	Substrate	Solid Phase
Snibe		<b>MAGLUMI 600</b>	Flash CLIA	180 tests/hour	17 mins	16	available	4	available	60		random access, batch, STAT	calibrators and quality control included	4 weeks	1-4 weeks	ABEI	NaOH, H <sub>2</sub> O <sub>2</sub>	Superpara magnetic microbeads
Snibe		<b>MAGLUMI 800</b>	Flash CLIA	180 tests/hour	17 mins	40	available	9	available	240		random access, batch, STAT	calibrators and quality control included	4 weeks	1-4 weeks	ABEI	NaOH, H <sub>2</sub> O <sub>2</sub>	Superpara magnetic microbeads
BIOMERIEUX		<b>VIDAS</b>	Flourescence EIA	30 tests/hour	45 mins	30	not available	30	not available	30		random access, batch, STAT	calibrators and quality control included	N/A	2-4 weeks	ALP	4-MUP	Coated pipetting tips
TOSOH		<b>AIA 600 II</b>	Flourescence EIA	60 tests/hour	18 mins	52 test cups	available	52	not available	52		random access, batch, STAT	calibrators and QC extra charged	N/A	90 days	ALP	4-MUP	Magnetic particles in cups
TOSOH		<b>AIA 360</b>	Flourescence EIA	36 tests/hour	20 mins	25 test cups	available	25	not available	25		random access, batch, STAT	calibrators and QC extra charged	N/A	90 days	ALP	4-MUP	Magnetic particles in cups





# Parameter Comparison

TEST MENU		Snibe MAGLUMI	ROCHE ELECSYS	ABBOTT ARCHITECT	ABBOTT ALINITY
Applicable Analyzers		All MAGLUMI Analyzers	Cobas e601/e411 Modular E170	ARCHITECT i1000/2000 SR	Alinity i/ii
Product Name					
Inflammation Monitoring	hs-CRP	○			
	PCT (Procalcitonin)	○	○	○	*
	IL-6	○	○		
	●SAA (Serum Amyloid A)	*			
Cardiac	CK-MB	○	○	○	○
	Troponin I	○	○	○	○
	Myoglobin	○	○	○	
	hs-cTnI	○		○	○
	H-FABP	○			
	NT-proBNP	○	○		○
	BNP	○		○	○
	Aldosterone	○			
	Angiotensin I	○			
	Angiotensin II	○			
	Direct Renin	○			
	D-Dimer	○	○		
	Lp-PLA2	○			
	hs-CRP	○			
●MPO	*				
Hepatic Fibrosis	HA	○			
	PIIIP N-P	○			
	C IV	○			
	Laminin	○			
	Cholyglycine	○			
Immunoglobulin	IgM	○			
	IgA	○			
	IgE	○	○		
	IgG	○			
Drug Monitoring	CSA (Cyclosporine A)	○	○	○	*
	FK 506 (Tacrolimus)	○	○	○	*
	Digoxin	○	○	○	
Infectious Disease	HBsAg	○	○	○	○
	Anti-HBs	○	○	○	○
	HBeAg	○	○	○	○
	Anti-HBe	○	○	○	○
	Anti-HBc	○	○	○	○
	Anti-HCV	○	○	○	○
	Syphilis	○	○	○	○

SIEMENS ATELLICA	SIEMENS ADVIA CENTAUR	SIEMENS IMMULITE	BECKMAN UNICELL	BIOMERIEUX VIDAS	DIASORIN LIASION
Atellica IM 1300/ IM 1600	CENTAUR CP/XP	Immulite 2000	Dxl 600/800	Mini vidas/Vidas3	LIASION XL
		○			
○	○			○	○
*	*	○	○		
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○	○	○		○	○
○	○	○		○	○
○	○	○		○	○



# Parameter Comparison

TEST MENU		Snibe MAGLUMI	ROCHE ELECSYS	ABBOTT ARCHITECT	ABBOTT ALINITY
Applicable Analyzers		All MAGLUMI Analyzers	Cobas e601/e411 Modular E170	ARCHITECT i1000/2000 SR	Alinity i/ii
Product Name					
Infectious Disease	Anti-HAV	○	○	○	○
	HAV IgM	○	○		
	HIV Ab/Ag combi	○	○	○	○
	Chagas	○	○	○	○
	HTLV I+II	○	○	○	○
	H.pylori IgG	○			
	H.pylori IgA	○			
	H.pylori IgM	○			
●Anti-HBc IgM	*	○	○		
TORCH	Toxo IgG	○	○	○	○
	Toxo IgM	○	○	○	○
	Rubella IgG	○	○	○	○
	Rubella IgM	○	○	○	○
	CMV IgG	○	○	○	○
	CMV IgM	○	○	○	○
	HSV-1/2 IgG	○	○		
	HSV-1/2 IgM	○			
	HSV-2 IgG	○	○		
	●HSV-2 IgM	*			
	●HSV-1 IgG	*	○		
	●HSV-1 IgM	*			
	EBV	EBV EA IgG	○		
EBV EA IgA		○			
EBV VCA IgG		○		○	○
EBV VCA IgM		○		○	
EBV VCA IgA		○			○
EBV NA IgG		○		○	○
EBV NA IgA		○			
Glyco Metabolism	C-Peptide	○	○	○	○
	Insulin	○	○	○	○
	ICA	○	○		
	IAA (Anti Insulin)	○	○		
	Proinsulin	○	○		
	GAD 65	○	○		
	Anti-IA2	○	○		

SIEMENS ATELLICA	SIEMENS ADVIA CENTAUR	SIEMENS IMMULITE	BECKMAN UNICELL	BIOMERIEUX VIDAS	DIASORIN LIASION
Atellica IM 1300/ IM 1600	CENTAUR CP/XP	Immulite 2000	Dxl 600/800	Mini vidas/Vidas3	LIASION XL
	○			○	○
○	○			○	○
○	○				○
					○
	*	○		○	○
		○		○	
○	○	○	○	○	○
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*					
*	○				
				○	○
				○	○
*		○			
*		○		○	○
○	○	○			○
○	○	○			○

Special parameters in orange ● Available soon

# Parameter Comparison

TEST MENU		Snibe MAGLUMI	ROCHE ELECSYS	ABBOTT ARCHITECT	ABBOTT ALINITY
Applicable Analyzers		All MAGLUMI Analyzers	Cobas e601/e411 Modular E170	ARCHITECT i1000/2000 SR	Alinity i/ii
Product Name					
Anemia	Vitamin B12	○	○	○	
	Ferritin	○	○	○	○
	Folate (FA)	○	○	○	○
	•RBC Folate	○	○		○
Autoimmune	TGA (Anti-Tg)	○	○	○	○
	Anti-TPO	○	○	○	○
	TRAb	○	○		*
	TMA	○			
	ICA	○			
	IAA (Anti Insulin)	○			
	GAD 65	○			
	Anti-IA2	○			
	ANA Screen	○			
	ENA Screen	○			
	Anti-dsDNA IgG	○			
	Anti-Sm IgG	○			
	Anti-Rib-P IgG	○			
	Anti-Scl-70 IgG	○			
	Anti-Centromeres IgG	○			
	Anti-Jo-1 IgG	○			
	Anti-M2-3E IgG (AMA-M2)	○			
	Anti-Histones IgG	○			
	Anti-nRNP/Sm IgG	○			
	Anti-SS-B IgG	○			
	Anti-SS-A IgG	○			
	•Anti-CCP	○	○	○	○
	•Anti-Cardiolipin IgG	*			
•Anti-Cardiolipin IgM	*				
•Anti-MPO	*				
Kidney Function	β <sub>2</sub> -MG	○			
	Albumin	○			
	•NAGL	*		○	*
Others	Cortisol	○	○	○	○
	GH (hGH)	○	○		
	IGF-I	○	○		
	ACTH	○	○		
	IGFBP-3	○			

SIEMENS ATELLICA	SIEMENS ADVIA CENTAUR	SIEMENS IMMULITE	BECKMAN UNICELL	BIOMERIEUX VIDAS	DIASORIN LIASION
Atellica IM 1300/ IM 1600	CENTAUR CP/XP	Immulite 2000	Dxl 600/800	Mini vidas/Vidas3	LIASION XL
○	○	○	○	○	*
○	○	○	○	○	○
○	○	○	○		*
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○	○	○	○	○	○
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○	○	○			
	○				○
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○	○	○	○	○	○
*		○	○		○
*		○			○
*		○			○
*		○			

Special parameters in orange ● Available soon

# Evaluation Poster

## Preference of joint detection for liver fibrosis

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 Snibe Reagent Research & Development  
 Center<sup>1</sup>, Shenzhen, China

### 1 Background

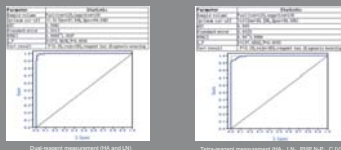
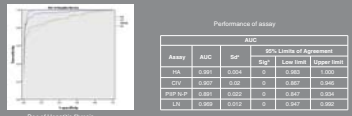
Liver repeats injury through the deposition of new collagen and other extracellular matrix, based on the level of these components, the liver fibrosis can be diagnosed. Direct serum markers hyaluronic acid (HA), laminin (LN), procollagen type III amino-terminal propeptide (PIIINP) type IV collagen(CIV) are proved to effective use for liver fibrosis diagnosis on Maglum Health immunochemiluminometric immunoassay (CLIA) system. In our past detection can improve the sensitivity and specificity to some extent and ensure the reliability, a method to evaluate the joint effect of these four biomarkers is introduced.

### 2 Methods

Herein, presenting results of 120 pathological samples (including 11 liver cancers, 87 cirrhosis and 21 liver fibrosis) and 100 Volunteers from Maglum Hepatic fibrosis. Quad marker test for CLIA on the Maglum 4000, Direct (Detection: New Indirect Immunological Engineering) fully automatic test. The results of four reagents (HA, LN, PIIINP, N-PIV) are analyzed by ROC, determining the optimum cut-off values and compare the clinical performance of these biomarkers, which are shown in Receiver's side and AUC. HA/LN-PIIINP-N-PIV. The AUC of the first three reagent are all over 0.9, and that of HA is over 0.990(99.1), even for PIIINP-N-PIV, the AUC is 0.891 as well, making these biomarkers a promising method for the detection of liver fibrosis.

### 3 Results:

As the result shown, the AUC of Maglum Hepatic fibrosis reagents (HA, LN, PIIINP, N-PIV) are 0.991(Sensitivity: 99%, Specificity: 99%), 0.969(Sensitivity: 93%, Specificity: 99%), 0.891(Sensitivity: 83%, Specificity: 98%) and 0.907(Sensitivity: 91%, Specificity: 98%) respectively, with cut-off value of 97.81, 46.46, 20.02 and 28.57 ng/ml. The clinical performance of the reagents is HA/LN-PIIINP-N-PIV.



### 4 Conclusions

As illustrated above, HA and LN of Snibe reagent kit perform optimum for the liver fibrosis, with AUC of 0.991 and 0.969 respectively. PIIINP and CIV do less well, during the liver fibrosis process, CIV tends to be an indicator of synthesis than deposition, while these reagents can use to differentiate alcoholic liver disease and different stage of chronic liver disease to most various demands. The results of joint detection show better clinical diagnosis ability than any single reagent. AUC for Dual-reagent measurement and Tetra-reagent measurement are 0.991 and 0.969 respectively. The distinction between dual-reagent and tetra-reagent measurement is not significant, Z=1.74<math>P</math>>0.05. Maglum Hepatic fibrosis Quad marker tests are effective for the liver fibrosis diagnosis, especially for the late stage. Owing to the low sample, the diagnosis on early stage and the prediction of advanced liver fibrosis stages have not done completely, which is the forthcoming work.

### 5 References

- Chen Z, Liu Q, Chen H, et al. Study on immunoassay laboratory tests for fibrosis in chronic HBV infection and their evaluation. J Clin Lab Anal. 2013; 27:5-11.
- Gressner AM, Weiskirchen R. Modern pathogenic concepts of liver fibrosis suggest stellate cells and TGF- $\beta$  as the major players and therapeutic targets. J Cell Mol Med. 2006; 10:76-99.

### The analytical evaluation of 7 immunoassay reagents, immunohistochemistry and 3 in-house chemiluminometric assays by Maglum 4000

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#### AIM

Immunoassay and protein measurements of C-reactive protein (CRP), proinflammatory (PCT) and D-dimer are of significant importance in the emergency diagnosis. In the present study, we aimed to evaluate the performance of the Snibe Maglum 4000 for C-reactive protein (CRP), proinflammatory (PCT) and D-dimer assays in comparison with Cobas (Roche), and BCS AP (Siemens) autoanalyzers.

#### MATERIALS AND METHODS

The study comprised 90 patient who admitted to the Isfahan University of Medical Faculty of Medicine. The CRP, PCT and D-dimer results obtained using Maglum 4000 were compared with the results of the same samples from Cobas (Roche) (immuno) and BCS AP (Siemens) (chemistry), which are currently installed in our laboratory. The precision, linearity, carry-over, and comparison studies were performed according to Clinical Laboratory Standards Institute (CLSI) guidelines (1-4).

#### RESULTS

The precision results of the Maglum and Roche for CRP, PCT and D-dimer were between 0.8 to 0.97 (Table 1). Both assays demonstrated good linearity within the sample detection range (P<0.0001) (Figure 1), and minimal carry-over was found for all analytes. The comparison of the Maglum, Cobas and BCS AP analyses presented good correlation with the line, and passed the following results for D-dimer:  $y = 0.992(99.2\%)x - 0.002(0.00\%) + 1.000(100.0\%)$  (mean bias: -0.04 ng/dL), for PCT:  $y = 0.928(92.8\%)x - 0.073(7.3\%) + 18.187(18.187\%) + 1.000(100.0\%)$  ( $r = 0.979$ ),  $n = 3.709$ ,  $r$ -mean bias: -1.2 ng/dL, for CRP:  $y = 0.937(93.7\%)x - 4.178(4.178\%) + 3.709(3.709\%) + 1.000(100.0\%)$  (mean bias: -4.4 ng/L) (Figure 2).

#### Table 1. Within-run and between-day CVs of C-reactive protein, proinflammatory and D-dimer assays.

C-Reactive Protein (mg/L)	Precision		D-Dimer (ng/dL)	
	Level 1	Level 2	Level 1	Level 2
Mean	1.06	30.23	0.54	0.57
SD	0.01	1.06	0.03	0.36
CV	0.79	2.18	0.67	0.29

#### Table 2. Between-Day CVs

C-Reactive Protein (mg/L)	Precision		D-Dimer (ng/dL)	
	Level 1	Level 2	Level 1	Level 2
Mean	0.76	49.02	0.53	0.48
SD	0.06	4.01	0.36	0.36
CV	4.16	8.24	7.74	4.44

#### CONCLUSION

According to our findings, the immunohistochemistry and immunoassay for all the three parameters were within the acceptable limits. Method comparison studies also revealed acceptable results for proinflammatory and D-dimer. Only the CRP results of Maglum showed a significant bias and a relatively poor correlation compared to the results obtained from Roche analyzer. Consequently, it can be concluded that the Snibe device is a suitable immunoassay platform for the measurement of proinflammatory and D-dimer, and can be used successfully and safely in clinical laboratories.

#### References

- CLSI document C28-A3. Precision evaluation of quantitative assays. CLSI, 2008.
- CLSI document EP06-A. Precision studies. CLSI, 2006.
- CLSI document EP07-A. Evaluation of linearity of clinical laboratory measurement procedures. CLSI, 2002.
- CLSI document EP09-A. Estimation of the total error of measurement procedures. CLSI, 2006.

### VALUTAZIONE DELLE PRESTAZIONI 2000 PLUS PER LA MISURA DELLA SPECIFICITA'

Grassli C.J., Bagnoli E.J., Bongi M.J., Carletti C., Fiori F., Palazzi A.C., Schiraga W., Tormaggi G., Tosi G.

**ANTIBODI** (1) sono molecole proteiche prodotte dal sistema immunitario in risposta ad un antigene estraneo. Sono costituiti da due catene pesanti e due catene leggere, che si uniscono per formare un dimero. Gli anticorpi sono in grado di riconoscere e legare specificamente un antigene, grazie alla loro struttura tridimensionale. Sono in grado di neutralizzare l'azione di un antigene, di agglutinare le cellule e di attivare il sistema immunitario.

**ANTIGENI** (2) sono molecole estranee al corpo che provocano la produzione di anticorpi. Possono essere di natura proteica, polisaccaridica o lipidica. Gli antigeni sono in grado di legarsi specificamente con un anticorpo, formando un complesso antigene-anticorpo.

**CONCLUSIONI** (3) I risultati delle prove di specificità e di sensibilità sono stati valutati. I risultati sono stati confrontati con quelli ottenuti con il metodo di riferimento. I risultati sono stati confrontati con quelli ottenuti con il metodo di riferimento. I risultati sono stati confrontati con quelli ottenuti con il metodo di riferimento.

### ANTI-GAD65: VERIFYING REFERENCE INTERVALS IN THE CLINICAL LABORATORY

W. Bazzani, C. Zoccai, R. Tassi, T. Scalfarini, M. Di Sisti, L. Sisti  
 I.R.C.C.S. Policlinico S. Matteo, Pavia, Italy

**Background** (1) Reference intervals (RI) are essential for clinical laboratory tests. The establishment of RI is a complex process that requires a large number of samples from a healthy population. The aim of this study was to verify the performance of the Maglum 4000 for the measurement of anti-GAD65 antibodies.

**Methods** (2) The study included 100 healthy subjects. The results were compared with those obtained with the reference method. The results were compared with those obtained with the reference method. The results were compared with those obtained with the reference method.

**Conclusions** (3) The results of the study show that the Maglum 4000 is a reliable method for the measurement of anti-GAD65 antibodies. The results were compared with those obtained with the reference method. The results were compared with those obtained with the reference method.

### TESTOSTERONA LIVRE

#### Comparação de resultados obtidos por Quimioimunescência com os obtidos por Radioimunoensaio

Dr. Joaquim Chaves, Laboratório de Análises Clínicas, Miraflores  
 Dr. Joaquim Neves, Jorge Nunes, Manuel Pinheiro, Patrícia Cordeiro, Carlos Cardoso

**Introdução** (1) O diagnóstico de Testosterona Livre é importante em casos específicos de hipogonadismo. O método de referência é a medida da testosterona total e a determinação da fração livre por meio de um método de equilíbrio dialético e Radioimunoensaio (RIA).

**Objetivos** (2) Comparar os resultados de diagnóstico de Testosterona Livre obtidos por um novo método de Quimioimunescência (CI) com o diagnóstico obtido por RIA, em laboratório de análises clínicas.

**Metodologia** (3) Foram avaliados 100 indivíduos com níveis de Testosterona Livre entre 0.2 e 0.7 nmol/L (média: 0.45). Os resultados foram comparados com os obtidos por RIA. Os resultados foram comparados com os obtidos por RIA. Os resultados foram comparados com os obtidos por RIA.

**Resultados** (4) Os resultados de diagnóstico de Testosterona Livre obtidos por CI foram comparados com os obtidos por RIA. Os resultados foram comparados com os obtidos por RIA. Os resultados foram comparados com os obtidos por RIA.

**Conclusões** (5) Os resultados de diagnóstico de Testosterona Livre obtidos por CI foram comparados com os obtidos por RIA. Os resultados foram comparados com os obtidos por RIA. Os resultados foram comparados com os obtidos por RIA.

### Y OF AN EXTENDED PROFILE OF SEROLOGICAL MARKERS

#### NS DETECTED BY AN AUTOMATED IMMUNOASSAY METHOD (MAGLUM™ 2000 PLUS)

Y. Azzollu, F. D'Aurizio<sup>1</sup>, E. Paella<sup>1</sup>, P. Martelli<sup>1</sup>, D. Villalta<sup>1</sup>  
<sup>1</sup>Angeli Hospital, University Hospital, Udine, Italy  
<sup>2</sup>Immunology Laboratory, S. Maria degli Angeli Hospital, Pordenone, Italy

**Background** (1) The aim of this study was to evaluate the performance of the Maglum 2000 Plus for the detection of a wide range of serological markers.

**Methods** (2) The study included 100 patients with various serological markers. The results were compared with those obtained with the reference method. The results were compared with those obtained with the reference method.

**Results** (3) The results of the study show that the Maglum 2000 Plus is a reliable method for the detection of a wide range of serological markers. The results were compared with those obtained with the reference method. The results were compared with those obtained with the reference method.

**Conclusions** (4) The results of the study show that the Maglum 2000 Plus is a reliable method for the detection of a wide range of serological markers. The results were compared with those obtained with the reference method. The results were compared with those obtained with the reference method.

### REFERENCE INTERVALS FOR THYROID PEROXIDASE ACTIVITY ACCORDING TO NACB GUIDELINES: A FOUR AUTOMATED METHODS

I. Castello<sup>1</sup>, I. Tommasi<sup>2</sup>, D. Villalta<sup>3</sup>, M. Morandini<sup>4</sup>, Ortoluzzi<sup>5</sup>, A. Polizzi Anselmo<sup>6</sup>, R. Tozzoli<sup>7</sup>

**Background** (1) Reference intervals (RI) are essential for clinical laboratory tests. The establishment of RI is a complex process that requires a large number of samples from a healthy population. The aim of this study was to verify the performance of the Maglum 4000 for the measurement of thyroid peroxidase activity.

**Methods** (2) The study included 100 healthy subjects. The results were compared with those obtained with the reference method. The results were compared with those obtained with the reference method.

**Results** (3) The results of the study show that the Maglum 4000 is a reliable method for the measurement of thyroid peroxidase activity. The results were compared with those obtained with the reference method. The results were compared with those obtained with the reference method.

**Conclusions** (4) The results of the study show that the Maglum 4000 is a reliable method for the measurement of thyroid peroxidase activity. The results were compared with those obtained with the reference method. The results were compared with those obtained with the reference method.





# Evaluation Poster

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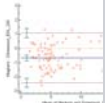
## TACROLIMUS: CONFRONTO TRA DUE METODI ANALITICI

E Barzon<sup>1</sup>, L'Fomer<sup>1</sup>, MG Meneghini<sup>1</sup>, M Lovato<sup>1</sup>, C Dalla Valle<sup>1</sup>, D Giavarina<sup>2</sup>  
Laboratorio Analisi ULSS 8 Berica, Vicenza

**Introduzione:** Il tacrolimus (FK506) è un immunosoppressore della classe degli inibitori della calcineurina (CaN) che in costante aumento è usato terapeutico in campo di trapianti d'organo. Il metodo di riferimento per la determinazione del tacrolimus è la cromatografia liquida accoppiata alla spettrometria di massa (LC-MS/MS). I metodi immunoenzimatici (EIA) sono ancora molto utilizzati per la loro semplicità e per il basso costo. Tuttavia, presentano alcuni limiti: scarsa specificità, interferenze, scarsa sensibilità e scarsa precisione. Il nuovo metodo MagM (Magnum) è un metodo immunoenzimatico che ha superato tutti questi limiti.

**Materiali e metodi:** La comparazione è stata effettuata con il metodo di riferimento (LC-MS/MS) e il nuovo metodo MagM (Magnum) su 100 campioni di sangue intero.

**Risultati:** L'analisi di regressione ha mostrato una correlazione molto alta tra i due metodi (R<sup>2</sup> = 0,99).



## VALUTAZIONE DI DUE METODI IMMUNOMETRICI AUTOMATIZZATI PER LA MISURA DEL 17α-OH-DROSSI-PROGESTERONE

R. Tozzoli<sup>1</sup>, P. Metus<sup>1</sup>, F. D'Aurizio<sup>1</sup>, E. Pallela<sup>1</sup>

<sup>1</sup>Laboratorio di Patologia Clinica, Dipartimento di Medicina di Laboratorio, Ospedale S. Maria degli Angeli, Pordenone  
<sup>2</sup>Laboratorio Unico Interaziendale, Azienda Sanitaria Universitaria Integrata, Udine

**Introduzione:** Il 17-OH-progesterone (17-OHP) rappresenta un importante ormone surrenalico, precursore degli ormoni mineralocorticoidi e glucocorticoidi, marcatore dell'ipercortisolismo surrenalico, legato al deficit di 21-idrossilasi. La sua misura è stata per lungo periodo solo con metodi immunometrici (ELISA) e a base di estrazione, ad alto costo e con tempi di esecuzione lunghi.

### Scopo dello studio

Scopo dello studio è stato la valutazione delle caratteristiche analitiche, sensibilità e della linea di correlazione con un metodo di riferimento.

### Materiali e metodi

Sono stati considerati 57 campioni di siero della routine con richiesta di 17-OHP. Sono stati analizzati con il metodo di riferimento (GC-MS/MS) e con il nuovo metodo MagM (Magnum).

### Risultati

Il nuovo metodo MagM (Magnum) ha mostrato una correlazione molto alta con il metodo di riferimento (GC-MS/MS) (R<sup>2</sup> = 0,99).

Metodo	Media (ng/mL)	Dev. Std. (ng/mL)	Intervallo (ng/mL)
GC-MS/MS	0,15	0,05	0,05 - 0,25
MagM (Magnum)	0,15	0,05	0,05 - 0,25



**Conclusioni:** Il nuovo metodo MagM (Magnum) ha mostrato una correlazione molto alta con il metodo di riferimento (GC-MS/MS).

## DEFINITION OF THE UPPER REFERENCE LIMIT FOR THYROGLOBULIN ANTIBODIES ACCORDING TO NACB GUIDELINES. COMPARISON OF SIX AUTOMATED METHODS

F D'Aurizio<sup>1</sup>, P. Metus<sup>1</sup>, A. Ferraro<sup>1</sup>, R. Canzon<sup>1</sup>, C. Crocco<sup>1</sup>, R. Castello<sup>1</sup>, D. Villalta<sup>1</sup>, M. R. Tozzoli<sup>1</sup>

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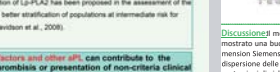
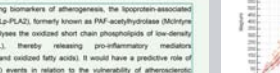
## CICLOSPORINA: CONFRONTO TRA DUE METODI ANALITICI

E Barzon<sup>1</sup>, MG Meneghini<sup>1</sup>, L'Fomer<sup>1</sup>, M Lovato<sup>1</sup>, C Dalla Valle<sup>1</sup>, D Giavarina<sup>2</sup>  
Laboratorio Analisi, ULSS 8 Berica, Vicenza

**Introduzione:** La ciclosporina (CSA) è un immunosoppressore appartenente alla classe degli inibitori della calcineurina utilizzato come farmaco antirepello. La misurazione delle concentrazioni di CSA nel sangue intero rappresenta il criterio più efficace per assicurare un'adeguata terapia immunosoppressiva. Il nuovo metodo MagM (Magnum) è un metodo immunoenzimatico che ha superato tutti questi limiti.

**Materiali e metodi:** La comparazione è stata effettuata con il metodo di riferimento (LC-MS/MS) e il nuovo metodo MagM (Magnum) su 100 campioni di sangue intero.

**Risultati:** L'analisi di regressione ha mostrato una correlazione molto alta tra i due metodi (R<sup>2</sup> = 0,99).



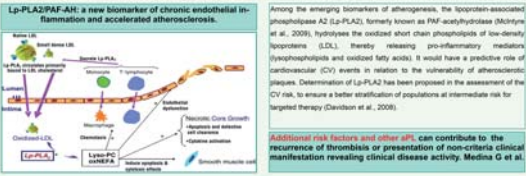
**Conclusioni:** Il nuovo metodo MagM (Magnum) ha mostrato una correlazione molto alta con il metodo di riferimento (LC-MS/MS).

## The plasmatic lipoprotein-associated phospholipase A2 concentration and activity are possible new markers for thrombotic risk in patients with anti-β2-glycoprotein I antibodies?

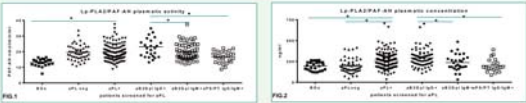
Martina Falini<sup>1</sup>, Adriana Cusi<sup>1</sup>, Cinzia Pallea<sup>1</sup>, Rossana Domenici<sup>1</sup>, Francesca Corvo<sup>1</sup>, Elio Truffi<sup>1</sup>  
<sup>1</sup>Institute of Clinical Pathology, University of Udine, Italy  
<sup>2</sup>Laboratory of Immune Pathology and Allergy, University Hospital of Udine, Italy

**INTRODUCTION:** Antiphospholipid syndrome (APS) is an autoimmune disorder affecting especially women, characterized by vascular thrombosis and obstetric complications linked to persistently elevated antiphospholipid antibodies (aPL), including anti-β2-glycoprotein I (aβ2GPI). In particular, aβ2GPI IgG antibodies specifically directed against the Cys1 domain (D1) seem to play a major role in APS pathogenesis. Recent studies demonstrated an association between cardiovascular risk and increased plasmatic levels of lipoprotein-associated phospholipase A2 (Lp-PLA2).

**Aim of the study:** The aim of the present study was to investigate Lp-PLA2 concentration and activity in patients presenting different aPL specificities.



**METHODS:** We enrolled 167 subjects (mean age 52±14 yrs) routinely screened for aβ2GPI IgG/IgM and aPS/PT IgG/IgM in a context of thrombotic events, risk of thrombosis or obstetric complication. Among them, 116 presented at least one aPL positivity, while 51 were all negative (aPLneg). Among aPL+, 28 presented aβ2GPI IgG+ (aβ2GPI+), 56 presented only anti-β2GPI IgM+ antibodies and 28 only aPS/PT IgM+ (aPS/PT+). 21 age-matched blood donors (BDs) played as controls. In addition, 46 patients with diagnosis of SLE or other connective tissue diseases (CTD) were included in the study to assess clinical correlation with APS syndrome. Lp-PLA2 plasmatic concentration was assessed by chemiluminescence immunoassay (Magnum, Shennan, China) while Lp-PLA2 plasmatic activity by enzymatic assay (Cayman Chemical Company, Ann Arbor, USA).



**RESULTS:** Fig. 1 and 2. Overall, aPL+ patients displayed significant higher Lp-PLA2 plasmatic activity and concentration compared to BDs (\*\*p<0.0001). aPL+ pts displayed higher Lp-PLA2 concentration than aPLneg (\*\*p<0.0001). aβ2GPI IgG+ presented higher Lp-PLA2 activity and concentration than aβ2GPI IgM+ patients (p=0.08 and p=0.02) and more than aPS/PT+ pts (p=0.003 and p=0.002). Of note, aPS/PT+ pts did not differ significantly from BDs (Fig. 2). When comparing aβ2GPI IgG D1 positive (D1+) versus D1 negative CTD patients, a trend was observed for increased Lp-PLA2 plasmatic concentration (337±164 ng/mL vs 226±89 ng/mL, respectively). Moreover, Lp-PLA2 plasmatic concentration tend to be higher in APS pts than in CTD pts without APS (p=0.055).

**CONCLUSIONS:** Both the plasmatic concentration and activity of Lp-PLA2 are upregulated in aβ2GPI IgG-positive patients, underlying the key role of these antibodies in APS pathogenesis and proposing Lp-PLA2 as a new possible thrombotic risk biomarker. Further studies are needed to confirm the increased plasmatic activity in APS patients and particularly in those carrying D1-specific aβ2GPI IgG antibodies.

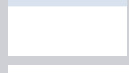
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**Introduzione:** Il tacrolimus (FK506) è un immunosoppressore della classe degli inibitori della calcineurina (CaN) che in costante aumento è usato terapeutico in campo di trapianti d'organo. Il metodo di riferimento per la determinazione del tacrolimus è la cromatografia liquida accoppiata alla spettrometria di massa (LC-MS/MS). I metodi immunoenzimatici (EIA) sono ancora molto utilizzati per la loro semplicità e per il basso costo. Tuttavia, presentano alcuni limiti: scarsa specificità, interferenze, scarsa sensibilità e scarsa precisione. Il nuovo metodo MagM (Magnum) è un metodo immunoenzimatico che ha superato tutti questi limiti.

**Materiali e metodi:** La comparazione è stata effettuata con il metodo di riferimento (LC-MS/MS) e il nuovo metodo MagM (Magnum) su 100 campioni di sangue intero.

**Risultati:** L'analisi di regressione ha mostrato una correlazione molto alta tra i due metodi (R<sup>2</sup> = 0,99).



**Conclusioni:** Il nuovo metodo MagM (Magnum) ha mostrato una correlazione molto alta con il metodo di riferimento (LC-MS/MS).

## Discussioni

Il nuovo metodo MagM (Magnum) ha mostrato una buona comparabilità con il metodo di riferimento (LC-MS/MS). Tuttavia, si è osservata una certa dispersione delle differenze medie. Sono soprattutto le concentrazioni di ciclosporina superiori a 200 ng/mL a mostrare la minore concordanza, facendo ipotizzare la necessità, per il metodo Magnum (Sobie, di diluizioni per concentrazioni elevate. La sovrastima che si riscontra rispetto al metodo attualmente in uso deve essere tenuta in considerazione per una corretta interpretazione dei risultati.

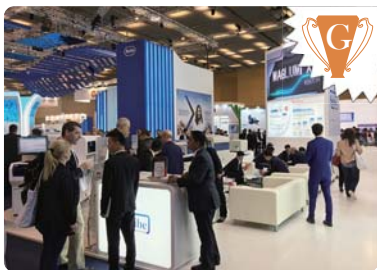
# Letter of Recommendation



## Mario Plebani

- Full Professor of Clinical Biochemistry and Clinical Molecular Biology
- Dean of School of Medicine University of Padova
- Director of Department of Laboratory Medicine University-Hospital of Padova
- Italy Editor in Chief of the Journal CCLM and Diagnosis (Dx), Italy

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# Publication

**Research Article**

### Evaluation of serum electrolytes in patients

Kavitha M M<sup>1</sup>, Sunita Pagar<sup>2</sup>, C S Heroniah<sup>3</sup>, Shankar Prasad<sup>4</sup>

**Abstract**

Introduction: Thyroid hormones influences the renal and parathyroid hormone levels for the maintaining electrolytes in salt and water balance. **Material and Methods:** The study was conducted in the North Karnataka. Blood sample were collected from all the participants. Participants were grouped into group 1 (euthyroid), group 2 (hypothyroid) and group 3 (hyperthyroid). The mean values of electrolytes were compared to establish. There is a negative correlation between thyroid hormone and electrolyte levels. **Conclusion:** The study indicates that thyroid hormones influences the electrolyte levels. **Keywords:** Electrolytes, Thyroid, Hypothyroidism.

**Address for Correspondence:** Dr. Kavitha M, Department of Biochemistry, S. Nijalingappa Medical College and Hospital, Bangalore, Karnataka, India. Email: kavitha@snmc.ac.in

**DOI: 14 August 2014**

Int'l J Med Res (2014), 13(5): 1539-1540

International Journal of Biological & Medical Research

**Research Article**

### Alteration in levels of Serum calcium, phosphorus and magnesium in p4 Hypothyroidism

Kavitha M M<sup>1</sup>, Sunita Pagar<sup>2</sup>, C S Heroniah<sup>3</sup>, Shankar Prasad<sup>4</sup>

**Abstract**

Introduction: Thyroid dysfunction contributes the most common endocrine disorder to the elderly. Hypothyroidism is the most common endocrine disorder in the elderly. **Material and Methods:** The study was conducted in the North Karnataka. Blood sample were collected from all the participants. Participants were grouped into group 1 (euthyroid), group 2 (hypothyroid) and group 3 (hyperthyroid). The mean values of electrolytes were compared to establish. There is a negative correlation between thyroid hormone and electrolyte levels. **Conclusion:** The study indicates that thyroid hormones influences the electrolyte levels. **Keywords:** Electrolytes, Thyroid, Hypothyroidism.

**Aquaculture Research & Development**

**Research Article**

### Stocking Densities and Chronic Zero Culture Water Exchange Stress' Effects on Biological Performances, Hematological and Serum Biochemical Indices of GIFT Tilapia Juveniles (*Oreochromis niloticus*)

Kishan P Kumbhar<sup>1</sup>, Pan Yu<sup>2</sup>, Hong Wang<sup>3</sup>, Jun-Guang and Jin Hu<sup>4</sup>

**Abstract**

Stocking densities and long term zero culture water exchange rate effects on biological performances, hematological and serum biochemical indices of Genetically Improved Farmed Tilapia (GIFT) were evaluated in terms of survival, growth and water quality. **Material and Methods:** The study was conducted in the North Karnataka. Blood sample were collected from all the participants. Participants were grouped into group 1 (euthyroid), group 2 (hypothyroid) and group 3 (hyperthyroid). The mean values of electrolytes were compared to establish. There is a negative correlation between thyroid hormone and electrolyte levels. **Conclusion:** The study indicates that thyroid hormones influences the electrolyte levels. **Keywords:** Electrolytes, Thyroid, Hypothyroidism.

**JOURNAL OF PHARMACY AND PHARMACEUTICAL SCIENCES**

**Research Article**

### ASSESSMENT OF THYROID FUNCTION IN MULTI-TRANSFUSED REN OF $\beta$ THALASSEMIA MAJOR WITH IRON OVERLOAD

Suman Singh Saini<sup>1</sup>, Dr. Aja Kumar Bhargava<sup>2</sup>, Dr. Prabhat S. Adhikari<sup>3</sup>

**Abstract**

Thyroid related iron overload is the primary therapeutic complication in thalassemia major iron deposition in various endocrine glands (including thyroid gland) is responsible for the hormonal dysfunction. **Material and Methods:** The study was conducted in the North Karnataka. Blood sample were collected from all the participants. Participants were grouped into group 1 (euthyroid), group 2 (hypothyroid) and group 3 (hyperthyroid). The mean values of electrolytes were compared to establish. There is a negative correlation between thyroid hormone and electrolyte levels. **Conclusion:** The study indicates that thyroid hormones influences the electrolyte levels. **Keywords:** Electrolytes, Thyroid, Hypothyroidism.

- ◆ Autoimmune diagnostics: the technology, the strategy and the clinical governance -- *Immunol Res*
- ◆ Alteration in levels of Serum calcium, phosphorus and magnesium in patients of Hypothyroidism -- *Int.J.Med.Res*
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- ◆ Stocking Densities and Chronic Zero Culture Water Exchange Stress' Effects on Biological Performances and Serum Biochemical Indices of GIFT Tilapia Juveniles (*Oreochromis niloticus*) -- *J Aquac Res Development*
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- ◆ Study of serum vitamin D, calcium in hypothyroidism- a case-control study -- *J Clin Sci Res*
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- ◆ Increased Prolactin Levels Are Associated with Impaired Processing Speed in Subjects with Early Psychosis -- *PLOS one*

**Intern**

**Cardio**

**Free thyroxine levels are associated with cognitive changes in individuals with a first episode of psychosis: A prospective 1-year follow-up study -- *Schizophrenia Research***

**N. Chandrika<sup>1</sup>, A. Roberto Spasiukas<sup>2</sup>, M. Marco B. Franco Lamas<sup>3</sup>, S. Stefano A. Roberto Spasiukas<sup>4</sup>, M. Marco B. Franco Lamas<sup>5</sup>**

<sup>1</sup>Department of Biochemistry, <sup>2</sup>Department of Biochemistry, <sup>3</sup>Department of Biochemistry, <sup>4</sup>Department of Biochemistry, <sup>5</sup>Department of Biochemistry

**Original Research Article**

**ABSTRACT**

**Aim:** The aim of our study was to determine the association between hypothyroidism and cognitive function in individuals with a first episode of psychosis.

**Study Design:** Case-control study.

**Place and Duration of Study:** Department of Biochemistry, Rajarajeswari Medical College, Bangalore, India, from February 2014 to July 2015.

**Methodology:** Forty-one individuals with a first episode of psychosis were recruited from a tertiary care hospital. All subjects underwent a comprehensive psychiatric, physical, and biochemical evaluation. Serum thyroxine (T4) and free thyroxine (FT4) levels were measured.

**Corresponding Author:** E-mail: dr.chandrika@gmail.com

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**Study of Insulin Resistance in Polycystic Ovarian Syndrome**

**Montey Naruka<sup>1\*</sup>, S. M. R. Usha<sup>2</sup>, B. M. Rupakala<sup>3</sup> and P. Vijaya Lakshmi<sup>4</sup>**

<sup>1</sup>Department of Biochemistry, Rajarajeswari Medical College and Hospital, Bangalore, India  
<sup>2</sup>Department of Gynecology and Obstetrics, Rajarajeswari Medical College and Hospital, Bangalore, India

**Authors' contributions**

This work was carried out in collaboration between all authors. Author SMRU designed the study, wrote the protocol and supervised the work. Author MN carried out all laboratory work and performed the statistical analysis. Authors MN, SMRU and BMR managed the analyses of the study. Author MN wrote the first draft of the manuscript. Authors MN and PVL managed the literature searches. Author SMRU edited the manuscript. All authors read and approved the final manuscript.

**Article Information**

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Published 07<sup>th</sup> September 2016

**Original Research Article**

**ABSTRACT**

**Aims:** To evaluate insulin resistance in patients with Polycystic ovarian syndrome (PCOS). To determine if HOMA & G/I can be used as a simple marker to identify PCOS patients at risk for IGT & Type II DM.

**Study Design:** This was a hospital based, cross sectional study.

**Place and Duration of Study:** The present study was carried out in the department of Biochemistry in collaboration with the Gynaecology & Obstetrics department, Rajarajeswari Medical College and Hospital, Bengaluru. It was done over a period of 6 months from February 2015 to July 2015.

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**International Journal of Biochemistry Research & Review**

**13(3)- 1-4, 2016. Article no. IJBCRR20005**

ISSN 2231-084X, NLM ID: 101854445

SCIENCE DOMAIN INTERNATIONAL  
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**Study of Insulin Resistance in Polycystic Ovarian Syndrome**

**Montey Naruka<sup>1\*</sup>, S. M. R. Usha<sup>2</sup>, B. M. Rupakala<sup>3</sup> and P. Vijaya Lakshmi<sup>4</sup>**

<sup>1</sup>Department of Biochemistry, Rajarajeswari Medical College and Hospital, Bangalore, India  
<sup>2</sup>Department of Gynecology and Obstetrics, Rajarajeswari Medical College and Hospital, Bangalore, India

**Authors' contributions**

This work was carried out in collaboration between all authors. Author SMRU designed the study, wrote the protocol and supervised the work. Author MN carried out all laboratory work and performed the statistical analysis. Authors MN, SMRU and BMR managed the analyses of the study. Author MN wrote the first draft of the manuscript. Authors MN and PVL managed the literature searches. Author SMRU edited the manuscript. All authors read and approved the final manuscript.

**Article Information**

DOI: 10.9734/IJBCRR201620005

(1) Y. H. Bin Hong, College of Medicine, Kaohsiung Medical University, Taiwan (E-mail: yhbh@kmu.edu.tw)  
(1) Savita Nani Singh, Institute of Medical sciences, Patna, Haryana, India  
(2) Parvati Devi Sharma, National Institute of Public Health, Tirunelveli  
(3) Nadeem Altaz, University of Health Sciences, Lahore, Pakistan  
Complete Peer Review History: <http://www.science-domain.org/open-peer-review-history/10596>

Received 28<sup>th</sup> June 2016  
Accepted 31<sup>st</sup> August 2016  
Published 07<sup>th</sup> September 2016

**Original Research Article**

**ABSTRACT**

**Aims:** To evaluate insulin resistance in patients with Polycystic ovarian syndrome (PCOS). To determine if HOMA & G/I can be used as a simple marker to identify PCOS patients at risk for IGT & Type II DM.

**Study Design:** This was a hospital based, cross sectional study.

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◆ Increased Frequency of Follicular Helper T Cells in Patients with Autoimmune Thyroid Disease -- *J Clin Endocrinol Metab*

◆ Establishment of a liver fibrosis model in cynomolgus monkeys -- *EXP TOXICOL PATHOL*

◆ Effect of spironolactone combined with angiotensin-converting enzyme inhibitors and/or angiotensin II receptor blockers on chronic glomerular disease -- *Exp. Ther. Med*

◆ Utility of Lipoprotein (a) as a Marker of Cardiovascular Disease Risk in Hypothyroid Patients -- *International Journal of Biochemistry Research & Review*

◆ Free thyroxine levels are associated with cognitive changes in individuals with a first episode of psychosis: A prospective 1-year follow-up study -- *Schizophrenia Research*

◆ Evaluation of predictive value of pleural CEA in patients with pleural effusions and histological findings: A prospective study and literature review -- *Clinical Biochemistry*

◆ Study of Insulin Resistance in Polycystic Ovarian Syndrome -- *International Journal of Biochemistry Research & Review*

◆ Bone turnover markers in women with early stage breast cancer who developed bone metastases. A prospective study with multivariate logistic regression analysis of accuracy -- *Clinica Chimica Acta*

◆ Establishment of a liver fibrosis model in cynomolgus monkeys -- *Experimental and Toxicologic Pathology*

◆ Interleukin 10 (-1082 G/A) and (-819 C/T) gene polymorphisms in Egyptian women with polycystic ovary syndrome (PCOS) -- *Meta Women*

# Publication



## JAMA

- ◆ Efficacy of folic acid therapy for the primary prevention of stroke
- ◆ Use of Prostate-Specific Antigen (PSA) Isoforms For The Detection of Prostate Cancer in Men With a PSA Level Of 3-10 ng/ml: A Zimbabwean Perspective -- *IJSR*
- ◆ The impacts of thyroid function on the diagnostic accuracy of Cystatin C to detect acute kidney injury in ICU patients: a prospective, observational study *Care* -- *Crit*
- ◆ T cell-derived leptin contributes to increased frequency of Th17 cells in female patients with Hashimoto's thyroiditis -- *Clin Exp Immunol*
- ◆ Simpler score of routine laboratory tests predicts liver fibrosis in patients with chronic hepatitis B -- *J. of Gastroenterology and Hepatology*
- ◆ Serum Carcinoembryonic Antigen (CEA), Carbohydrate Antigen (CA) 19-9, Cytokeratin-19 Fragment (CYFRA 21-1) and Matrix Metalloproteinase-7 (MMP-7) Measurement for Detecting Cholangiocarcinoma A Preliminary Case-control Study -- *European Society for Medical Oncology 37th Congress*
- ◆ Relationship between thyroid function and ICU mortality: a prospective observational study -- *Crit Care*
- ◆ measurement of Serum Carcinoembryonic Antigen, Carbohydrate Antigen 19-9, Cytokeratin-19 Fragment and Matrix Metalloproteinase-7 for Detecting Cholangiocarcinoma: A Preliminary Case-Control Study -- *Anticancer Research*
- ◆ Is vitamin D a player or not in the pathophysiology of autoimmune thyroid diseases? -- *Autoimmunity Reviews*



# Certificates



**Declaration of Conformity**

**Manufacturer:**  
Shenzhen New Industries Biomedical Engineering Co., Ltd.  
J 1 and 4 Floor Western Tech Bldg, Science & Industry Park, Minshan, Shenzhen, 518037 CHINA  
Tel. + 86 755 28651511 Fax. + 86 755 28651670

**European Representative:**  
Lotus Medical Ltd.  
11 Alexandra Road, London UK, N19 1QP  
Tel. + 44 20 70909123 Fax. + 44 20 70909127

**Notified Body:**  
TUV SUD Product Service GmbH  
Zertifizierungsstelle für Medizinische Geräte  
Identifikationsnummer: 0122

**Product Name:**  
Magnetic Chemiluminescence Immunoassay System (Maglumini kit) (parameters on the attachment)

**Classification (IVDD Annex II):** Other  
**Conformity Assessment Route:** Annex III

We herewith declare under sole responsibility that the above mentioned products meet the requirements under national law, the provisions of the following EC Council Directives and Standards. All supporting documentation are retained under the premises of the manufacturer.

**Conformity Assessment Route:** Annex III

**Standard applicable Directive:**  
Directive 90/269/EEC of the European Parliament and of the Council of 27 October 1990 on safety of workers (mechanical devices)

**Standard Applied:**  
EN ISO 13485:2003 EN ISO 13485:2012 EN ISO 15224:2012 EN ISO 18113:2011  
EN ISO 13485:2003 EN ISO 14971:2012 EN ISO 13485:2002 EN ISO 18113:2011  
EN ISO 13111:2003

**First Start of CE-MARKING:** May 1, 2010

**Signature:** Managing Director: Dr. Fan Wu  
Date, Date of Issue: Shenzhen, April 1, 2011

CE Instrument



**SHENZHEN HUANGJINGWAI INTERNATIONAL INSPECTION CO., LTD.**

**Declaration of Conformity**

**Certification number:** CTE1510044  
**Issue date:** Nov 22, 2010

In accordance with the following applicable Directives:

**EMC/EMC/CE**  
Electromagnetic Compatibility

The equipment, as described herewith, was tested pursuant to applicable test procedures and complies with the requirements of:

**EN 61326-1:2006**  
**EN 61326-2-2:2006**

The test results are favourable in the respect of national standards.

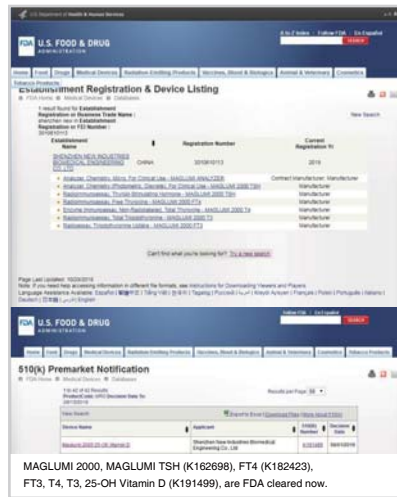
**Equipment under test:**  
Maglumini 2000 (preoperative model for sale)

**Model type reference / Lead model:**  
Maglumini 1000, Maglumini 2000 Plus

**Laboratory Name:**  
Shenzhen Huangjingwai International Inspection Co., Ltd  
Rd 1st floor No. 12 Road, Heping Park, Shenzhen, China  
Tel: 86-755-26146888 Fax: 86-755-26146889  
http://www.hjiw.com.cn E-mail: market@hjiw.com.cn

**Authorized by:**

Instrument EMC / Safety



**U.S. FOOD & DRUG ADMINISTRATION**

**510(k) Premarket Notification**

**ENVIRONMENTAL REGISTRATION & DEVICE LISTING**

**Product Name:** MAGLUMINI TSH (K162699), FT4 (K182423), FT3, FT4, T3, 25-OH Vitamin D (K191499), are FDA cleared now.

FDA 510(K) CLEARED



**EC Certificate**

**EC Design-Examination Certificate**  
Directive 90/269/EEC on the Safety of Workers (Mechanical Devices) (MDD), Annex IV (4) (List A)

**Manufacturer:** Shenzhen New Industries Biomedical Engineering Co., Ltd.  
No. 16, Jinhua Road, Pinghuang New District, Shenzhen, PEOPLE'S REPUBLIC OF CHINA

**EC-Representative:** Shenzhen International Trading Firm, Guangzhou Branch  
Changshou Rd. 20227 Hanning, GUANGDONG

**Product:** Screening test for Hepatitis C marker

**Report No.:** 71703020

**Valid from:** 2010-04-26  
**Valid until:** 2015-04-26

**Date:** 2010-04-26

**Signature:** I. Pinnat, Senior Product

**Page 1 of 2**  
TUV SUD Product Service GmbH is Notified Body with identification no. 0122  
TUV SUD Product Service GmbH - Zertifizierungsstelle für Medizinische Geräte - 80328 München - Germany

CE List A



**CERTIFICATE**

**Shenzhen New Industries Biomedical Engineering Co., Ltd.**  
No. 16, Jinhua Road, Pinghuang New District, Shenzhen, P.R. China  
Plant Code: 019122

**ISO 9001:2015**

**Report No.:** 704827446

**ISO 9001:2015**

**Report No.:** 704827446

**Valid from:** 2010-03-02  
**Valid until:** 2013-03-01

**Date:** 2010-03-02

**Signature:** I. Pinnat, Senior Product

**Page 1 of 2**  
TUV SUD Product Service GmbH - Zertifizierungsstelle für Medizinische Geräte - 80328 München - Germany

ISO 9001



**CERTIFICATE**

**No. GS 17 10 64998 015**

**Holder of Certificate:** Shenzhen New Industries Biomedical Engineering Co., Ltd.  
No. 16, Jinhua Road, Pinghuang New District, Shenzhen, PEOPLE'S REPUBLIC OF CHINA

**Certification Mark:**

**Scope of Certificate:** Design, Production, Distribution and Service of In-vitro Diagnostic Medical Device for Magnetic Chemiluminescence Immunoassay Kits and Matched Analyzers, Biochemical Reagents and Matched Analyzers

**Report No.:** 021710301

**Valid from:** 2010-03-02  
**Valid until:** 2013-12-31

**Date:** 2010-03-02

**Signature:** I. Pinnat, Senior Product

**Page 1 of 2**  
TUV SUD Product Service GmbH - Zertifizierungsstelle für Medizinische Geräte - 80328 München - Germany

ISO 13485



**医疗器械产品出口销售证明**  
**CERTIFICATE FOR EXPORTATION OF MEDICAL PRODUCTS**

**证书编号:** Y122812007

**产品名称:** 试剂盒  
**生产商:** 见附件

**产品注册证号:** 见附件  
**注册证号:** 见附件

**生产企业:** 深圳中产生物医学工程股份有限公司  
**Manufacturer:** Shenzhen New Industries Biomedical Engineering Co., Ltd.  
**Address of manufacturer:** No. 16, Jinhua Road, Pinghuang New District, Shenzhen, P.R. China

**生产企业质量管理体系:** 符合GB/T 19001-2008/ISO 9001:2008号  
**Manufacturer's Quality System:** conforms to GB/T 19001-2008/ISO 9001:2008

**证明出口产品符合中国出口管制法规。**  
**This is to certify that the above products have been registered to be manufactured and sold in China.**

**发证日期:** 2010年3月2日  
**Issue Date:** 2010/3/2

**有效期:** 2年  
**Valid Period:** 2 Years

**发证机构:** 深圳中产生物医学工程股份有限公司  
**Issue Authority:** Shenzhen New Industries Biomedical Engineering Co., Ltd.

**发证地点:** 深圳市福田区益田路16号  
**Issue Location:** 16, Jinhua Road, Pinghuang New District, Shenzhen, P.R. China

**发证日期:** 2010年3月2日  
**Issue Date:** 2010/3/2

**有效期:** 2年  
**Valid Period:** 2 Years

**发证机构:** 深圳中产生物医学工程股份有限公司  
**Issue Authority:** Shenzhen New Industries Biomedical Engineering Co., Ltd.

**发证地点:** 深圳市福田区益田路16号  
**Issue Location:** 16, Jinhua Road, Pinghuang New District, Shenzhen, P.R. China

FSC



**EC Certificate**

**Full Quality Assurance System**  
Directive 90/269/EEC on the Safety of Workers (Mechanical Devices) (MDD), Annex IV (excluding (4) (List A and B) devices (see full text))

**Manufacturer:** Shenzhen New Industries Biomedical Engineering Co., Ltd.  
No. 16, Jinhua Road, Pinghuang New District, Shenzhen, PEOPLE'S REPUBLIC OF CHINA

**EC-Representative:** Lotus Medical Equipment Limited  
238 Canton Street, Cork Street, Dublin 8, IRELAND

**Product Categories:** Products for determination of tumor markers (PSA) and infection markers

**Report No.:** 184627801

**Valid from:** 2010-03-02  
**Valid until:** 2013-03-01

**Date:** 2010-03-02

**Signature:** I. Pinnat, Senior Product

**Page 1 of 2**  
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TUV SUD Product Service GmbH - Zertifizierungsstelle für Medizinische Geräte - 80328 München - Germany

CE Reagent

# Top 10 Reasons Why Choose Snibe

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- » No.1 CLIA manufacturer in China
- » No.1 fast CLIA analyzer MAGLUMI X8
- » 1<sup>st</sup> in China who received FDA Cleared on CLIA product
- » 25 years focusing on immunoassay and IVD
- » Reliable and stable ISO quality management system
- » Over 12000 units of MAGLUMI installation in more than 145 countries and areas
- » Fast responding to market feedback and timely launching of new assays
- » Original manufacturer of core products including analyzers and reagents
- » Advanced magnetic microbeads separation and ABEI labeling technology
- » Quality guarantee by the third party quality control and External Quality Assessment (EQA)

