

## GENERAL CATALOGUE 2007

### ACTIVATED MEDIA FOR AFFINITY MEDIA FABRICATION

- Go MATRIX - NH - (CH<sub>2</sub>)<sub>5</sub> - COONHS with Sepharose™ fast flow
- Go MATRIX - NH - (CH<sub>2</sub>)<sub>5</sub> - COOH with Sepharose™ fast flow
- Go MATRIX - NH - (CH<sub>2</sub>)<sub>6</sub> - NH<sub>2</sub> with Sepharose™ fast flow
- Go Epoxy activated Media with Sepharose™ fast flow
- Go MATRIX-NH -(CH<sub>2</sub>)<sub>4</sub>- CHNH<sub>2</sub> - COOH with Sepharose™ fast flow
- Go MATRIX - CH<sub>2</sub> - CH<sub>2</sub> - SO<sub>2</sub> - CH = CH<sub>2</sub> with Sepharose™ fast flow

### New! PROTEOMIC RESEARCH New!

- Go Protein Phosphorylation Analysis
- Go Detection of Nitro-Tyrosine
- Go Specific Affinity Resins for Albumin et IgG Depletion

### IMMUNOAFFINITY CAPTURE

- Go Anti-hCGβ 109-145 peptide immunoaf. column
- Go Anti-eGH immunoaffinity column
- Go Anti-hGH immunoaffinity column
- Go Anti-human GRF immunoaffinity column
- Go Anti-IGF-1 (Rb IgG) immunoaffinity column
- Go Anti- IGF-1 (Mab IgG) immunoaffinity column **New!**
- Go Anti- IGF BP 3 immunoaffinity column
- Go Anti-EPO immunoaffinity column **New!**
- Go Anti-Clenbuterol immunoaffinity column
- Go Anti-Salbutamol immunoaffinity column
- Go Artificial oxygen carrier detection **New!**

### AFFINITY MEDIA

- Go Affinity media for IMAC - Generality
- Go Activated Protein A-Sepharose fast flow
- Go Activated Protein A like-Matrix
- Go p-Aminobenzamidine-Matrix
- Go Avidin (tetrameric), immobilized
- Go Avidin (monomeric), immobilized
- Go Biotin, immobilized
- Go IminoBiotin, immobilized
- Go Blue-Agarose
- Go Concentration resin<sup>R</sup> (proteins and/or DNA).
- Go Gelatin-Agarose
- Go Glutathione-Matrix
- Go Iminodiacetic acid-Matrix for IMAC
- Go Egg yolk IgY purification kit
- Go His-tagged protein purification kit - PDC kit<sup>R</sup>
- Go IgM, IgY immobilization kit **New!**
- Go IgG (human, mouse, rabbit) immobilization kit **New!**
- Go Sheep IgG purification kit
- Go Melibiose-Agarose
- Go PDC<sup>R</sup> (pentadentate chelator) & PDC kit<sup>R</sup>
- Go PMIB<sup>R</sup> for buffers, proteins...free of metal ions.
- Go Protein A-TSK™
- Go r-Protein A-Sepharose™ fast flow
- Go r-Protein A-Streamline™ Quartz Base Matrix
- Go Thiophilic gel (T-gel)

### AFFINITY PURIFIED PROTEINS & HORMONES

- Go Avidin
- Go HSA (human serum albumin)
- Go Fibronectin
- Go hα<sub>2</sub>-M (human α<sub>2</sub>-Macroglobulin)
- Go Myoglobin
- Go PMSG (pregnant mare serum gonadotropin)
- Go RBP (retinol binding protein)
- Go Ovalbumin
- Go Precipitating antibody, ready-to-use
- Go Antisera to steroids for RIA
- Go Antibodies (alphabetical list)
- Go IgY antibodies
- Go IgG, affinity purified
- Go r-Protein A & Activated r-Protein A
- Go HCG (human chorionic gonadotropin)
- Go HPL (human placental lactogen)
- Go HGH (human growth hormone)
- Go HFSH (human follicle stimulating hormone)
- Go HLH (human luteinizing hormone)
- Go HPRL (human prolactin)
- Go HTSH (human thyroid stimulating hormone)
- Go HCBG (human corticosteroid binding globulin)
- Go HSHBG (human sex hormone binding globulin)
- Go HTBG (human thyroxine binding globulin)

### HORSE PROTEINS

## CUSTOMER SERVICES

We welcome your questions & suggestions about

- Proteins, antibodies purification
- immunoaffinity media manufacture
- large scale affinity media manufacture

TSK™ is a registered trade mark of Toyosoda .

Sepharose™ & Streamline™ are registered trade marks of Amersham Biosciences .

PDC<sup>R</sup>, PDC kit<sup>R</sup>, PMIB<sup>R</sup> and -ω-N-Lysine<sup>R</sup>, concentration resin<sup>R</sup> are registered patented products of Affiland .

## **ORDERING AND COMMERCIAL CONDITIONS**

The products listed in our catalogue are sold for laboratory use only. They are not for use in humans.

### ORDERING PROCEDURE

All orders should be placed by purchase order, letter or telefax to:

**Affiland s.a.**  
304, rue de l'Yser  
B-4430 ANS-LIEGE (BELGIUM)  
Tel.: +32 - 4 - 366 33 94  
Fax: +32 - 4 - 246 15 06  
E-mail : [contact@affiland.com](mailto:contact@affiland.com)

Please include with the orders:

1. Product code + Product name + Quantity.
2. Purchase order number.
3. Delivery address.
4. Invoice address.
5. Your FedEx account number or another equivalent one if you have one.
6. Your VAT number for EURO ZONE countries.

### PRICES

All prices in this catalogue are FOB Liège and expressed in EUROS, excluding VAT 21%.

If you want to pay in USD, please let us know in advance. Many thanks.

Delivery in Belgium:

- Via Taxipost .
- Free of charge if orders > 250 EUR.
- 15 EUR if orders < 250 EUR.

### INSURANCE

Our products are sold FOB Liège at the risk of the buyer and it is for the purchaser to get insurance cover if required.

### TERMS OF PAYMENT

30 days net, from the invoice date. VISA and MasterCard (Credit Card) are accepted for payment.

### SHIPMENTS (VIA FEDEX INTL PRIORITY AND/OR TNT GLOBAL EXPRESS)

Our products generally are available from stock.

Delivery time: 0 - 7 days.

Shipment on dry ice: to be evaluated.

### CLAIMS

All claims regarding quality or quantity delivered must be filed within 10 days of receipt and will not be accepted afterwards.

Sart Tilman - Liège  
February 06, 2003

Dear customers,  
Dear colleagues,

**AFFILAND possesses a Know How in the conception and fabrication of affinity supports for the purification of proteins and peptides...**

The success of Affiland in the year 2002 was due to the use of the Sepharose™ Fast flow and Streamline™ Quartz Base Matrix as the starting materials in its affinity media range which now can be used in the research laboratories as well as in the industrial production.

Our affinity supports may be cleaned-up with no significant loss of binding capacity for greater than 40 cycles. This is available with our patented PDC-Matrix as well as with our T-Gel, IgY binding gel, Sheep IgG binding gel, Avidin-Matrix, Biotin and/or Iminobiotin-Matrix...

We would like to thank you for your faithful confidence in our range of products : the affinity media, the proteins, hormones purified by affinity methods, different antibodies, as well as different custom services you requested.

**IN THIS YEAR 2003, YOUR WORRIES OF LOSING PROTEINS OR DNA AFTER CONCENTRATION FROM DILUTE SOLUTION, USING MEMBRANE CONCENTRATION, WILL BE RESOLVED WITH OUR**

**PATENTED CONCENTRATION RESIN.  
YOU WILL NOT BE DISAPPOINTED ONCE YOU USE IT.**

Hoping this information is interesting for you, we look forward to hearing from you soon.

Yours truly,

**Tran Quang Minh, PhD**  
Managing director

HOME PAGE :

**AFFILAND possesses a Know How in the conception and fabrication of affinity supports for the purification of proteins and peptides...**

<http://www.affiland.com/aboutus.htm>

In particular,

1)

- Affiland is the owner of the patents on **PDC<sup>®</sup>** supports (**p**entadentate **c**helator) for HIS-TAGGED PROTEIN PURIFICATION.
- Our patented **PDC kit<sup>®</sup>** composed of **4 PDC<sup>®</sup>** supports chelated successively with  $\text{Cu}^{2+}$ ,  $\text{Zn}^{2+}$ ,  $\text{Ni}^{2+}$  and  $\text{Co}^{2+}$  ions, has been known as a unique sure guide for the selection of the most appropriate metal chelate resin in a PRIMARY SCREENING OF HIS-TAGGED PROTEIN PURIFICATION.

<http://www.affiland.com/imac/pdc6x.htm>

- 2) Our patented **Concentration resin** is capable of **greatly reducing the volume of dilute protein and/or DNA solutions without the loss of the protein and/or the DNA of interest.**

<http://www.affiland.com/imac/protdnaconcentresin.htm>

- 3) Our **IgY purification kit**, easy and ready-to-use is THE ONLY TOOL which does not use any ORGANIC SOLVENTS which are dangerous to health.

<http://www.affiland.com/affinity/eggysolk.htm>

...

In general, our activities are composed of 3 parts:

- 1. Production & commercialization of Affinity Media, Immunoaffinity capture and Activated resins.**
- 2. Production & commercialization of purified proteins.**
- 3. Customer services for**
  - **protein, antibody purifications.**
  - **immunoaffinity media manufacture.**
  - **large scale affinity media manufacture.**

<http://www.affiland.com/catal.html>

Many thanks for your time.

Dr. Do Thi Hong Phuong

President

Affiland s.a.

## ABOUT US : 1/3

Liège, January 05, 1999  
January 30, 2001

AFFILAND was founded in December 1988 and has now more than ten years of experience in the conception and in the fabrication of affinity supports used for the purification of natural and recombinant proteins and peptides.

The principal affinity supports developed and manufactured by AFFILAND are:

- **The Thiophilic gel (T-Gel)** which is capable of purifying, in a single step, the immunoglobulins from all animal species (IgG, IgA, IgM..., IgY), directly from serum or egg yolk to a purity of 80-98% (w/w). Its capacity for immunoglobulins is high. The elution step is performed using mild conditions: the monoclonal IgG purified by our T-gel and coated onto tubes or microwells reveals negligible non-specific binding in immunoradiometric assays (IRMA).
- **The egg yolk IgY purification kit, using IgY binding gel**, permits purification of the IgY directly from the egg yolk, in a single step, with a recovery of approx. 100% and a purity >98%.
- **The sheep IgG purification kit, using Sheep IgG binding gel**, permits purification of the sheep IgG directly from the serum, in a single step, with a recovery of approx. 100% and a purity >98%.
- **The Activated Protein A like-Agarose (APAL)** which is capable of forming stable complexes between APAL and the F<sub>C</sub> portion of IgG from all animal species. This is followed by a covalent linkage between APAL and Fc, **leaving free the Fab of IgG. The biological activity of the immobilized IgG is therefore conserved.**
- **The patented Pentadentate chelator-Agarose (PDC) and its PDC KIT**. This constitutes a new concept in the purification of proteins and peptides fused with a 6x His tag or histidine containing proteins or peptides. It can also be used for first attempts at general purification of proteins or peptides. The number of potential applications for this gel is large.
- **The patented PMIB (polyvalent metal ion binding resin)** which is capable of generating water, buffers and proteins completely free of polyvalent metal ions.

**AFFILAND possesses a "Know How" in the conception and fabrication of affinity supports for the purification of proteins and peptides.**

- The quasi-totality of proteins or hormones in the AFFILAND GENERAL CATALOGUE (68 pages) are purified directly by affinity chromatography, from crude materials such as sera, hen eggs, milk, pituitary gland extract:
  - Thyroxine binding globulin, TBG highly and/or partially purified;
  - Corticosteroid binding globulin or Transcortin, CBG highly and/or partially purified;
  - Sex hormone binding globulin, SHBG highly and/or partially purified;
  - IgY antibodies, normal and specific, highly purified;
  - The pituitary hormones (Growth hormone GH, Follicle stimulating hormone FSH, Luteinizing hormone LH, Thyroid stimulating hormone TSH, Prolactin PRL) highly and/or partially purified;

Our highly purified proteins and/or hormones can be easily labeled with I-125 or enzymes used as tracers in diagnostic kits. The partially purified ones can be easily used for making standard curves in diagnostic kits.

- Affiland also supplies the antibodies raised in mammalian animal species and in birds.
- We can also supply customer service for the purification of proteins and peptides from any sources.

Yours truly,

Dr. Tran Quang Minh  
Managing director  
Affiland s.a.

## ABOUT US : 2/3

Sart Tilman, 3rd January 2002  
Dear Sir/Madam,

Happy new year to you. Many thanks to you for your confidence in Affiland products : affinity media as well as proteins and hormones (antigens, antibodies) and its customer service.

In response to customers' needs, we have developed for the year 2002 the following new products:

**1) Regarding AFFINITY MEDIA:** Our Affinity Media was originally developed with **Sepharose™ CL-4B** as support, they now are also available on **Sepharose™ 4 Fast Flow** and **Streamline™ Quartz Base Matrix** as supports. Their binding capacity is high in comparison to that of **Sepharose™ CL-4B**.

Note that

- the **Sepharose™ 4 Fast Flow** support can be used in HPLC chromatography.
- and the **Streamline™ Quartz Base Matrix** support can be easily decanted after a short time. They can easily be used in batch mode without a centrifuge being necessary.  
The bead size of the matrix is 100-300 µm. Therefore the flow rate is very high at normal pressure. You can also apply a higher pressure if necessary.

®: registered trade mark of Amersham Pharmacia Biotech. These matrices are those used as starting materials for the preparation of our affinity media.

You will find also our

### **SAMPLE CLEAN UP** **AND** **IMMUNOAFFINITY CAPTURE**

Prior to mass spectrometry  
and/or  
2D gel electrophoresis

**2) Regarding PROTEINS AND HORMONES**, please discover our **HORSE PROTEINS** comprising antigens and antibodies.

**3) Regarding CUSTOMER SERVICE**, we welcome your questions and suggestions about protein purification or large scale affinity media manufacture.

Yours truly,

Dr . Tran Quang Minh  
Managing director  
Affiland s.a.

## **ABOUT US : 3/3**

Sart Tilman - Liège  
February 06, 2003

Dear customers, dear colleagues,

### **AFFILAND possesses a Know How in the conception and fabrication of affinity supports for the purification of proteins and peptides...**

The success of Affiland in the year 2002 was due to the use of the Sepharose™ Fast flow and Streamline™ Quartz Base Matrix as the starting materials in its affinity media range which now can be used in the research laboratories as well as in the industrial production.

**Our fast flow affinity supports may be cleaned-up with no significant loss of binding capacity for greater than 40 cycles. This is available with our patented PDC-Matrix as well as with our T-Gel, IgY binding gel, Sheep IgG binding gel, Avidin-Matrix, Biotin and/or Iminobiotin-Matrix...**

We would like to thank you for your faithful confidence in our range of products : the affinity media, the proteins, hormones purified by affinity methods, different antibodies, as well as different custom services you requested.

IN THIS YEAR 2003, YOUR WORRIES OF LOSING PROTEINS OR DNA AFTER CONCENTRATION FROM DILUTE SOLUTION, USING MEMBRANE CONCENTRATION, WILL BE RESOLVED WITH OUR

### **PATENTED CONCENTRATION RESIN YOU WILL NOT BE DISAPPOINTED ONCE YOU USE IT**

Hoping this information is interesting for you, we look forward to hearing from you soon.

Yours truly,

Tran Quang Minh, PhD  
Managing director  
Affiland s.a.

## Activated MEDIA

for

### AFFINITY MEDIA FABRICATION

---

**Go Matrix - Terminal NHS carboxylate, ready and easy-to-use**

for [direct coupling](#) with  $-NH_2$  containing compounds .

**Go Matrix - Terminal carboxylic acid**

for coupling with  $-NH_2$  containing compounds .

**Go Matrix - Terminal primary amine**

for coupling with  $-COOH$  containing compounds .

**Go Matrix - Terminal epoxy**

for coupling with  $-NH_2$ ,  $-SH$ ,  $-OH$  containing compounds .

**Go Matrix -  $\omega$  - aminolysine<sup>R</sup> (<sup>R</sup> : registered patented product of Affiland)**

for coupling with  $-NH_2$  and/or  $-COOH$  containing compounds .

**Go MATRIX -  $CH_2 - CH_2 - SO_2 - CH = CH_2$**

for coupling with  $-NH_2$ ,  $-SH$ ,  $-OH$  containing compounds .



**1. Matrix - Terminal NHS carboxylate,**  
**MATRIX – NH – (CH<sub>2</sub>)<sub>5</sub> – COONHS**  
 (-COONHS : N-hydroxysuccinimidyl carboxylate)  
 for direct coupling with  
 –NH<sub>2</sub> containing compounds .  
 ready and easy-to-use

Product code : NHS-4FF

Characteristics	Package	* Price in EUR
<b>Matrix :</b> Sepharose™ 4 fast flow (high cross-linked 4% agarose spherical) . Bead size range : 45-165 µm . <b>Spacer arm :</b> 12 atoms . <b>NHS carboxylate concentration :</b> Approx. 15 µmol per ml of wet resin. <b>Exclusion limit :</b> 2 × 10 <sup>7</sup> daltons . <b>Maximum pressure :</b> 3 bars (43 psi, 0.3 MPa) .  <b>Storage :</b> in pure isopropanol.	<b>1 ml resin column</b> 5 ea 10 ea	110.00 210.00
	<b>5 ml resin column</b> 1 ea 5 ea	105.00 510.00
	<b>NHS carboxylate - resin</b> 10 ml 25 ml	150.00 300.00
	Bulk quantities are available Please inquire	
	<b>2007 – 2008</b>	
<b>Coupling conditions :</b> with –NH <sub>2</sub> group at pH 6.8 – 9.0. Organic solvents can be used.		

## 2. Matrix - Terminal carboxylic acid :

MATRIX – NH – (CH<sub>2</sub>)<sub>5</sub> – COOH

(6-Aminocaproic acid-Matrix)

for coupling with  
–NH<sub>2</sub> containing compounds

Product code : ACA-4FF

Characteristics	Package	* Price in EUR
<b>Matrix :</b> Sepharose™4 fast flow (high cross-linked 4% agarose spherical) . <b>Spacer arm :</b> 12 atoms . <b>Carboxylic concentration :</b> Approx. 15 µmol per ml of wet gel . <b>Bead size range :</b> 45-165 µm . <b>Exclusion limit :</b> 2 × 10 <sup>7</sup> daltons . <b>Maximum pressure :</b> 3 bars (43 psi, 0.3 MPa) . <b>Storage :</b> Suspension in NaCl 0.5M; NaN <sub>3</sub> 0.1%(w/v) at 4°C.	50 ml 100 ml 500 ml  <b>Bulk quantities are available</b>	270.00 500.00 2000.00  <b>Please inquire</b>
<b>Coupling conditions :</b> with –NH <sub>2</sub> group in the presence of carbodiimide at pH 4.7 – 7.0. Organic solvents can be used.	2007 – 2008	

3. Matrix - **Terminal primary amine** :  
 MATRIX – NH – (CH<sub>2</sub>)<sub>6</sub> – NH<sub>2</sub>  
 (1,6-diaminohexane – Matrix)  
 for coupling with  
 –COOH containing compounds

Product code : **DAH-4FF**

Characteristics	Package	* Price in EUR
<b>Matrix</b> : Sepharose™ 4 fast flow (high cross-linked 4% agarose spherical) . <b>Spacer arm</b> : 11 atoms . <b>Primary amine concentration</b> : Approx. 15 µmol per ml of wet gel . <b>Bead size range</b> : 45-165 µm . <b>Exclusion limit</b> : 2 × 10 <sup>7</sup> daltons . <b>Maximum pressure</b> : 3 bars (43 psi, 0.3 MPa) . <b>Storage</b> : Suspension in NaCl 0.5M; NaN <sub>3</sub> 0.1%(w/v) at 4°C.  <b>Coupling conditions</b> : with –COOH group in the presence of carbodiimide at pH 4.7 – 7.0. Organic solvents can be used.	50 ml 100 ml 500 ml	270.00 500.00 2000.00
	<b>Bulk quantities are available</b>	<b>Please inquire</b>
<b>2007 – 2008</b>		

#### 4. Matrix - Terminal Epoxy activated Media

for coupling with  
-NH<sub>2</sub>, -SH or -OH containing compounds

Product code : EPY-4FF

Characteristics	Package	* Price in EUR
<b>Matrix :</b> Sepharose™4 fast flow (high cross-linked 4% agarose spherical) . <b>Spacer arm :</b> 7 atoms . <b>Epoxide concentration :</b> Approx. 30 µmol per ml of wet gel . <b>Bead size range :</b> 45-165 µm . <b>Exclusion limit :</b> 2 × 10 <sup>7</sup> daltons . <b>Maximum pressure :</b> 3 bars (43 psi, 0.3 MPa) . <b>Storage :</b> Suspension in NaCl 0.5M; NaN <sub>3</sub> 0.1%(w/v) at 4°C.  <b>Coupling conditions :</b> with -NH <sub>2</sub> , -SH or -OH group at pH 9.0-14.0. Organic solvents can be used.	50 ml 100 ml 500 ml  Bulk quantities are available	270.00 500.00 2000.00  Please inquire
	<b>2007 – 2008</b>	

5. Matrix -  $\omega$ -Aminolysine<sup>R</sup>  
 MATRIX – NH – (CH<sub>2</sub>)<sub>4</sub> – CHNH<sub>2</sub> – COOH  
 for coupling with  
 reactive halogen,  
 and/or –NH<sub>2</sub> and/or –COOH  
 containing compounds

Product code :  $\omega$ -AL-4FF

<sup>R</sup> : registered patented product of Affiland

Characteristics	Package	* Price in EUR
<b>Matrix :</b> Sepharose™4 fast flow (high cross-linked 4% agarose spherical) . <b>Spacer arm :</b> 7 atoms . <b><math>\omega</math>-Aminolysine concentration :</b> Approx. 45 $\mu$ mol per ml of wet gel . <b>Bead size range :</b> 45-165 $\mu$ m . <b>Exclusion limit :</b> 2 $\times$ 10 <sup>7</sup> daltons . <b>Maximum pressure :</b> 3 bars (43 psi, 0.3 MPa) . <b>Storage :</b> Suspension in EtOH 20% at 4°C-25°C.	25 ml	200.00
	100 ml	800.00
	500 ml	3000.00
<b>Coupling conditions :</b> with reactive halogen, –NH <sub>2</sub> , or –COOH containing compounds. Organic solvents can be used.	Bulk quantities are available	Please inquire
	<b>2007 – 2008</b>	

#### 4. Matrix - Terminal Vinylsulfone activated Media

MATRIX - CH<sub>2</sub> - CH<sub>2</sub> - SO<sub>2</sub> - CH = CH<sub>2</sub>

for coupling with  
-NH<sub>2</sub>, -SH or -OH containing compounds

Product code: **DVS-4FF**

Characteristics	Package	* Price in EUR
<b>Matrix: Sepharose™ 4 Fast Flow</b> <b>Spacer arm: 10 atoms.</b> <b>Vinylsulfone concentration : Approx. 30 µmol per ml of wet resin.</b> <b>Bead size range : 45-165 µm .</b> <b>Exclusion limit : 2 × 10<sup>7</sup> daltons .</b> <b>Maximum pressure : 3 bars (43 psi, 0.3 MPa) .</b> <b>Storage : Suspension in NaCl 0.5M; NaN<sub>3</sub> 0.1%(w/v) at 4°C.</b>	50 ml	270.00
	100 ml	500.00
	500 ml	2000.00
<b>Coupling conditions :</b> with -NH <sub>2</sub> , -SH or -OH group at pH .0-14.0. Organic solvents can be used.	Bulk quantities are available	Please inquire
	<b>2007 – 2008</b>	

## AFFILAND TECHNOLOGY

for

## PROTEOMICS RESEARCH

The term PROTEOMICS was first created by Wilkins in 1994 as the protein complements of the genome.

Proteomics concern the analysis of all proteins involved in complex intracellular pathways, organelles, cells, tissues, organs and organisms that can be studied to discover new biological processes or to collect data about the biological system.

The task requires different techniques such as protein identification, characterisation, quantification and protein interactions. It is challenging since transcriptional and post translational modification of proteins are numerous in a determined cell type.

---

 **Protein Phosphorylation Analysis**

 **Detection of Nitro Tyrosine**

 **Specific Affinity Resins for Albumin and Immunoglobulin depletion**

## PROTEIN PHOSPHORYLATION ANALYSIS

The human genome encoded 518 protein kinases and 65 protein phosphatases which control reversible phosphorylation of proteins.

However, only about 0.05% of protein phosphorylation occurs on Tyrosyl residues in mammals. Thus profiling Tyrosyl phosphorylation appears very challenging without enrichment of phosphoproteins or phosphopeptides.

Immunoprecipitation, immobilized metal affinity chromatography, methylation of peptides, nanoflow reversed phase were combined with mass spectroscopy to detect theses modified peptides in the mixture.

Affiland has developed two ways for enrichment of the phosphopeptides.

**Enrichment of phosphotyrosine containing proteins**  
**by**  
**Rb IgG anti-phosphotyrosine**  
**Immunoaffinity Column**

**Matrix:** [Sephacrose™ 4 Fast Flow](#).

**Spacer arm:** 12 atoms.

**Ligand:** Rabbit IgG anti-phosphotyrosine.

**Attachment:** at Fc portion of IgG.

**Immobilized ligand:** 10,000 µg of Rb IgG per ml of resin.

**Affinity resin volume:** 400 µl wet resin.

**Specificity:** determined by RIA - 4 µg of phosphotyrosine containing proteins per 400 µl of resin column.

**Storage:** 4°C, suspension in PBS buffer, pH 7.4, in the presence of NaN<sub>3</sub> 0.1% (w/v).

### ORDERING INFORMATION

Product code	Product name	Quantity	*Price in EUR
Rb IgG-PhosT-c	Rabbit IgG anti-phosphotyrosine column	1 ea	365.00
		5 ea	1734.00
		> 10 ea	Please inquire
Rb IgG-PhosT-a	Rabbit IgG anti-phosphotyrosine antibody	1000 µg	149.00

\* All prices are FOB Liège.

Bulk quantities are available.

Shipment at room temperature



**Enrichment of phosphotyrosine containing proteins**  
**by**  
**Metal chelate Affinity Chromatography,**  
**our powerful patented Pentadentate chelator**

**Matrix:** [Sephacrose™ 4 Fast Flow](#)

**Spacer arm:** 12 atoms.

**Ligand:** Pentadentate chelator<sup>R</sup>.

**PDC resin volume:** 400 µl wet resin.

**For details, please see** <http://www.affiland.com/imac/pdc.htm>

**Storage:** 4°C, suspension in PBS buffer, pH 7.4, in the presence of NaN<sub>3</sub> 0.1% (w/v).

<sup>R</sup> : patented Affiland product.

**ORDERING INFORMATION**

Product code	Product name	Quantity	*Price in EUR
<b>Fe-PDC-6FF-C</b> and/or <b>Gn-PDC-4FF-C</b>	<b>Fe(III) Pentadentate chelator-Sepharose 4 fast flow column</b>	5 ea	174.00
		10 ea	300.00
	<b>Gn(III) Pentadentate chelator-Sepharose 4 fast flow column</b>	> 10 ea	Please inquire

\* All prices are FOB Liège.

Bulk quantities are available.

Shipment at room temperature

 **Detection of Nitro Tyrosine**

 **Specific Affinity Resins for Albumin and Immunoglobulin depletion**

## NITRO-TYROSINE DETECTION

Nitration of tyrosine residues occurs in various cell types and depends mainly, in vivo or in vitro, on the formation of peroxynitrite from singlet oxygen and nitric oxide.

Nitration of tyrosine residues in proteins could interfere with many transduction pathways since nitration of tyrosine residues prevents phosphorylation of this amino-acid and therefore its recognition by specific motifs.

Nitration is so one of causes of physiological process like inflammation, immune response and atherosclerosis.

**Rb IgG anti-nitrotyrosine containing peptides**  
**Immunoaffinity Column**  
**Application: interesting for the screening of**  
**nitrotyrosine containing peptides.**

**Matrix:** [Sephacrose™ 4 Fast Flow](#).

**Spacer arm:** 12 atoms.

**Ligand:** Rabbit IgG anti-nitrotyrosine containing peptides.

**Attachment:** at Fc portion of IgG.

**Immobilized ligand:** 10,000 µg of Rb IgG per ml of resin.

**Affinity resin volume:** 400 µl wet resin.

**Specificity:** determined by RIA - 4 µg of phosphotyrosine containing proteins per 400 µl of resin column.

**Storage:** 4°C, suspension in PBS buffer, pH 7.4, in the presence of NaN<sub>3</sub> 0.1% (w/v).

### ORDERING INFORMATION

Product code	Product name	Quantity	*Price in EUR
Rb IgG-NT-c	Rabbit IgG anti-nitrotyrosine containing peptides column	1 ea	365.00
		5 ea	1734.00
		> 10 ea	Please inquire
Rb IgG-NT-a	Rabbit IgG anti-nitrotyrosine containing peptides antibody	1000 µg	149.00

\* All prices are FOB Liège.

Bulk quantities are available.

Shipment at room temperature

---

 **Protein Phosphorylation Analysis**  
 **Specific Affinity Resins for Albumin and Immunoglobulin depletion**

---

## SPECIFIC AFFINITY RESINS FOR ALBUMIN & IgG DEPLETION FROM DIFFERENT ANIMAL SPECIES

The human and animal proteomes are area of large scientific interest for identifying disease biomarkers. Their proteomic approach is challenging because most of proteins of interest to be diagnosed are present at very low concentration in specialized cell types and biological fluids. Serum albumin and immunoglobulin G represent respectively approx. 60% and 15% (w/w) of total serum proteins. These proteins complicate the electrophoretic patterns obtained for cellular protein extracts and/or biological fluids.

**Affiland has developed double immunoaffinity columns for depleting BOTH serum albumin & immunoglobulin G from cellular extracts of different animal species.**

### Albumin & IgG binding Matrix COLUMN New!

**Matrix:** [Sephacrose™ 4 Fast Flow](#).

**Spacer arm:** 12 atoms.

**Ligand:** Monospecific to BOTH albumin and IgG from different animal species.

**Attachment:** at Fc portion of IgG.

**Immobilized ligand:** 1,000 µg of Monospecific Rb IgG per ml of resin.

**Affinity resin volume:** 1 ml of wet resin/column.

**Specificity :**

**Binding capacity in albumin** = 1 mg for all animal species ;

**Binding capacity in IgG** > 1 mg for human, mouse, rabbit... and approx. 0.5 mg for bovine, sheep, horse...

**Storage:** 4°C, suspension in PBS buffer, pH 7.4, in the presence of NaN<sub>3</sub> 0.1% (w/v).

### ORDERING INFORMATION

Product code	Product name	Quantity	*Price in EUR
h-Anti-SA & IgG-c	Anti-human serum albumin and human IgG column	1 ea/each	1350.00
		5 ea/each	5400.00
b-Anti-SA & IgG-c	Anti-bovine serum albumin and bovine IgG column	> 10 ea	Please inquire
m-Anti-SA & IgG-c	Anti-mouse serum albumin and mouse IgG column		
r-Anti-SA & IgG-c	Anti-rat serum albumin and rat IgG column		

\* All prices are FOB Liège.

Bulk quantities are available.

Shipment at room temperature

**Go Protein Phosphorylation Analysis**  
**Go Detection of Nitro Tyrosine**

## **SAMPLE CLEAN UP AND IMMUNOAFFINITY CAPTURE**












**Prior to mass spectrometry  
and/or  
2D gel electrophoresis**

**AFFILAND IMMUNOAFFINITY COLUMNS** are intended for the pre-purification of biological fluids which are to be screened by 2D gel electrophoresis and/or mass spectrometry.

**AFFILAND IMMUNOAFFINITY COLUMNS** can be used for the detection of biomolecules used for steroid treatment of meat producing animals or molecules used for doping sporting animals and human athletes.

**ALL THE SPECIFIC ANTIBODIES USED TO CAPTURE THE ANTIGEN, CAN ALSO BE OBTAINED FROM AFFILAND**, in a non-immobilized form. These antibodies can also be used in other immuno-separation techniques such as immuno-filtration...

### **Immunoaffinity columns :**

-  **Anti-hCG $\beta$  109-145 peptide immunoaffinity column**
-  **Anti-bovine growth hormone immunoaffinity column**
-  **Anti-equine growth hormone immunoaffinity column**
-  **Anti-human growth hormone immunoaffinity column**
-  **Anti-human growth hormone releasing factor immunoaffinity column**
-  **Anti-IGF-1 immunoaffinity column, polyclonal antibody .**
-  **Anti-IGF binding protein 3 immunoaffinity column**
-  **Anti-EPO immunoaffinity column**
-  **Anti-Clenbuterol immunoaffinity column**
-  **Anti-Salbutamol immunoaffinity column**
-  **Artificial oxygen carrier detection column**

**Rb IgG anti-hCG $\beta$  109-145 Peptide**  
**Immunoaffinity Column**  
**Application: interesting for the specific detection**  
**of hCG in biological fluids and for the purification of hCG $\beta$  subunit**  
**from urinary menopausal gonadotropin extract.**

## CHARACTERISTICS

**Matrix :** Sepharose™4 fast flow

(high cross-linked 4% agarose spherical) .

Spacer arm : 12 atoms .

Bead size range : 45-165  $\mu$ m .

Exclusion limit :  $2 \times 10^7$  daltons .

Maximum pressure : 3 bars (43 psi, 0.3 MPa) .

**Ligand :** Rabbit IgG anti-human CG $\beta$  109-145 peptide.

**Attachment :** at Fc portion of IgG.

**Immobilized ligand :** 10,000  $\mu$ g of Rb IgG per ml of resin.

**Immunoaffinity resin volume :** 400  $\mu$ l wet resin.












**Specificity :** hCG $\beta$  and hCG - Binding capacity determined by RIA : approx. 8  $\mu$ g of hCG per 400  $\mu$ l of resin column.

**Storage :** 4°C, suspension in PBS buffer, pH 7.4, in the presence of NaN<sub>3</sub> 0.1% (w/v).

## ORDERING INFORMATION

Product code	Product name	Quantity	*Price in EUR
RbIgG-hCG $\beta$ 109-145- <b>c</b>	Rabbit IgG anti-human CG $\beta$ 109-145 <b>column</b>	1 ea 5 ea > 10 ea	365.00 1734.00 Please inquire
Rb IgG-hCG $\beta$ 109-145- <b>a</b>	Rabbit IgG Anti-human CG $\beta$ 109-145 <b>antibody</b>	250 $\mu$ g	149.00
*All prices are FOB Liège Bulk quantities are available Delivery in Belgium : franco if orders > 250 EUR. <b>Shipment at room temperature</b>			<b>2007 - 2008</b>

## OTHER IMMUNOAFFINITY COLUMNS :

-  Anti-bovine growth hormone immunoaffinity column
-  Anti-equine growth hormone immunoaffinity column
-  Anti-human growth hormone immunoaffinity column
-  Anti-human growth hormone releasing factor immunoaffinity column
-  Anti-IGF-1 immunoaffinity column, polyclonal antibody .
-  Anti-IGF-1 immunoaffinity column, monoclonal antibody .
-  Anti-IGF binding protein 3 immunoaffinity column
-  Anti-EPO immunoaffinity column
-  Anti-Clenbuterol immunoaffinity column
-  Anti-Salbutamol immunoaffinity column
-  Artificial oxygen carrier detection column

## Rb IgG anti-Bovine Growth Hormone Immunoaffinity Column

**Application: interesting for the screening of GH treated bovines.**

### CHARACTERISTICS

**Matrix :** Sepharose™4 fast flow

(high cross-linked 4% agarose spherical) .

Spacer arm : 12 atoms .

Bead size range : 45-165 µm .

Exclusion limit :  $2 \times 10^7$  daltons .

Maximum pressure : 3 bars (43 psi, 0.3 MPa) .

**Ligand :** Rabbit IgG anti-bovine growth hormone .

**Attachment :** at Fc portion of IgG.

**Immobilized ligand :** 10,000 µg of Rb IgG per ml of resin.

**Immunoaffinity:** 400 µl wet resin.












**Specificity :** bGH treated bovines – Binding capacity determined by RIA : approx. 6 µg eGH per 400 µl of resin column.

**Storage :** 4°C, suspension in PBS buffer, pH 7.4, in the presence of NaN<sub>3</sub> 0.1% (w/v).

### ORDERING INFORMATION

Product code	Product name	Quantity	*Price in EUR
Rb IgG-bGH-c	Rabbit IgG anti-bGH column	1 ea 5 ea > 10 ea	365.00 1734.00 Please inquire
Rb IgG-bGH-a	Rabbit IgG anti-bovine growth hormone antibody	250 µg	149.00
*All prices are FOB Liège Bulk quantities are available Delivery in Belgium : franco if orders > 247.89 EUR. <b>Shipment at room temperature</b>		2007 - 2008	

### OTHER IMMUNOAFFINITY COLUMNS :

-  Anti-hCGβ 109-145 peptide immunoaffinity column
-  Anti-equine growth hormone immunoaffinity column
-  Anti-human growth hormone immunoaffinity column
-  Anti-human growth hormone releasing factor immunoaffinity column
-  Anti-IGF-1 immunoaffinity column, polyclonal antibody
-  Anti-IGF-1 immunoaffinity column, monoclonal antibody
-  Anti-IGF binding protein 3 immunoaffinity column
-  Anti-EPO immunoaffinity column
-  Anti-Clenbuterol immunoaffinity column
-  Anti-Salbutamol immunoaffinity column
-  Artificial oxygen carrier detection column

## Rb IgG anti-Equine Growth Hormone Immunoaffinity Column

**Application: interesting for the screening of GH treated horses.**

### CHARACTERISTICS

**Matrix :** Sepharose™4 fast flow

(high cross-linked 4% agarose spherical) .

Spacer arm : 12 atoms .

Bead size range : 45-165 µm .

Exclusion limit :  $2 \times 10^7$  daltons .

Maximum pressure : 3 bars (43 psi, 0.3 MPa) .

**Ligand :** Rabbit IgG anti-equine growth hormone .

**Attachment :** at Fc portion of IgG.

**Immobilized ligand :** 10,000 µg of Rb IgG per ml of resin.

**Immunoaffinity:** 400 µl wet resin.












**Specificity :** eGH treated horses – Binding capacity determined by RIA : approx. 6 µg eGH per 400 µl of resin column.

**Storage :** 4°C, suspension in PBS buffer, pH 7.4, in the presence of NaN<sub>3</sub> 0.1% (w/v).

### ORDERING INFORMATION

Product code	Product name	Quantity	*Price in EUR
Rb IgG-eGH-c	Rabbit IgG anti-eGH column	1 ea 5 ea > 10 ea	365.00 1734.00 Please inquire
Rb IgG-eGH-a	Rabbit IgG anti-equine growth hormone antibody	250 µg	149.00
*All prices are FOB Liège Bulk quantities are available Delivery in Belgium : franco if orders > 247.89 EUR. <b>Shipment at room temperature</b>		2007 - 2008	

### OTHER IMMUNOAFFINITY COLUMNS :

-  Anti-hCGβ 109-145 peptide immunoaffinity column
-  Anti-bovine growth hormone immunoaffinity column
-  Anti-human growth hormone immunoaffinity column
-  Anti-human growth hormone releasing factor immunoaffinity column
-  Anti-IGF-1 immunoaffinity column, polyclonal antibody
-  Anti-IGF-1 immunoaffinity column, monoclonal antibody
-  Anti-IGF binding protein 3 immunoaffinity column
-  Anti-EPO immunoaffinity column
-  Anti-Clenbuterol immunoaffinity column
-  Anti-Salbutamol immunoaffinity column
-  Artificial oxygen carrier detection column

## Rb IgG anti-Human Growth Hormone Immunoaffinity Column

**Application: interesting for the screening of GH treated subjects.**

### CHARACTERISTICS

**Matrix :** Sepharose™4 fast flow

(high cross-linked 4% agarose spherical) .

Spacer arm : 12 atoms .

Bead size range : 45-165 µm .

Exclusion limit :  $2 \times 10^7$  daltons .

Maximum pressure : 3 bars (43 psi, 0.3 MPa) .

**Ligand :** Rabbit IgG anti-human growth hormone.

**Attachment :** at Fc portion of IgG.

**Immobilized ligand :** 10,000 µg of Rb IgG per ml of resin.

**Immunoaffinity resin volume :** 400 µl wet resin.












**Specificity :** hGH treated human athletes– Binding capacity determined by RIA : approx. 6 µg of hGH per 400 µl of resin column.

**Storage :** 4°C, suspension in PBS buffer, pH 7.4, in the presence of NaN<sub>3</sub> 0.1% (w/v).

### ORDERING INFORMATION

Product code	Product name	Quantity	*Price in EUR
Rb IgG-hGH-c	Rabbit IgG anti-human GH column	1 ea 5 ea > 10 ea	365.00 1734.00 Please inquire
Rb IgG-hGH-a	Rabbit IgG Anti-human GH antibody	250 µg	149.00
*All prices are FOB Liège Bulk quantities are available Delivery in Belgium : franco if orders > 247.89 EUR. <b>Shipment at room temperature</b>		2007 - 2008	

### OTHER IMMUNOAFFINITY COLUMNS :

-  Anti-hCGβ 109-145 peptide immunoaffinity column
-  Anti-bovine growth hormone immunoaffinity column
-  Anti-equine growth hormone immunoaffinity column
-  Anti-human growth hormone releasing factor immunoaffinity column
-  Anti-IGF-1 immunoaffinity column, polyclonal antibody .
-  Anti-IGF-1 immunoaffinity column, monoclonal antibody .
-  Anti-IGF binding protein 3 immunoaffinity column
-  Anti-EPO immunoaffinity column
-  Anti-Clenbuterol immunoaffinity column
-  Anti-Salbutamol immunoaffinity column
-  Artificial oxygen carrier detection column



**Rb IgG**  
**anti- human Growth Hormone Releasing Factor**  
**(anti hGRF)**  
**Immunoaffinity Column**  
**Application: interesting for the screening of GRF treated humans.**

**CHARACTERISTICS**

**Matrix :** Sepharose™4 fast flow  
 (high cross-linked 4% agarose spherical) .  
 Spacer arm : 12 atoms .  
 Bead size range : 45-165 µm .  
 Exclusion limit :  $2 \times 10^7$  daltons .  
 Maximum pressure : 3 bars (43 psi, 0.3 MPa) .

**Ligand :** Rabbit IgG anti-human GRF.

**Attachment :** at Fc portion of IgG.

**Immobilized ligand :** 10,000 µg of Rb IgG per ml of resin.

**Immunoaffinity resin volume :** 400 µl wet resin.












**Specificity :** hGRF rich sera and/or urine- Binding capacity determined by RIA : approx. 0.8 µg hGRF per 400 µl of resin column.

**Storage :** 4°C, suspension in PBS buffer, pH 7.4, in the presence of NaN<sub>3</sub> 0.1% (w/v).

**ORDERING INFORMATION**

Product code	Product name	Quantity	*Price in EUR
Rb IgG-hGRF-c	Rabbit IgG anti-human GRF column	1 ea	365.00
		5 ea	1734.00
		> 10 ea	Please inquire
Rb IgG-hGRF-a	Rabbit IgG anti-human GRF antibody	250 µg	149.00
*All prices are FOB Liège Bulk quantities are available Delivery in Belgium : franco if orders > 247.89 EUR. <b>Shipment at room temperature</b>		<b>2007- 2008</b>	

**OTHER IMMUNOAFFINITY COLUMNS :**

-  Anti-hCGβ 109-145 peptide immunoaffinity column
-  Anti-bovine growth hormone immunoaffinity column
-  Anti-equine growth hormone immunoaffinity column
-  Anti-human growth hormone immunoaffinity column
-  Anti-IGF-1 immunoaffinity column, polyclonal antibody
-  Anti-IGF-1 immunoaffinity column, monoclonal antibody
-  Anti-IGF binding protein 3 immunoaffinity column
-  Anti-EPO immunoaffinity column
-  Anti-Clenbuterol immunoaffinity column
-  Anti-Salbutamol immunoaffinity column
-  Artificial oxygen carrier detection column

## Rb IgG anti-IGF-1 Immunoaffinity Column

Application: interesting for the screening of growth hormone or IGF-1 treated humans and/or horses.

### CHARACTERISTICS

**Matrix :** Sepharose™4 fast flow  
 (high cross-linked 4% agarose spherical) .  
 Spacer arm : 12 atoms .  
 Bead size range : 45-165 µm .  
 Exclusion limit :  $2 \times 10^7$  daltons .  
 Maximum pressure : 3 bars (43 psi, 0.3 MPa).

**Ligand :** Rabbit IgG anti-IGF-1.

**Attachment :** at Fc portion of IgG.

**Immobilized ligand :** 10,000 µg of Rb IgG per ml of resin.

**Immunoaffinity resin volume :** 400 µl wet resin.












**Specificity :** hGH and IGF-1 treated human athletes. Binding capacity determined by RIA : approx. 2 µg of IGF-1 per 400 µl of resin column

**Storage :** 4°C, suspension in PBS buffer, pH 7.4, in the presence of NaN<sub>3</sub> 0.1% (w/v).

### ORDERING INFORMATION

Product code	Product name	Quantity	*Price in EUR
RbIgG-IGF-1-c	Rabbit IgG anti-IGF-1 column	1 ea 5 ea > 10 ea	365.00 1734.00 Please inquire
Rb IgG-IGF-1-a	Rabbit IgG anti-IGF-1 antibody	250 µg	149.00
*All prices are FOB Liège Bulk quantities are available Delivery in Belgium : franco if orders > 247.89 EUR. <b>Shipment at room temperature</b>		2007 - 2008	

### OTHER IMMUNOAFFINITY COLUMNS :

-  Anti-hCGβ 109-145 peptide immunoaffinity column
-  Anti-bovine growth hormone immunoaffinity column
-  Anti-equine growth hormone immunoaffinity column
-  Anti-human growth hormone immunoaffinity column
-  Anti-human growth hormone releasing factor immunoaffinity column
-  Anti-IGF-1 immunoaffinity column, monoclonal antibody
-  Anti-IGF binding protein 3 immunoaffinity column
-  Anti-EPO immunoaffinity column
-  Anti-Clenbuterol immunoaffinity column
-  Anti-Salbutamol immunoaffinity column
-  Artificial oxygen carrier detection column

**Mab IgG anti-IGF-1**  
**Immunoaffinity Column**  
**Application: interesting for the screening of**  
**growth hormone or IGF-1 treated humans and/or horses.**

**CHARACTERISTICS**

**Matrix :** Sepharose™4 fast flow

(high cross-linked 4% agarose spherical) .

Spacer arm : 12 atoms .

Bead size range : 45-165 µm .

Exclusion limit :  $2 \times 10^7$  daltons .

Maximum pressure : 3 bars (43 psi, 0.3 MPa).

**Ligand :** Purified mouse monoclonal IgG<sub>1</sub> anti-IGF-1.

**Attachment :** at Fc portion of IgG<sub>1</sub>.

**Immobilized ligand :** 1,000 µg of IgG<sub>1</sub> per ml of resin.

**Immunoaffinity resin volume :** 400 µl wet resin.












**Specificity :** hGH and IGF-1 treated human athletes . Binding capacity in IGF-1 : Not determined.

**Storage :** 4°C, suspension in PBS buffer, pH 7.4, in the presence of NaN<sub>3</sub> 0.1% (w/v).

**ORDERING INFORMATION**

Product code	Product name	Quantity	*Price in EUR
Mab-IGF-1-c	Mouse monoclonal IgG <sub>1</sub> anti-IGF-1 column	1 ea	540.00
		5 ea	2565.00
		> 10 ea	Please inquire
Mab IgG <sub>1</sub> -IGF-1-a	MAB IgG <sub>1</sub> anti-IGF-1 antibody	250 µg	200.00
*All prices are FOB Liège Bulk quantities are available Delivery in Belgium : franco if orders > 247.89 EUR. <b>Shipment at room temperature</b>			<b>2007 - 2008</b>

**OTHER IMMUNOAFFINITY COLUMNS :**

-  Anti-hCGβ 109-145 peptide immunoaffinity column
-  Anti-bovine growth hormone immunoaffinity column
-  Anti-equine growth hormone immunoaffinity column
-  Anti-human growth hormone immunoaffinity column
-  Anti-human growth hormone releasing factor immunoaffinity column
-  Anti-IGF-1 immunoaffinity column, polyclonal antibody .
-  Anti-IGF binding protein 3 immunoaffinity column
-  Anti-EPO immunoaffinity column
-  Anti-Clenbuterol immunoaffinity column
-  Anti-Salbutamol immunoaffinity column
-  Artificial oxygen carrier detection column

**Mab IgG Anti-IGF Binding Protein 3**  
**Immunoaffinity Column**  
**Application: interesting to establish the BP3/BP2 ratio**  
**in the screening of GH treated human athletes.**

**CHARACTERISTICS**

**Matrix :** Sepharose™4 fast flow

(high cross-linked 4% agarose spherical) .

Spacer arm : 12 atoms .

Bead size range : 45-165 µm .

Exclusion limit :  $2 \times 10^7$  daltons .

Maximum pressure : 3 bars (43 psi, 0.3 MPa).

**Ligand :** Purified mouse monoclonal IgG<sub>1</sub> anti-IGF1-BP3.

**Attachment :** at Fc portion of IgG<sub>1</sub>.

**Immobilized ligand :** 1,000 µg of IgG<sub>1</sub> per ml of resin.

**Immunoaffinity resin volume :** 400 µl wet resin.












**Specificity :** hGH treated human athletes – Binding capacity determined by RIA : approx 6 µg of IGF-BP3 per 400 µ resin column.

**Storage :** 4°C, suspension in PBS buffer, pH 7.4, in the presence of NaN<sub>3</sub> 0.1% (w/v).

**ORDERING INFORMATION**

Product code	Product name	Quantity	*Price in EUR
Mab-IGF BP3-c	Mouse monoclonal IgG <sub>1</sub> anti-IGF BP 3 column	1 ea	540.00
		5 ea	2565.00
		> 10 ea	Please inquire
Mab IgG <sub>1</sub> -IGF BF3-a	Purified mouse monoclonal IgG <sub>1</sub> anti-IGF1-BP3 antibody	250 µg	200.00
*All prices are FOB Liège Bulk quantities are available Delivery in Belgium : franco if orders > 247.89 EUR. <b>Shipment at room temperature</b>			<b>2007 - 2008</b>

**OTHER IMMUNOAFFINITY COLUMNS :**

-  Anti-hCGβ 109-145 peptide immunoaffinity column
-  Anti-bovine growth hormone immunoaffinity column
-  Anti-equine growth hormone immunoaffinity column
-  Anti-human growth hormone immunoaffinity column
-  Anti-human growth hormone releasing factor immunoaffinity column
-  Anti-IGF-1 immunoaffinity column, polyclonal antibody .
-  Anti-IGF-1 immunoaffinity column, monoclonal antibody .
-  Anti-EPO immunoaffinity column
-  Anti-Clenbuterol immunoaffinity column
-  Anti-Salbutamol immunoaffinity column
-  Artificial oxygen carrier detection column

**Rb IgG anti-EPO (erythropoetin)**  
**Immunoaffinity Column**  
**Application: interesting for the screening**  
**for testing sera or urine from EPO treated athletes.**

**CHARACTERISTICS**

**Matrix :** Sepharose™4 fast flow  
 (high cross-linked 4% agarose spherical) .  
 Spacer arm : 12 atoms .  
 Bead size range : 45-165 µm .  
 Exclusion limit :  $2 \times 10^7$  daltons .  
 Maximum pressure : 3 bars (43 psi, 0.3 MPa).

**Ligand :** Rabbit IgG anti-EPO.

**Attachment :** at Fc portion of IgG.

**Immobilized ligand :** 10,000 µg of Rb IgG per ml of resin.

**Immunoaffinity resin volume :** 400 µl wet resin.












**Specificity :** EPO treated athletes. Binding capacity determined by RIA : approx. 4 µg of EPO per 400 µl of resin column.

**Storage :** 4°C, suspension in PBS buffer, pH 7.4, in the presence of NaN<sub>3</sub> 0.1% (w/v).

**ORDERING INFORMATION**

Product code	Product name	Quantity	*Price in EUR
Rb IgG-EPO-c	Rabbit IgG anti-EPO column	1 ea	365.00
		5 ea	1734.00
		> 10 ea	Please inquire
Rb IgG-EPO-a	Rabbit IgG anti-EPO antibody	250 µg	149.00
*All prices are FOB Liège Bulk quantities are available Delivery in Belgium : franco if orders > 247.89 EUR. <b>Shipment at room temperature</b>		2007 - 2008	

**OTHER IMMUNOAFFINITY COLUMNS :**

-  Anti-hCGβ 109-145 peptide immunoaffinity column
-  Anti-bovine growth hormone immunoaffinity column
-  Anti-equine growth hormone immunoaffinity column
-  Anti-human growth hormone immunoaffinity column
-  Anti-human growth hormone releasing factor immunoaffinity column
-  Anti-IGF-1 immunoaffinity column, polyclonal antibody
-  Anti- IGF-1 immunoaffinity column, monoclonal antibody
-  Anti- IGF binding protein 3 immunoaffinity column
-  Anti-Clenbuterol immunoaffinity column
-  Anti-Salbutamol immunoaffinity column
-  Artificial oxygen carrier detection column



## Mab IgG Anti-Clenbuterol Immunoaffinity Column

**Application: interesting for the screening of urinary albuterol residues  
in meat producing animals or in race horse doping.**

### CHARACTERISTICS

**Matrix :** Sepharose™4 fast flow

(high cross-linked 4% agarose spherical) .

Spacer arm : 12 atoms .

Bead size range : 45-165 µm .

Exclusion limit :  $2 \times 10^7$  daltons .

Maximum pressure : 3 bars (43 psi, 0.3 MPa) .

**Ligand :** Purified monoclonal IgG<sub>1</sub> anti-clenbuterol.

**Attachment :** at Fc portion of IgG<sub>1</sub>.

**Immobilized ligand :** 1,000 µg of IgG<sub>1</sub> per ml of resin.

**Immunoaffinity resin volume :** 400 µl wet resin.












**Specificity :** hormone treated animals – Binding capacity determined by RIA : approx. 60 ng of clenbuterol per 400 µl of resin column.

**Storage :** 4°C, suspension in PBS buffer, pH 7.4, in the presence of NaN<sub>3</sub> 0.1% (w/v).

### ORDERING INFORMATION

Product code	Product name	Quantity	*Price in EUR
Mab-CBL-c	Mouse monoclonal IgG anti-clenbuterol column	1 ea	540.00
		5 ea	2565.00
		> 10 ea	Please inquire
Mab IgG <sub>1</sub> -CBL-a	Purified monoclonal IgG <sub>1</sub> anti-clenbuterol antibody	250 µg	200.00
*All prices are FOB Liège Bulk quantities are available Delivery in Belgium : franco if orders > 247.89 EUR. <b>Shipment at room temperature</b>		2007 - 2008	

### OTHER IMMUNOAFFINITY COLUMNS :

-  Anti-hCGβ 109-145 peptide immunoaffinity column
-  Anti-bovine growth hormone immunoaffinity column
-  Anti-equine growth hormone immunoaffinity column
-  Anti-human growth hormone immunoaffinity column
-  Anti-human growth hormone releasing factor immunoaffinity column
-  Anti-IGF-1 immunoaffinity column, polyclonal antibody
-  Anti-IGF-1 immunoaffinity column, monoclonal antibody
-  Anti-IGF binding protein 3 immunoaffinity column
-  Anti-EPO immunoaffinity column
-  Anti-Salbutamol immunoaffinity column
-  Artificial oxygen carrier detection column

## Mab IgG Anti-Salbutamol Immunoaffinity Column

**Application: interesting for the screening of urinary albuterol  
residues in  
meat producing animals or in race horse doping.**

### CHARACTERISTICS

**Matrix :** Sepharose™4 fast flow

(high cross-linked 4% agarose spherical) .

Spacer arm : 12 atoms .

Bead size range : 45-165 µm .

Exclusion limit :  $2 \times 10^7$  daltons .

Maximum pressure : 3 bars (43 psi, 0.3 MPa) .

**Ligand :** Purified monoclonal IgG<sub>4</sub> anti-salbutamol.

**Attachment :** at Fc portion of IgG<sub>4</sub>.

**Immobilized ligand :** 1,000 µg of IgG<sub>4</sub> per ml of resin.

**Immunoaffinity resin volume :** 400 µl wet resin.












**Specificity :** hormone treated animals - Binding capacity determined by RIA : approx. 60 ng of salbutamol per 400 µl of resin column.

**Storage :** 4°C, suspension in PBS buffer, pH 7.4, in the presence of NaN<sub>3</sub> 0.1% (w/v).

### ORDERING INFORMATION

Product code	Product name	Quantity	*Price in EUR
Mab-SBL-c	Mouse monoclonal IgG anti-salbutamol column	1 ea	540.00
		5 ea	2565.00
		> 10 ea	Please inquire
Mab IgG <sub>4</sub> -SBL-a	purified monoclonal IgG <sub>4</sub> anti-salbutamol antibody	250 µg	200.00
*All prices are FOB Liège Bulk quantities are available Delivery in Belgium : franco if orders > 247.89 EUR. <b>Shipment at room temperature</b>			<b>2007 - 2008</b>

### OTHER IMMUNOAFFINITY COLUMNS :

-  Anti-hCGβ 109-145 peptide immunoaffinity column
-  Anti-bovine growth hormone immunoaffinity column
-  Anti-equine growth hormone immunoaffinity column
-  Anti-human growth hormone immunoaffinity column
-  Anti-human growth hormone releasing factor immunoaffinity column
-  Anti-IGF-1 immunoaffinity column, polyclonal antibody
-  Anti-IGF-1 immunoaffinity column, monoclonal antibody
-  Anti-IGF binding protein 3 immunoaffinity column
-  Anti-EPO immunoaffinity column
-  Anti-Clenbuterol immunoaffinity column
-  Artificial oxygen carrier detection column



## ARTIFICIAL OXYGEN CARRIER DETECTION

Maximal oxygen uptake is the major performance limiting factor in endurance sport. A new class of substances might represent the next step of fraudulent improvement of the maximal oxygen uptake. These substances are POLYMERIZED RECOMBINANT BOVINE and HUMAN HEMOGLOBIN. Hemoglobin based solutions improved aerobic exercise in animal and human testing. International sporting federations are aware of this new emerging doping threat in human athletes and in horse racing.

### Rb IgG anti-human hemoglobin Immunoaffinity Column

**Application: interesting for the screening of Hemoglobin in treated humans, beef, horses.**

**Matrix: Sepharose™ 4 Fast Flow.**

(high cross-linked 4% agarose spherical) .

Spacer arm : 12 atoms .

Bead size range : 45-165 µm .

Exclusion limit :  $2 \times 10^7$  daltons .

Maximum pressure : 3 bars (43 psi, 0.3 MPa).

**Ligand:** Rabbit IgG anti-human ( or bovine, equine) hemoglobin.

**Attachment:** at Fc portion of IgG.

**Immobilized ligand:** 10,000 µg of Rb IgG per ml of resin.

**Affinity resin volume:** 400 µl wet resin.

**Specificity:** Hemoglobin - Binding capacity determined by RIA : approx. 6 µg eGH per 400 µl of resin column.

**Storage:** 4°C, suspension in PBS buffer, pH 7.4, in the presence of NaN<sub>3</sub> 0.1% (w/v).

### ORDERING INFORMATION

Product code	Product name	Quantity	*Price in EUR
Rb IgG-hHb-c	Rabbit IgG anti-human hemoglobin column	1 ea/each	365.00
Rb IgG-bHb-c	Rabbit IgG anti-bovine hemoglobin column	5 ea/each	1734.00
Rb IgG-eHb-c	Rabbit IgG anti-equine hemoglobin column	> 10 ea/each	Please inquire

\* All prices are FOB Liège.

Bulk quantities are available.

Shipment at room temperature

### Antibodies for specific detection by Western Blotting of human, bovine and equine Hemoglobin












Product code	Product name	Quantity	*Price in EUR
Rb IgG-hHb-a	Rabbit IgG anti-specific peptide of human Hemoglobin antibody	1000 µg	149.00
Rb IgG-bHb-a	Rabbit IgG anti-specific peptide of bovine Hemoglobin antibody	1000 µg	149.00
Rb IgG-eHb-a	Rabbit IgG anti-specific peptide of equine Hemoglobin antibody	1000 µg	149.00

\* All prices are FOB Liège.

Bulk quantities are available.

Shipment at room temperature

### OTHER IMMUNOAFFINITY COLUMNS :

-  Anti-hCGβ 109-145 peptide immunoaffinity column
-  Anti-bovine growth hormone immunoaffinity column
-  Anti-equine growth hormone immunoaffinity column
-  Anti-human growth hormone immunoaffinity column
-  Anti-human growth hormone releasing factor immunoaffinity column
-  Anti-IGF-1 immunoaffinity column, polyclonal antibody
-  Anti-IGF-1 immunoaffinity column, monoclonal antibody
-  Anti-IGF binding protein 3 immunoaffinity column
-  Anti-EPO immunoaffinity column
-  Anti-Clenbuterol immunoaffinity column
-  Anti-Salbutamol immunoaffinity column

## Immobilized Avidin and Biotin

---

Immobilized Tetrameric Avidin, **ready and easy-to-use**

$$k_d (\text{avidin-biotin}) = 10^{-15} \text{ M}$$

Immobilized Monomeric Avidin,

$$k_d (\text{monomeric avidin-biotin}) = 10^{-7} \text{ M}$$

Immobilized 2-Iminobiotin,

$$k_d (\text{2-iminobiotin-native avidin}) = 10^{-7} \text{ M}$$

## Immobilized Tetrameric AVIDIN

Tetrameric Avidin – Sepharose™ CL-4B  
 Product code : AVI-T-4S

Characteristics	Package	* Price in EUR
<b>Matrix :</b> Sepharose™ CL-4B (cross-linked 4% agarose) . Bead size range : 45-165 µm . Spacer arm : 12 atoms . Exclusion limit : 2.10 <sup>7</sup> daltons . <b>Coupling method :</b> N-hydroxysuccinimidyl carboxylate. <b>Immobilized native avidin :</b> Approx. 5 mg per ml of wet gel. <b>Binding capacity :</b> Approx. 50 µg of d-biotin per ml of wet gel. <b>State :</b> Suspension in PBS pH 7.4 ; NaN <sub>3</sub> 0.1%(w/v) . <b>Storage :</b> 4°C.	5 ml	140.00
	10 ml	250.00
	25 ml	500.00
*All prices are FOB Liège Bulk quantities are available Delivery in Belgium : franco if orders > 247.89 EUR. <b>Shipment at room temperature</b>	2007 - 2008	

**Tetrameric Avidin – Sepharose™ 4 fast flow**  
 Product code : **AVI-T-4FF**

Characteristics	Package	* Price in EUR
<b>Matrix :</b> Sepharose™ 4 fast flow (high cross-linked 4% agarose) . Bead size range : 45-165 µm . Spacer arm : 12 atoms . Exclusion limit : 3.10 <sup>7</sup> daltons . Flow rate range : 50-300 cm/h . <b>Coupling method :</b> N-hydroxysuccinimidyl carboxylate. <b>Immobilized native avidin :</b> Approx. 5 mg per ml of wet gel. <b>Binding capacity :</b> Approx. 50 µg of d-biotin per ml of wet gel. <b>State :</b> Suspension in PBS pH 7.4 ; NaN <sub>3</sub> 0.1%(w/v). <b>Storage :</b> 4°C.	5 ml	170.00
	10 ml	300.00
	25 ml	600.00
*All prices are FOB Liège Bulk quantities are available Delivery in Belgium : franco if orders > 247.89 EUR. <b>Shipment at room temperature</b>	<b>2007 - 2008</b>	

## Immobilized Monomeric AVIDIN

---

Monomeric Avidin – Sepharose™ CL-4B  
 Product code : AVI-M-4S

Characteristics	Package	* Price in EUR
<b>Matrix :</b> Sepharose™ CL-4B (cross-linked 4% agarose) . Bead size range : 45-165 µm . Spacer arm : 12 atoms . Exclusion limit : 2.10 <sup>7</sup> daltons . <b>Coupling method :</b> N-hydroxysuccinimidyl carboxylate. <b>Immobilized monomeric avidin :</b> Approx. 3 mg per ml of wet gel. <b>Binding capacity :</b> Approx. 30 µg of d-biotin per ml of wet gel. <b>State :</b> Suspension in PBS pH 7.4 ; NaN <sub>3</sub> 0.1%(w/v) . <b>Storage :</b> 4°C.	5 ml	276.00
	10 ml	552.00
	25 ml	828.00
*All prices are FOB Liège Bulk quantities are available Delivery in Belgium : franco if orders > 247.89 EUR. <b>Shipment at room temperature</b>	2007 - 2008	

**Monomeric Avidin – Sepharose™ 4 Fast flow**  
 Product code : **AVI-M-4FF**

Characteristics	Package	* Price in EUR
<b>Matrix :</b> Sepharose™4 fast flow (high cross-linked 4% agarose) . <b>Bead size range :</b> 45-165 µm . <b>Spacer arm :</b> 12 atoms . <b>Exclusion limit :</b> 3.10 <sup>7</sup> daltons . <b>Flow rate range :</b> 50-300 cm/h . <b>Coupling method :</b> N-hydroxysuccinimidyl carboxylate. <b>Immobilized monomeric avidin :</b> Approx. 3 mg per ml of wet gel. <b>Binding capacity :</b> Approx. 30 µg of d-biotin per ml of wet gel. <b>State :</b> Suspension in PBS pH 7.4 ; NaN <sub>3</sub> 0.1%(w/v) . <b>Storage :</b> 4°C.	5 ml	331.00
	10 ml	662.00
	25 ml	993.00
*All prices are FOB Liège Bulk quantities are available Delivery in Belgium : franco if orders > 247.89 EUR. <b>Shipment at room temperature</b>	<b>2007 - 2008</b>	

## Immobilized BIOTIN

### d-Biotin – Sepharose™ CL-4B Product code : VIT-H-4S

Characteristics	Package	* Price in EUR
<b>Matrix :</b> Sepharose™ CL-4B (cross-linked 4% agarose) . <b>Bead size range :</b> 45-165 µm . <b>Spacer arm :</b> 12 atoms . <b>Exclusion limit :</b> 2.10 <sup>7</sup> daltons . <b>Coupling method :</b> -NH <sub>2</sub> attachment. <b>Immobilized d-biotin :</b> Approx. 4 mg per ml of wet gel. <b>Binding capacity :</b> Approx. 40 mg of native avidin per ml of wet gel. <b>State :</b> Suspension in PBS pH 7.4 ; NaN <sub>3</sub> 0.1%(w/v) . <b>Storage :</b> 4°C.	5 ml	90.00
	10 ml	170.00
	25 ml	335.00
	<b>Bulk quantities are available</b>  <b>2007 2008</b>	<b>Please inquire</b>

### d-Biotin – Sepharose™ 4 Fast flow Product code : VIT-H-4FF

Characteristics	Package	* Price in EUR
<b>Matrix :</b> Sepharose™ 4 fast flow (high cross-linked 4% agarose) . <b>Bead size range :</b> 45-165 µm . <b>Spacer arm :</b> 12 atoms . <b>Exclusion limit :</b> 3.10 <sup>7</sup> daltons . <b>Flow rate range :</b> 50-300 cm/h . <b>Coupling method :</b> -NH <sub>2</sub> attachment. <b>Immobilized d-biotin :</b> Approx. 4 mg per ml of wet gel. <b>Binding capacity :</b> Approx. 40 mg of native avidin per ml of wet gel. <b>State :</b> Suspension in PBS pH 7.4 ; NaN <sub>3</sub> 0.1%(w/v) . <b>Storage :</b> 4°C.	5 ml	106.00
	10 ml	200.00
	25 ml	400.00
	<b>Bulk quantities are available</b>  <b>2007 2008</b>	<b>Please inquire</b>

## Immobilized 2-IminoBIOTIN

### 2-Iminobiotin – Sepharose™ CL-4B

Product code : IMI-H-4S

Characteristics	Package	* Price in EUR
<b>Matrix :</b> Sepharose™ CL-4B (cross-linked 4% agarose) . <b>Bead size range :</b> 45-165 µm . <b>Spacer arm :</b> 12 atoms . <b>Exclusion limit :</b> 2.10 <sup>7</sup> daltons . <b>Coupling method :</b> -NH <sub>2</sub> attachment. <b>Immobilized 2-iminobiotin :</b> Approx. 1 mg per ml of wet gel. <b>Binding capacity :</b> > 10 mg of native avidin per ml of wet gel. <b>State :</b> Suspension in PBS pH 7.4 ; NaN <sub>3</sub> 0.1%(w/v) . <b>Storage :</b> 4°C.	5 ml	120.00
	10 ml	225.00
	25 ml	450.00
	<b>Bulk quantities are available</b>  <b>2007 2008</b>	<b>Please inquire</b>

### 2-Iminobiotin – Sepharose™ 4 Fast flow

Product code : IMI-H-4FF

Characteristics	Package	* Price in EUR
<b>Matrix :</b> Sepharose™ 4 fast flow (high cross-linked 4% agarose) <b>Bead size range :</b> 45-165 µm . <b>Spacer arm :</b> 12 atoms . <b>Exclusion limit :</b> 3.10 <sup>7</sup> daltons . <b>Flow rate range :</b> 50-300 cm/h . <b>Coupling method :</b> -NH <sub>2</sub> attachment. <b>Immobilized 2-iminobiotin :</b> Approx. 1 mg per ml of wet gel. <b>Binding capacity :</b> 16 mg of native avidin per ml of wet gel. <b>State :</b> Suspension in PBS pH 7.4 ; NaN <sub>3</sub> 0.1%(w/v) . <b>Storage :</b> 4°C.	5 ml	140.00
	10 ml	270.00
	25 ml	540.00
	<b>Bulk quantities are available</b>  <b>2007 2008</b>	<b>Please inquire</b>

### 2-Iminobiotin – Sepharose™ 6 fast flow New!

Product code : IMI-H-6FF

Characteristics	Package	* Price in EUR
<b>Matrix :</b> Sepharose™ 4 fast flow (high cross-linked 4% agarose) <b>Bead size range :</b> 45-165 µm . <b>Spacer arm :</b> 12 atoms . <b>Exclusion limit :</b> 3.10 <sup>7</sup> daltons . <b>Flow rate range :</b> 50-300 cm/h . <b>Coupling method :</b> -NH <sub>2</sub> attachment. <b>Immobilized 2-iminobiotin :</b> Approx. 1 mg per ml of wet gel. <b>Binding capacity :</b> > 18 mg of native avidin per ml of wet gel. <b>State :</b> Suspension in PBS pH 7.4 ; NaN <sub>3</sub> 0.1%(w/v) . <b>Storage :</b> 4°C.	5 ml	150.00
	10 ml	290.00
	25 ml	580.00
	<b>Bulk quantities are available</b>  <b>2007 2008</b>	<b>Please inquire</b>



## AFFINITY MEDIA

- [!\[\]\(c8dce68b26731c7aa5915072fc9d68dd\_img.jpg\) Affinity media for IMAC](#)
- [!\[\]\(76b3245de86167eba9fcdc9cc9f32aa4\_img.jpg\) Activated Protein A like-Matrix](#)
- [!\[\]\(13db7587f50867332e5bedc6a161739d\_img.jpg\) p-Aminobenzamidine-Matrix](#)
- [!\[\]\(7be5ea91065783fbb69e41ba5d9680f7\_img.jpg\) Avidin \(tetrameric\), immobilized](#)
- [!\[\]\(20b6116a35a537c491fe1e2cc04e020e\_img.jpg\) Avidin \(monomeric\), immobilized](#)
- [!\[\]\(9e6cd34ccb2e621bcc854e8b124ba455\_img.jpg\) Biotin, immobilized](#)
- [!\[\]\(bb119fe28602f6188164a7a98762f831\_img.jpg\) IminoBiotin, immobilized](#)
- [!\[\]\(49aeb3a66f7dc15e36983c42e0317aa1\_img.jpg\) Blue-Agarose](#)
- [!\[\]\(a7a27f5e6940580e878a09505a95e3b7\_img.jpg\) Concentration resin<sup>R</sup> \(proteins and/or DNA\)New!](#)
- [!\[\]\(b724cffffa4f0175f208d25028a06541\_img.jpg\) Gelatin-Agarose](#)
- [!\[\]\(bbb434a2c30ede4710cc1781d50b17e2\_img.jpg\) Glutathione-Matrix](#)
- [!\[\]\(e499851de9f0532e4eccd64e6fb062d2\_img.jpg\) Iminodiacetic acid-Matrix for IMAC](#)
- [!\[\]\(a31e896847642f3077baceeecc65febd\_img.jpg\) Kit for Egg yolk IgY purification](#)
- [!\[\]\(08a0d9425e57b7572d69c6634ec70f59\_img.jpg\) Kit for His-tagged protein purification-PDC kit](#)
- [!\[\]\(501269e36f33009e4bea0025d102fb15\_img.jpg\) Kit for Ig \(IgG, IgM, IgY\) immobilization](#)
- [!\[\]\(0fd2b1d4bb74cb524dfffb7715063674\_img.jpg\) Kit for IgG immobilization](#)
- [!\[\]\(313c14b3fd7f24ad8a3f583003c327dd\_img.jpg\) Kit for Sheep IgG purification](#)
- [!\[\]\(dc4bc4364cc578e48eefa63f99e5886c\_img.jpg\) Melibiose-Agarose](#)
- [!\[\]\(49a22c4ea4aa28689bd904229d97f95d\_img.jpg\) PDC<sup>R</sup> \(pentadentate chelator\) & PDC kit<sup>R</sup>](#)
- [!\[\]\(e84a7b924fc7d878281cd3adc0e8f61b\_img.jpg\) PMIB<sup>R</sup>](#)
- [!\[\]\(b2603503560814b5dc8b326be5510d6c\_img.jpg\) Protein A-TSK<sup>R</sup>](#)
- [!\[\]\(1693ef1569f3b74ebef379aa682cb27e\_img.jpg\) r-Protein A-Sepharose<sup>TM</sup> CL-6B \*\*New!\*\*](#)
- [!\[\]\(d5cce2ebaec06dad0abdda1c2a861964\_img.jpg\) r-Protein A-Sepharose<sup>TM</sup> fast flow](#)
- [!\[\]\(416fac2af83ca6b4efe2d7e6ff00fef0\_img.jpg\) r-Protein A-Streamline<sup>TM</sup> Quartz Base Matrix](#)
- [!\[\]\(ab7ff475ef3bbff758ab3b8c0e7763a0\_img.jpg\) Thiophilic gel \(T-gel\)](#)

## Egg yolk IgY purification kit easy- and ready-to-use

---

- I. CHARACTERISTICS
- II. WHY USE THE AFFILAND IgY PURIFICATION KIT?  
AND WHAT WILL YOU NEED?
- III. WHAT QUANTITY OF IgY YOU CAN OBTAIN FROM...?  
AND WHAT WILL IT COST ?
- IV. GENERAL ORDERING INFORMATION
- V. HOW TO PURIFY THE IgY ?
- VI. IDENTIFICATION OF PURIFIED IgY BY SDS-PAGE
- VII. ADVANTAGE OF BIRD IgY

## I. CHARACTERISTICS

The AFFILAND Egg Yolk IgY purification kit is composed of **4 reagents easy- and ready-to-use**:

Product name	Product code
<b>IgY Binding Gel</b>  <b>Matrix :</b> Sepharose™ 4 fast flow (high cross-linked 4% agarose) . Bead size range : 45-165 µm . Spacer arm : 12 atoms . Exclusion limit : 3.10 <sup>7</sup> daltons . Flow rate range : 50-300 cm/h . <b>Ligand :</b> IgY Binding Organic compounds. <b>Binding capacity :</b> 15-20 mg of IgY per ml of wet gel. <b>Stability of the matrix :</b> 4°C - 30°C and pH 2-11. <b>The IgY Binding Gel can be regenerated :</b> minimum 10 cycles without significant loss of binding capacity.	<b>EYK-4FF</b>
<b>IgY Loading Buffer</b>	<b>LBY</b>
<b>IgY Elution Buffer</b>	<b>EBY</b>

II. WHY USE THE AFFILAND  
IgY PURIFICATION KIT?  
AND WHAT WILL YOU NEED?

In comparaison with  
other "IgY purification kits"  
or other alternative methods

<b>MATERIALS</b>	from <b>AFFILAND</b>	from <b>OTHER SOURCES</b>
<b>Pasteur pipette</b>	<b>Yes</b>	<b>Yes</b>
<b>Buffers of the kit</b>	<b>100% aqueous</b>	<b>containing dangerous organic solvents</b>
<b>Centrifugation</b>	<b>No</b>	<b>Yes</b>
<b>Necessary time</b>	<b>60 minutes</b>	<b>Many hours</b>
<b>RESULTS</b>		
<b>Purity of purified IgY</b>	<b>98% with high recovery</b>	<b>90%</b>
<b>Time consuming ?</b>	<b>No</b>	<b>Yes</b>
<b>Labor ?</b>	<b>No</b>	<b>Yes</b>
<b>Danger to the health</b>	<b>No</b>	<b>Yes</b>
<b>Can be scaled up</b>	<b>Yes</b>	<b>No</b>

### III. WHAT QUANTITY OF IgY YOU CAN OBTAIN FROM...?AND WHAT WILL IT COST ?

**FROM 5 EGG YOLKS**  
**FOR 250-500 MG**  
**OF ULTRA-PURE IGY PURIFICATION**  
**IN A SINGLE STEP**

	Reagents	Code	Quantity	Price in EUR	IgY obtained in a single step
F R O M	<b>IgY Binding Gel</b>	<b>EYK-4FF</b>	<b>50 ml</b>	<b>513.00</b>	<b>from</b> <b>5 egg yolks</b>  <b>Results</b> <b>in a single step</b> <b>purification :</b> <b>250-500 mg</b> <b>of ultra-pure IgY</b>
	<b>IgY Loading Buffer</b>	<b>LBY</b>	<b>2000 ml</b>	<b>120.00</b>	
	<b>IgY Elution Buffer</b>	<b>EBY</b>	<b>1000 ml</b>	<b>30.00</b>	
The <b>IgY Binding Gel</b> can be regenerated : minimum 10 cycles without significant loss of binding capacity. <b>TOTAL</b>				<b>663.00</b>	
*All prices are FOB Liège Bulk quantities are available. Please inquire. Delivery in Belgium : franco if orders > 250 EUR.				<b>2007 - 2008</b>	

**FROM 20-25 EGG YOLKS**  
**FOR 1500-2500 MG**  
**OF ULTRA-PURE IGY PURIFICATION**  
**IN A SINGLE STEP**

F R O M	Reagents	Code	Quantity	Price in EUR	IgY obtained in a single step  <b>from</b> <b>20-25 egg</b> <b>yolks</b>  <b>Result:</b> <b>1500-2500 mg</b> <b>of ultra-pure</b> <b>IgY</b>
	<b>IgY Binding Gel</b>	<b>EYK-4FF</b>	<b>200 ml</b>	<b>1550.00</b>	
	<b>IgY Loading Buffer</b>	<b>LBY</b>	<b>3000 ml</b>	<b>180.00</b>	
	<b>IgY Elution Buffer</b>	<b>EBY</b>	<b>5000 ml</b>	<b>80.00</b>	
<b>TOTAL</b>				<b>1805.00</b>	
*All prices are FOB Liège Bulk quantities are available. Please inquire. Delivery in Belgium : franco if orders > 247.89 EUR.				<b>2007 - 2008</b>	

#### IV. GENERAL ORDER INFORMATION

Product Code	Product name	Package	*Price in EUR
<b>EYK-4FF</b>	<b>IgY binding Gel</b>	25 ml gel 50 ml gel 100 ml of gel 500 ml of gel	308.00 513.00 854.00 3075.00
<b>LBY</b>	<b>IgY Loading Buffer</b>	1,000 ml 5,000 ml	60.00 170.00
<b>BBY</b>	<b>IgY Binding Buffer</b>	1,000 ml 5,000 ml	40.00 115.00
<b>EBY</b>	<b>IgY Elution Buffer</b>	1,000 ml 5,000 ml	30.00 80.00
*All prices are FOB Liège Bulk quantities are available. Please inquire. Delivery in Belgium : franco if orders > 247.89 EUR.		<b>2007 - 2008</b>	

#### V. HOW TO PURIFY THE IgY ?

**In contrast to alternative purification methods,**

**The AFFILAND Egg yolk IgY purification kit,**

**easy- and ready-to-use**

**is composed of**

##### **1. IgY Binding Gel**

The IgY Binding Gel can be regenerated : minimum 10 cycles without significant loss of binding capacity for IgY.

##### **2. IgY aqueous Loading Buffer**

##### **3. IgY aqueous Elution Buffer**

### **INSTRUCTIONS FOR USE**

- Add the **crude egg yolk** to the Loading Buffer and mix for 2-3 minutes, you will obtain without difficulty a solution.
- Mix such a solution with the cake of IgY Binding Matrix for 60 minutes at 4°C.
- Wash on a buchner funnel, with the Binding Buffer.
- Elute your IgY with the Elution Buffer.

**Results: minimum 50-100 mg of ultra-pure IgY/yolk egg  
after 1 and half hours,  
in a one step purification.**

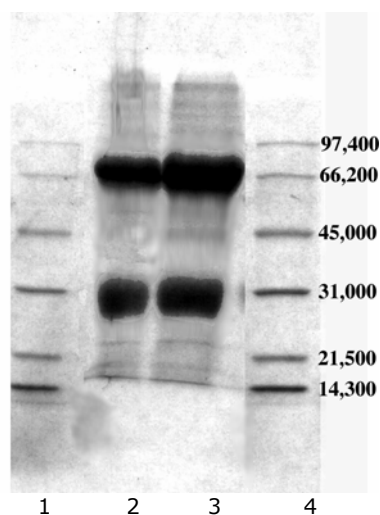
Also, you can scale-up easily your purification:  
the gram or kilogram range of IgY can be obtained  
without an increase in work load.

**THE PROTOCOLS FOR USE  
WILL BE PROVIDED WITH THE ORDERS.**



## VI. IDENTIFICATION OF PURIFIED IgY BY SDS-PAGE

**SDS-PAGE 12% in the presence of  $\beta$ -mercaptoethanol**  
(Stained with Coomassie blue)



Lanes 2 & 3 : IgY purified by AFFILAND Egg yolk IgY purification kit  
Lanes 1 & 4 : Markers

## VII. ADVANTAGE OF BIRD IgY

Many mammalian proteins including human proteins have proven to be poorly or not at all antigenic in mammalian animal hosts. The explanation is due to the resemblance in structure of mammalian proteins between species.

The birds (chickens, turkeys...) are not mammals. The immunoglobulin in hen eggs which is the same in its serum, is named IgY. The production of specific antibodies in birds presents many advantages as shown below.

<b>Mammalian IgG</b>	<b>&lt; COMPARISON &gt;</b>	<b>Bird (Chicken, Turkey...) IgY</b>
Sometimes very poor avidity	Mammalian antigens <sup>1</sup> /response	High avidity
Yes	Protein A & Protein G <sup>5a</sup> /binding	No
Yes	Mammalian IgG <sup>5</sup> /recognition	No
Common Fc receptor	Mammalian complements <sup>5b</sup> /recognition	No
Yes	Antibody response <sup>4</sup>	No
From 60 th day in rabbits	Antibody production capacity <sup>2</sup>	From 30 th day
50 - 70 ml sera/90 immunization days: 500-700 mg of IgG		1 egg per day and 60 eggs/90 immunization days: 3 - 6 g of IgY
Antisera: expensive work (Bleeding, centrifugation, conservation at -20°C or lower temperature)	Antibody source collection <sup>3, 6</sup>	Eggs: cheaper work (The eggs can be stored at 4°C for at least 6 months without loss of egg yolk quality)
RIA, IRMA, ELISA, CONJUGATE, ENZYMATIC DIGESTION...	<b>Applications<sup>7</sup></b>	RIA, IRMA, ELISA, CONJUGATE, ENZYMATIC DIGESTION...

<sup>1</sup> The birds recognise easily the presence of any mammalian proteins. The specific antibodies IgY developed in chickens therefore get high avidity to mammalian antigens.

<sup>2</sup> Furthermore, the quantity of IgY in one egg yolk is appreciable (easily 50-100 mg) and the hen can lay one egg per day.

<sup>3</sup> The birds are easy to feed in comparison with mammalian animals (rabbits, sheep, goats...), resulting in lower production cost. The collection of eggs is much easier than collection of mammalian serum.

<sup>4</sup> The response for specific antibody in birds is much quicker than in mammalian animals: from 30 th day in chickens, from 60 th day in rabbits and longer in bigger mammalian animals.

<sup>5</sup> The IgY (MW = 180,000 daltons) is different from mammalian IgG (MW = 150,000 daltons) as well as their Fc. This results in:

<sup>5a</sup> IgY does not recognise mammalian Fc receptors. It does'nt bind to Protein A and Protein G.

<sup>5b</sup> IgY does not recognise mammalian complements.

**Using IgY will reduce considerably the background  
(non-specific binding) of the immune reaction.**

<sup>6</sup> IgY is more stable: 6 - 12 months at 4°C without significant loss of antibody activity. The egg can be conserved at 4°C for 6 months minimum without loss of egg yolk quality.

<sup>7</sup> Finally, all applications carried out with IgG can be realized with IgY: RIA (radioimmunoassay), IRMA (immuno-radio-metric assay), ELISA (enzyme linked immuno sorbent assay)... or digestion by papain and trypsin for getting Fab and Fab'.

### References:

Akita EM, Nakai S; J Immunol Methods 1993 Jun 18; 162(2):155-64.  
 Carlander D et al.; Ups J Med Sci 1999; 104(3): 179-89.  
 Gassmann et al.; FASEB J 1990 May; 4(8): 2528-32.  
 Gassmann et al.; Schweiz Arch Tierheilkd 1990; 132(6): 289-94.  
 Higgins DA et al.; Vet Immunol Immunopathol 1995 Jan;44(2):169-80.  
 J Dairy Sci 1998 Jan; 81(1): 54-63.  
 Larsson A et al.; Poult Sci 1993 Oct; 72(10): 1807-12.

## First attempts for "Histidine containing proteins" purification using

**PDC KIT**  
(pentadentate chelator kit)  
Ready and easy-to-use

- **For 6xHis-tagged proteins.**
- **For Zn proteins.**
- **For first attempts at general purification of proteins.**

(For more information, see PDC & PDC KIT - this Catalogue)

The PDC KIT is composed of

- Four PDC metal chelate columns, ready-to-use
  - Matrix : **<sup>1</sup>Sepharose™ CL-4B** (a cross-linked 4% agarose) .  
and/or **<sup>2</sup>Sepharose™ 4 Fast Flow** (a high cross-linked 4% agarose) .
  - Chelated metal ions : Cu<sup>2+</sup>(Cu-PDC); Ni<sup>2+</sup>(Ni-PDC); Zn<sup>2+</sup>(Zn-PDC) & Co<sup>2+</sup>(Co-PDC).
  - Binding capacity : 15-20 mg of 6xHis-tagged HSP 60/ml of  
wet Zn-PDC resin.  
and approx. 15 mg of human alpha-2-Macroglobulin/ ml of  
wet Ni-PDC resin.
  - Stability of the resin : 4°C-30°C and pH 2-11.
  - The gel can be regenerated : minimum 10 cycles without significant loss of binding  
capacity.
- And four buffers, *ready-to-use*
  - Buffer A, B.
  - Buffer E, F.

---

Sepharose™ and Streamline™ are trade marks of Amersham Biosciences.

**<sup>1</sup>Sepharose™ CL-4B** is a cross-linked 4% agarose :  
Bead size range : 45-165 µm .  
Exclusion limit : 2.10<sup>7</sup> daltons .

**<sup>2</sup>Sepharose™ 4 fast flow** is a high cross-linked 4% agarose :  
**Bead size range** : 45-165 µm .  
**Exclusion limit** : 3.10<sup>7</sup> daltons .  
**Flow rate range** : 50-300 cm/h .

## PDC KIT - ORDERING INFORMATION

1/2

### PDC KIT

(PENTADENTATE CHELATOR KIT)

**with**

### 2) PDC – Sepharose™ 4 fast flow

**Sepharose™ 4 fast flow** is a high cross-linked 4% agarose :  
 Bead size range : 45-165 µm .  
 Exclusion limit : 3.10<sup>7</sup> daltons .  
 Flow rate range : 50-300 cm/h .

Product code	Product name	Package	*Price in EUR
<b>PDC-4FF KIT</b> for first attempts of purification	Pentadentate chelator kit <i>ready-to-use</i>  with  <b>PDC-Sepharose™ 4 fast flow</b>	<b>Columns</b> - 1 ml <b>Cu-PDC-4FF</b> column - 1 ml <b>Ni-PDC-4FF</b> column - 1 ml <b>Zn-PDC-4FF</b> column - 1 ml <b>Co-PDC-4FF</b> column  <b>Buffers</b> - 2x 100 ml of Buffer A - 2x 100 ml of Buffer B  - 1x 100 ml of buffer E - 1x 100 ml of buffer F	567.09
	Once the most appropriate column is selected, the optimization of the chromatography conditions can be performed	<b>Resin</b> - 1x 25 ml of <b>PDC-Sepharose™ 4 fast flow</b> free of Metal ions (Code : <b>free PDC-4FF</b> )	
*All prices are FOB Liège Bulk quantities are available Delivery in Belgium : franco if orders > 247.89 EUR.			2007 - 2008
<p style="text-align: center;">             For scale-up of the purification              please see PDC-Matrix              (Pentadentate chelator-Matrix)               I.M.A.C.              (Immobilized Metal ion Affinity Chromatography),              this catalogue.           </p>			

## PDC KIT - ORDERING INFORMATION

2/2

### PDC KIT

(PENTADENTATE CHELATOR KIT)

with

3) PDC – Sepharose™ CL-4B

**Sepharose™ CL-4B** is a cross-linked 4% agarose :  
 Bead size range : 45-165 µm .  
 Exclusion limit : 2.10<sup>7</sup> daltons .

Product code	Product name	Package	*Price in EUR
<b>PDC-4S KIT</b>	Pentadentate chelator kit <i>ready-to-use</i>  with  <b>PDC- Sepharose™ CL-4B</b>	<b>Columns</b> - 1 ml <b>Cu-PDC-4S</b> column - 1 ml <b>Ni-PDC-4S</b> column - 1 ml <b>Zn-PDC-4S</b> column - 1 ml <b>Co-PDC-4S</b> column  <b>Buffers</b> - 100 ml x 2 of buffer A - 100 ml x 2 of buffer B  - 100 ml of buffer E - 100 ml of buffer F  <b>Resin</b> 25 ml of <b>PDC- Sepharose™ CL-4B</b> free of Metal ions (Code : <b>PDC-S free</b> )	<b>405.00</b>
*All prices are FOB Liège Bulk quantities are available Delivery in Belgium : franco if orders > 247.89 EUR.			<b>2007 - 2008</b>
Please see also PDC-Matrix (Pentadentate chelator-Matrix) for I.M.A.C. (Immobilized Metal ion Affinity Chromatography), this catalogue.			

## IgG immobilization kit

Easy-to-use

For rapid antigen purification by immunoaffinity chromatography  
(See details, this catalogue)

using

- **Activated Protein A like column, ready-to-use**
- Matrix : **Sepharose™ CL-4B** (a cross-linked 4% agarose) .  
and/or **Sepharose™ 4Fast Flow** (a high cross-linked 4% agarose) .  
and/or **Streamline™ Quartz Base Matrix** (a macroporous cross-linked 6% agarose containing a crystalline quartz core) .
- Immobilization capacity : 5-6 mg of mouse monoclonal IgG and 10-12 mg of polyclonal IgG and/or IgY from other animal species/ml of wet gel.
- **and**
- **Binding buffer & coupling buffer, ready-to-use**
- **Saturation reagent, ready-to-use**

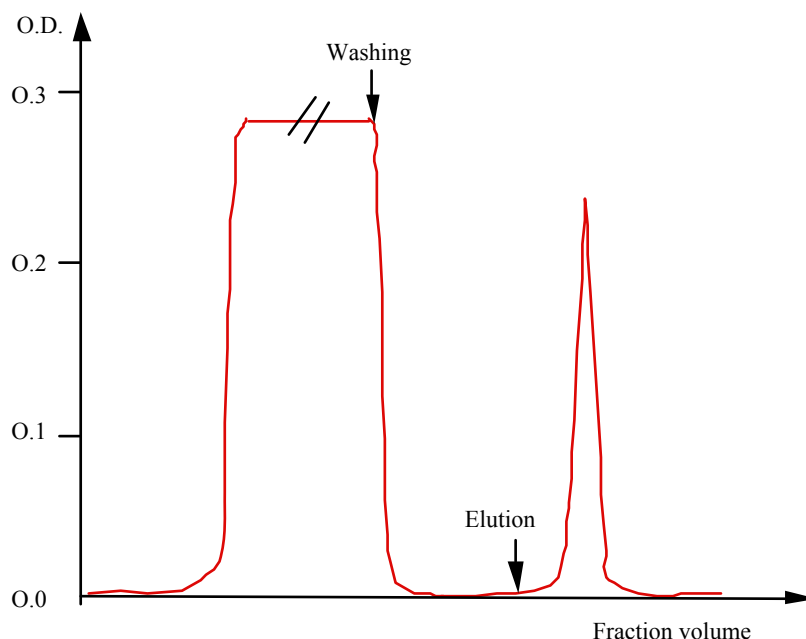
### PURIFICATION OF hTBG

By immunoaffinity chromatography  
with **IgG immobilization kit**

#### Immunoaffinity gel preparation

**Sample**  
**Binding & washing buffer**  
**Elution buffer**  
**Flow rate**  
**Regeneration buffer**

4 ml APAL-Matrix + 2 ml rabbit antisera anti hTBG +  
 4 ml binding & coupling buffer .  
 15 ml human pregnancy serum .  
 $K_2HPO_4$  50mM, NaCl 0.9% (w/v) pH 7.4 .  
 Glycine 0.1M pH 2.8 (with HCl 6N) .  
 20ml/cm<sup>2</sup>/hour for all operations .  
 Acetic acid 1M .



#### Results

1. 190 µg of hTBG in 2 mg of total proteins. hTBG was determined by RIA and total proteins by Lowry method.
2. Life time of the immunoaffinity gel with routine use: Minimum 6 cycles with no loss of binding capacity.
3. Similar experiments were realized with rabbit antisera to hCG, rabbit antisera to hSA, mouse anti hTg ascites fluid and mouse anti pSA ascites fluid. The antigen binding ratio was determined to be approx. 1:1 (Ab:Ag) in all cases.

## ORDERING INFORMATION

**Sepharose™ CL-4B** is a cross-linked 4% agarose :  
 Bead size range : 45-165 µm .  
 Exclusion limit :  $2 \cdot 10^7$  daltons .

**Sepharose™ 4 fast flow** is a high cross-linked 4% agarose :  
**Bead size range** : 45-165 µm .  
**Exclusion limit** :  $3 \cdot 10^7$  daltons .  
**Flow rate range** : 50-300 cm/h .

**Streamline™ Quartz Base Matrix** is a macroporous cross-linked 6% agarose containing a crystalline quartz core :  
**Bead size range** : 100-300 µm .  
**Flow rate range** : 200-300 cm/h .

Product code	Product name	Pre-packaged column	*Price in EUR
<b>APAL-M1</b>	<b>Activated Protein A like-Sepharose™ CL-4B</b>	3x 1 ml gel column	95.00
		5x 1 ml gel column	142.00
		10x 1 ml gel column	268.00
<b>APAL-M2</b>	<b>Activated Protein A like-Sepharose™ 4 Fast Flow</b>	3x 1 ml gel column	123.00
		5x 1 ml gel column	185.00
		10x 1 ml gel column	349.00
<b>APAL-M3</b>	<b>Activated Protein A like-Streamline™ Quartz Base Matrix</b>	3x 1 ml gel column	123.00
		5x 1 ml gel column	185.00
		10x 1 ml gel column	349.00
<b>BPAL</b>	<b>Binding &amp; Coupling buffer</b>	1,000 ml	60.00
<b>SRP</b>	<b>Saturation reagent</b>	1,000 ml	60.00
*All prices are FOB Liège Bulk quantities are available. Please inquire. Delivery in Belgium : franco if orders > 247.89 EUR.			<b>2007 - 2008</b>

## Sheep IgG purification kit

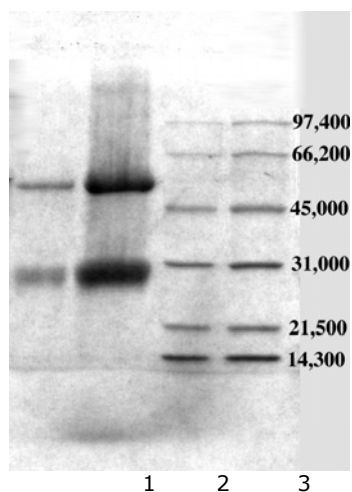
ready & easy-to-use

For rapid & economic purification of sheep IgG  
directly from the serum in a single step

using

- **Sheep IgG Binding Matrix**, ready-to-use
  - Matrix : **Sepharose™ CL-4B** (a cross-linked 4% agarose) .  
and/or **Sepharose™ 4 fast flow** (a high cross-linked 4% agarose) .
  - Binding capacity : Approx. 20 mg of Sheep IgG/ml of wet gel.
  - Stability of the gel : 4°C-30°C and pH 2-11.
  - The gel can be regenerated : Minimum 10 cycles without significant loss of binding capacity.
- **and**
  - **Sheep IgG Loading Buffer**, ready-to-use
  - **Sheep IgG Elution buffer**, ready-to-use

SDS-PAGE 12% in the presence of  $\beta$ -mercaptoethanol  
(Stained with Coomassie blue)



Lanes 1 & 2 : Sheep IgG purified by **Sheep IgG purification kit**  
Lanes 3 & 4 : Markers (14,300 ; 21,500 ; 31,000 ; 45,000 ; 66,200 & 97,400 daltons)



## ORDERING INFORMATION

Product Code	Product name	Package	*Price in EUR
SIK-4S	Sheep IgG Binding Sephacrose™ CL-4B (cross-linked 4% agarose) . Bead size range : 45-165 µm . Spacer arm : 12 atoms . Exclusion limit : 2.10 <sup>7</sup> daltons .	25 ml gel 50 ml gel 100 ml of gel 500 ml of gel	237.00 395.00 660.00 2365.00
SIK-4FF	Sheep IgG Binding Sephacrose™ 4 fast flow (high cross-linked 4% agarose) . Bead size range : 45-165 µm . Spacer arm : 12 atoms . Exclusion limit : 3.10 <sup>7</sup> daltons . Flow rate range : 50-300 cm/h .	25 ml gel 50 ml gel 100 ml of gel 500 ml of gel	308.00 513.00 854.00 3075.00
LBS	Sheep IgG Loading Buffer	1,000 ml 5,000 ml	60.00 170.00
EBS	Sheep IgG Elution Buffer	1,000 ml 5,000 ml	30.00 80.00
*All prices are FOB Liège Bulk quantities are available. Please inquire. Delivery in Belgium : franco if orders > 247.89 EUR.		2007 - 2008	

**The INSTRUCTION FOR USE is provided with the products.**

## THIOPHILIC GEL or T-GEL\*

### easy-to-use

Protein A and Protein G are widely used at present for the purification of IgG from various animal species. However, the use of Protein A and Protein G presents certain inconveniences:

- These proteins are expensive.
- Protein A and Protein G do generally not bind IgM.
- The elution at acid pH results in a partial denaturation of IgG.
- These proteins do not recognize IgG from all animal species such as dog, chicken...

AFFILAND has developed a Thiophilic gel (T-Gel) which allows, in a single step, the purification of immunoglobulins from all animal species (IgG, IgA, IgM..., IgY) directly from serum, ascite fluid or egg yolk under mild conditions (pH 8.0, low salt concentration, elution at physiological pH)\*\*.

---

\* Thiophilic gel or T-Gel has been named by Porath; FEBS LETTERS , 185, 306-310 (1985).

\*\* TRÂN QUANG MINH, lecture at University of Liège, SART TILMAN 4000 LIEGE (BELGIUM): May 08, 1991; A. DARI, thèse de doctorat - University of Liège 1992.

---

## CHARACTERISTICS OF THE THIOPHILIC GEL or T-GEL

- **This matrix** contains thioether groups. The interactions of the immobilized thioether groups on the surface of the gel result in the formation of "pseudo S-S bridges" analogous to those present on the Fc fragment of immunoglobulins. These S-S structure interactions could explain the specific binding of immunoglobulins to the matrix.
- **The ligand** does not show any interactions with serum proteins other than immunoglobulins (plus traces of  $\alpha_2$ -macroglobulin which are easily removed on  $M^{2+}$ PDC-Agarose (See this catalogue). Of special interest is that no trace of serum albumin binding to the T-Gel can be detected.
- **The immunoglobulin capacity** of the T-Gel is between 10 and 22 mg/ml gel. This capacity was observed for all animal species studied to date.
- **The coating of mouse monoclonal IgG purified by AFFILAND T-gel shows negligible non-specific binding in IRMA (immunoradiometric assay).**
- The gel can be easily regenerated.
- The gel can be reused at least 10 times without significant loss of binding capacity.
- Stability of the gel: at 20°C for minimum a week; pH 2-10.
- Shelf life of the gel: several years if stored at 4°C.
- Storage: 4°C in PBS 50 mM pH 7.4;  $NaNO_3$  0.02% (w/v).

### IgG CAPACITY OF THE THIOPHILIC GEL or T-GEL when using $(NH_4)_2SO_4$ 0.9M pH 8.0 (with NaOH 2M) as binding buffer

Animal serum (or other sources)	IgG capacity in mg per ml of resin	%Purity by SDS-PAGE
Calf, cow	20	95
Chicken & Turkey	( IgY ) 16	95
Dog	12	90
Horse	20	95
Human	11	90
Goat	15	95
Guinea-pig	ND	85
Monkey	12	90
Mouse monoclonal antibodies	6-10	85-95
Pig	14	95
Rabbit	13	95
Channichthys rhinocerus	( IgM ) N.D	80

## ORDERING INFORMATION

**Sepharose™ CL-4B** is a cross-linked 4% agarose :

Bead size range : 45-165 µm .

Exclusion limit :  $2 \cdot 10^7$  daltons .

**Sepharose™ 4 fast flow** is a high cross-linked 4% agarose :

**Bead size range** : 45-165 µm .

**Exclusion limit** :  $3 \cdot 10^7$  daltons .

**Flow rate range** : 50-300 cm/h .

Product code	Product name	Package	*Price in EUR
T-56-4S	T-Gel on Sepharose™ CL-4B	25 ml gel	245.00
		50 ml gel	409.00
		100 ml of gel	682.00
		500 ml of gel	2455.00
T-56-4FF	T- Gel on Sepharose™ 4 fast flow	25 ml gel	320.00
		50 ml gel	532.00
		100 ml of gel	886.00
		500 ml of gel	3190.00
*All prices are FOB Liège Bulk quantities are available. Please inquire. Delivery in Belgium : franco if orders > 250.00 EUR.			2007 - 2008

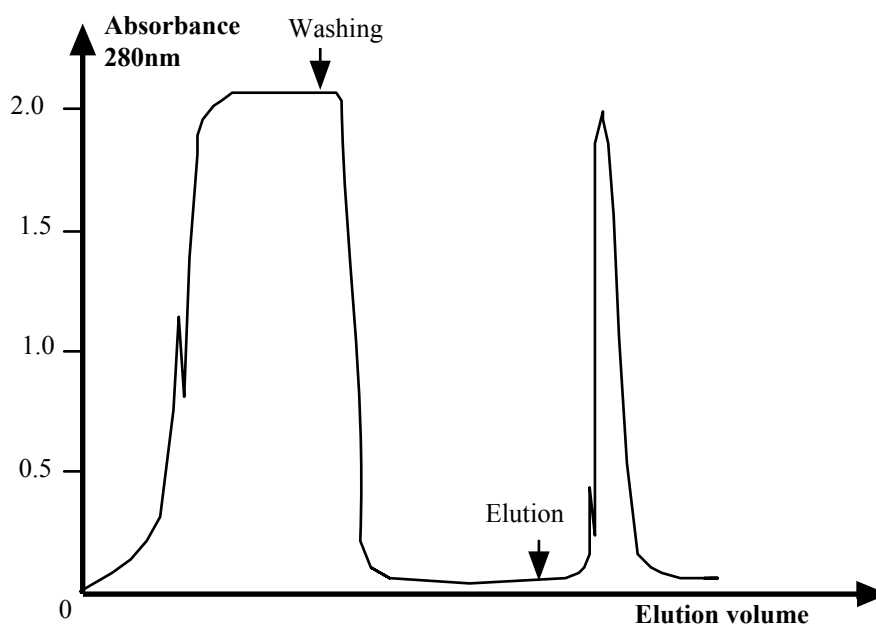
## INSTRUCTIONS FOR USE

### IMMUNOGLOBULIN PURIFICATION BY T-GEL

<b>Gel volume</b>	10 ml T-Gel (on Sepharose CL-4B or Sepharose fast flow).
<b>Sample<sup>1</sup></b>	50 ml serum from all animal species + loading buffer.
<b>Binding buffer</b>	(NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub> 0.9M pH 8.0 (with NaOH 1M) : buffer A.
<b>Flow rate</b>	40ml/cm <sup>2</sup> /hour for all operations.
<b>Washing buffer</b>	Buffer A.
<b>Elution buffer<sup>2</sup></b>	Tris.HCl 20mM pH 7.4.
<b>Regeneration buffer</b>	NaOH 0.1M.

<sup>1</sup>The sample can be also the ascites fluid or culture medium.

<sup>2</sup>The elution can be also realized with a buffer of your choice.

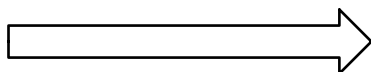


- IgG, IgA and IgM are retained at Fc region by T-GEL.
- IgG is more retained than IgA and IgM, by T-GEL.
- Fab and Fab' are not retained by T-GEL<sup>3</sup>.

<sup>3</sup>Allan Lihme and Peter M.H. Heegaard; Analytical Biochemistry, 192, 64-69 (1991).

## APPLICATION

### COATING ON SOLID MATRIX OF MAb PURIFIED BY T-GEL



### hCG IRMA using STAR NUNC coated tubes

MAb anti hCG to be coated was purified by the T-GEL.

Coating conditions:

- 500 microliters per tube.
- Wash 3 times.

Pre-treatment of coated tubes: Dried at room temperature for 24 hours.

Series 1: With coated tubes stored at 4°C.

Series 2: With coated tubes incubated at 37°C for 7 days.

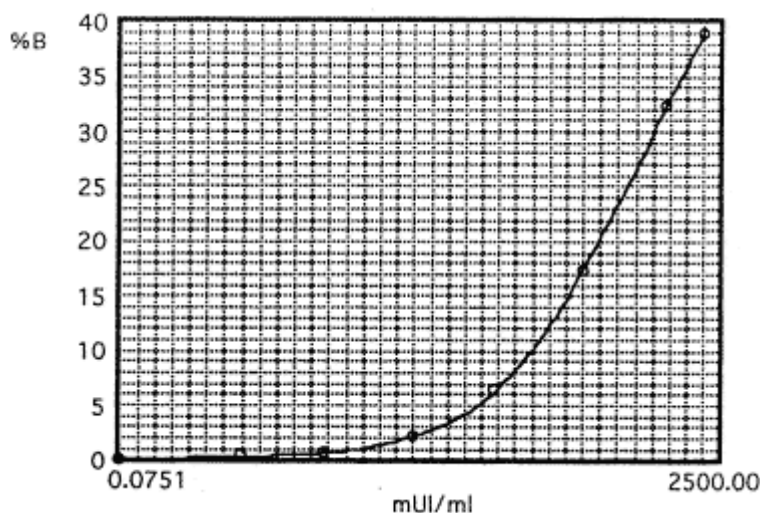
Testing conditions:

- 50 microliters of known or unknown sample + 100 microliters of I-125 MAb anti hCG.
- Shake 1 hour at room temperature.
- Wash 2 times.

25 Jun 92 14:57

Protocol: 56

**hCG IRMA**  
**(coated tubes stored at 4°C)**  
**MAB coated concentration: 15 µg/ml**  
**(7.5 µg per STAR NUNC tube)**



STD	Total : 224207 cpm	CPM	DEFINED DOSE	%B/F	CALC. DOSE	% DIFF
1		197	0.07512	0.09	0.07512	0.00
2		858	5.00000	0.38	5.02335	0.47
3		1556	15.00000	0.69	14.99924	-0.01
4		4997	50.00000	2.23	50.00920	0.02
5		14189	150.00000	6.33	149.95681	-0.03
6		39002	500.00000	17.40	495.16919	-0.97
7		72217	1500.00000	32.21	1509.7629	0.65
8		87288	2500.00000	38.93	2499.0245	-0.04

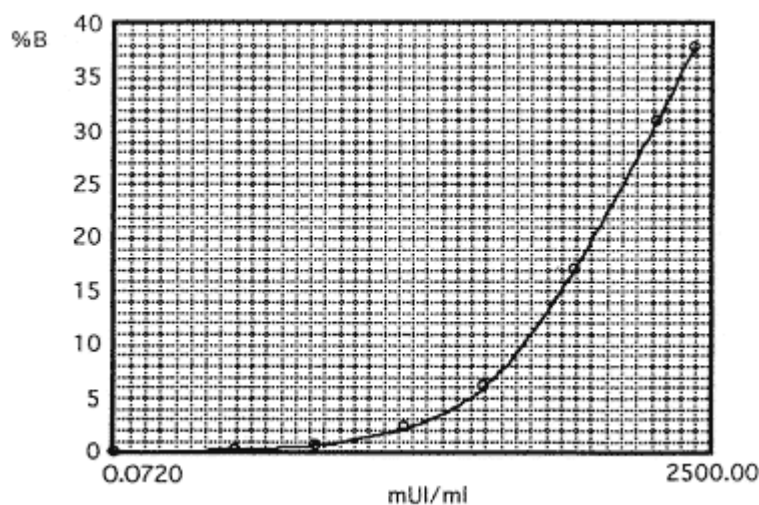
Curve fit: SPLINE Corr. Coef.: 1.0000 Det. Limit: 0.0751 %NSB/Total: 0.0879 ED20: 610.73 %Sigma Std.: 3.4109 RMS: 116.068 Smoothing F: 0.25000	Transform X: LOG  ED50: 5769.3 OFF CURVE	Transform Y: NONE Slope Para. Coef.: 0.9861 %Ref/Total: 38.932 ED80: 55693 OFF CURVE  Iterations: 1 Infl.Pt.: 1148.43
---	--	--

25 Jun 92

15:00

Protocol: 56

**hCG IRMA**  
**(coated tubes stored at 4°C)**  
**MAB coated concentration: 7.5 µg/ml**  
**(3.75 µg per STAR NUNC tube)**



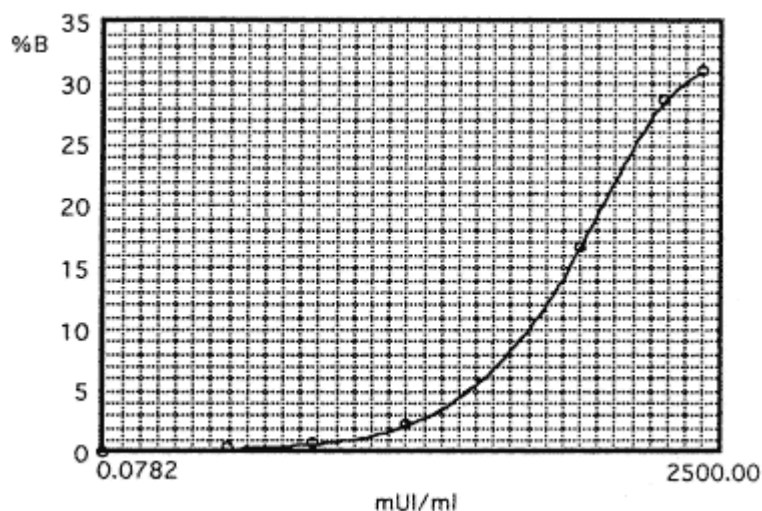
<b>STD</b>	<b>Total : 225762 cpm</b> <b>CPM</b>	<b>DEFINED DOSE</b>	<b>%B/F</b>	<b>CALC. DOSE</b>	<b>% DIFF</b>
1	128	0.07199	0.06	0.07199	0.00
2	684	5.00000	0.30	5.00131	0.03
3	1556	15.00000	0.69	14.99972	0.00
4	5112	50.00000	2.26	50.56020	1.12
5	14012	150.00000	6.21	149.43322	-0.38
6	38716	500.00000	17.15	500.93387	0.19
7	70115	1500.00000	31.06	1519.0643	1.27
8	85330	2500.00000	37.80	2522.0949	0.88

Curve fit: SPLINE Corr. Coef.: 1.0000 Det. Limit: 0.0720 %NSB/Total: 0.0567 ED20: 638.77 %Sigma Std.: 5.0710 RMS: 165.719 Smoothing F: 0.25000	Transform X: LOG  ED50: 6301.0 OFF CURVE	Transform Y: NONE Slope Para. Coef.: 0.9864 %Ref/Total: 37.796 ED80: 59833 OFF CURVE  Iterations: 1 Infl.Pt.:
---	--	--

01 Jul 92                      10:46

Protocol: 56

**hCG IRMA**  
**(coated tubes stored at 37°C for 7 days)**  
**MAB coated concentration: 15 µg/ml**  
**(7.5 µg per STAR NUNC tube)**



STD	Total : 208247 cpm CPM	DEFINED DOSE	%B/F	CALC. DOSE	% DIFF
1	47	0.07824	0.07	0.07824	0.00
2	696	5.00000	0.33	5.00001	0.00
3	1429	15.00000	0.69	15.00014	0.00
4	4513	50.00000	2.17	50.00000	0.00
5	34496	500.00000	16.57	499.03947	-0.19
6	59376	1500.00000	28.51	1551.0698	3.40
7	64442	2500.00000	30.95	2132.2401	-14.71

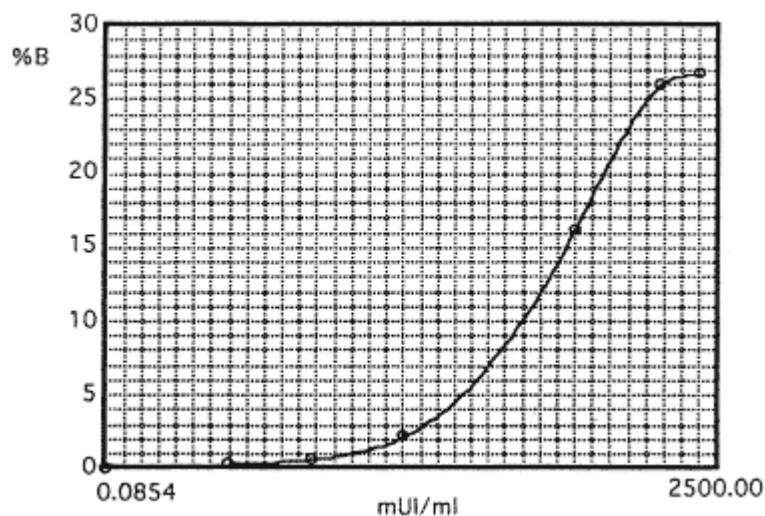
Curve fit: SPLINE Corr. Coef.: 0.9942 Det. Limit: 0.0782 %NSB/Total: 0.0707 ED20: 683.88 %Sigma Std.: 12.9019 RMS: 897.751 Smoothing F: 0.25000	Transform X: LOG  ED50: 34016 OFF CURVE	Transform Y: NONE Slope Para. Coef.: 0.9961 %Ref/Total: 30.945 ED80: ***** OFF CURVE  Iterations: 1 Infl.Pt.: 740.760
--	---	--



01 Jul 92                      10:48

Protocol: 56

**hCG IRMA**  
**(coated tubes stored at 37°C for 7 days)**  
**MAb coated concentration: 7.5 µg/ml**  
**(3.75 µg per STAR NUNC tube)**



STD	Total : 208694 cpm CPM	DEFINED DOSE	%B/F	CALC. DOSE	% DIFF
1	132	0.08538	0.07	0.08538	0.00
2	607	5.00000	0.29	5.00005	0.00
3	1364	15.00000	0.65	15.00132	0.01
4	4516	50.00000	2.16	49.99697	-0.01
5	33649	500.00000	16.12	499.46383	-0.11
6	54038	1500.00000	25.89	1576.2160	5.08
7	55805	2500.00000	26.74	2486.5585	-0.54

Curve fit: SPLINE Corr. Coef.: 0.9996 Det. Limit: 0.0854 %NSB/Total: 0.0632 ED20: 730.69 %Sigma Std.: 2.6417 RMS: 158.502 Smoothing F: 0.25000	Transform X: LOG  ED50: 5769.3 OFF CURVE	Transform Y: NONE Slope Para. Coef.: 0.9999 %Ref/Total: 26.740 ED80: OFF CURVE  Iterations: 1 Infl.Pt.: 627.507
---	--	--

## Activated PROTEIN A LIKE – MATRIX or APAL-M1 KIT for IgM, IgY...IMMOBILIZATION

ready & easy-to-use

It is not difficult to immobilize a protein on a solid support using any classic activation method such as the cyanogen bromide or N-hydroxysuccinimidylcarboxylate...However, if the protein of interest is a specific IgG, its biological activity will be affected if not entirely lost after the covalent linkage between the solid support with the terminal H<sub>2</sub>N of the IgG, IgM, IgY...

AFFILAND has developed the **Activated Protein A like-Matrix** useful for the covalent immobilization of IgG on the Fc portion, leaving free the Fab : ***the biological properties of the specific IgG will be conserved.***

### CHARACTERISTICS OF THE MATRIX

**Matrix :** **Sepharose™ 4 fast flow** (a high cross-linked 4% agarose) .

**Ligand:** PROTEIN A LIKE which has a specific binding for the Fc of immunoglobulins. It does not recognize serum albumin or serum proteins other than immunoglobulins.

**Rapid formation of a stable complex between the ligand and the Fc portion of IgG from all animal species, in the binding & coupling buffer, followed by an immediate covalent linkage between the Activated gel and the Fc portion, leaving free the Fab of IgG.**

**Easily realized in a column or in a batch.**

**Sample :** can be either the antisera, ascites fluid, extract containing antibodies or purified IgG...

**Stability of the gel :** pH 6-9.

**Shelf life of the gel :** one year after delivery when stored at 4°C.

**Storage :** 4°C in PBS 50mM pH 7.4; NaN<sub>3</sub> 0.02% (w/v).

### RESULTS

Easy recovery of the antibody immobilized on the matrix in a record time of 30 minutes maximum. The capacity of the obtained affinity matrix may be 5-6 mg of mouse monoclonal IgG or 10-12 mg of polyclonal IgG of other animal species, per ml of matrix.

### APPLICATIONS

- Purification of antigens by immunoaffinity chromatography.
- Easy preparation of serum free of antigen.
- Radio or enzyme immunoassay.

## ORDERING INFORMATION

**Sepharose™ 4 fast flow** is a high cross-linked 4% agarose :

**Bead size range** : 45-165 µm .

**Exclusion limit** :  $3 \cdot 10^7$  daltons .

**Flow rate range** : 50-300 cm/h .

Product code		Product name	Package	*Price in EUR
APAL-M1 KIT	APAL-M1	Activated Protein A – Sepharose™ fast flow column (for APAL-M1 KIT).	3 x 1 ml gel column	250.00
	BPAL-M1	Binding & Coupling buffer (for APAL-M1 KIT).	500 ml	
	SRPL-M1	Saturation reagent (for APAL-M1 KIT).	50 ml	
*All prices are FOB Liège Bulk quantities are available. Please inquire. Delivery in Belgium : franco if orders > 247.89 EUR.			2007 - 2008	

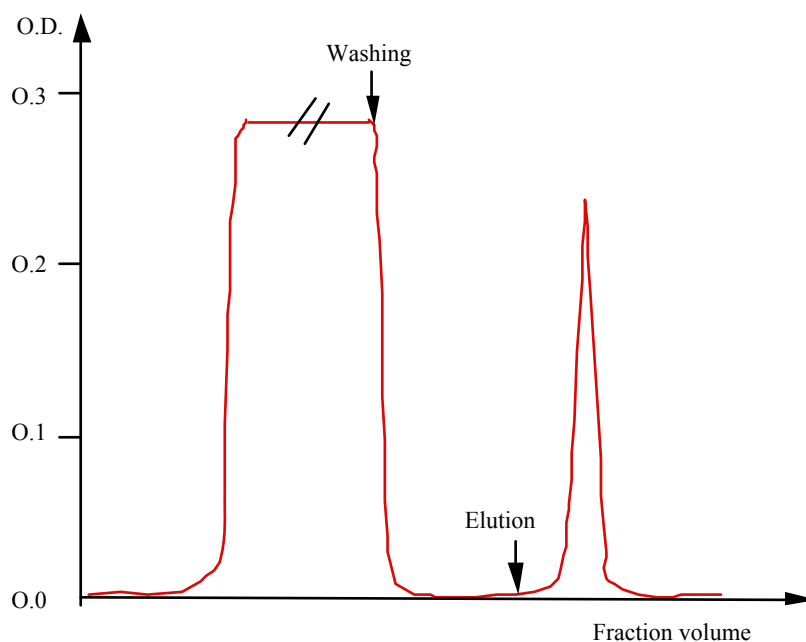
INSTRUCTIONS FOR USE WILL BE PROVIDED WITH THE KIT

## PURIFICATION OF hTBG (Thyroxine binding globulin, human) by immunoaffinity chromatography with ACTIVATED PROTEIN A LIKE-MATRIX

### IMMUNOAFFINITY GEL PREPARATION

SAMPLE  
 BINDING & WASHING BUFFER  
 ELUTION BUFFER  
 FLOW RATE  
 REGENERATION BUFFER

4 ml APAL-M1 + (2 ml rabbit antisera anti hTBG + 4 ml binding & coupling buffer) - see INSTRUCTION FOR USE .  
 15 ml human pregnancy serum .  
 $K_2HPO_4$  50mM, NaCl 0.9% (w/v) pH 7.4 .  
 Glycine 0.1M pH 2.8 (with HCl 6N) .  
 20ml/cm<sup>2</sup>/hour for all operations .  
 Acetic acid 1M .

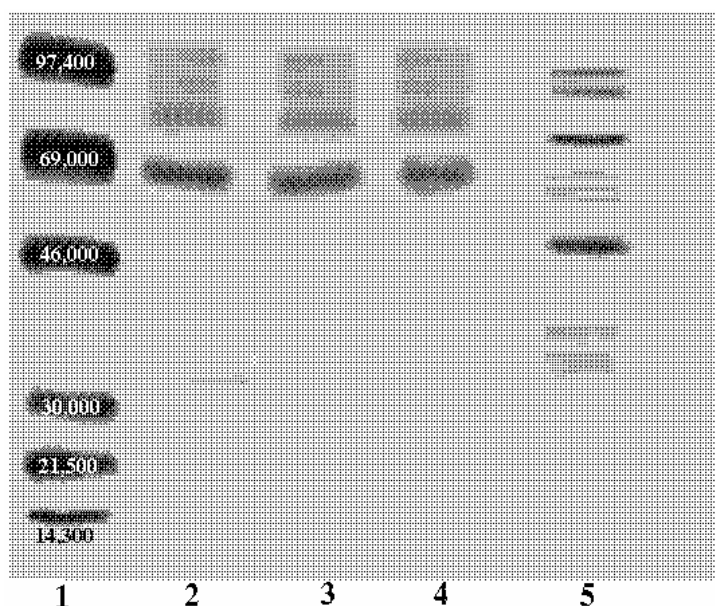


### Results

1. 190 µg of hTBG in 2 mg of total proteins.  
hTBG was determined by RIA and total proteins by Lowry method.
2. Life time of the immunoaffinity gel with routine use: Minimum 6 cycles with no loss of binding capacity.

Similar experiments were realized with rabbit antisera to hCG, rabbit antisera to hSA, mouse anti hTg ascites fluid and mouse anti pSA ascites fluid. The antigen binding ratio was determined to be approx. 1:1 (Ab:Ag) in all cases.

SDS-PAGE 5-25%  
 in the presence of  $\beta$ -mercaptoethanol  
 Stained with Coomassie Blue



1. Markers; 2. pSA (1st cycle); 3. pSA (2nd cycle); 4. pSA (6th cycle) and 5. hTBG

## p-AMINOBENZAMIDINE - MATRIX

### CHARACTERISTICS

**Matrix :** **Sepharose™ 4 fast flow** (a high cross-linked 4% agarose) .  
**Activation method :** Oxiran.  
**Binding capacity :** Approx. 10 mg of trypsin per ml of wet matrix.  
**Packing :** Suspension in PBS 50mM pH 7.4; NaN<sub>3</sub> 0.02% (w/v).  
**Shelf life of the gel :** 12 months after delivery when stored at 4°C.  
**Storage :** 4°C.

### ORDERING INFORMATION

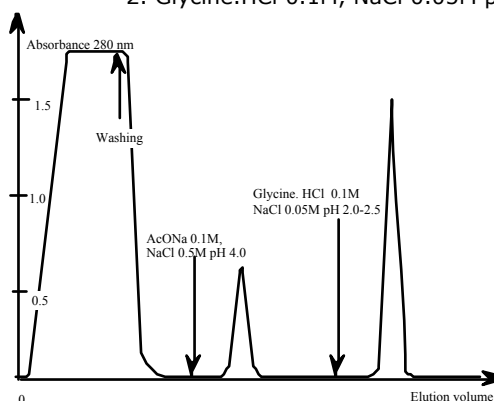
**Sepharose™ 4 fast flow** is a high cross-linked 4% agarose :  
**Bead size range :** 45-165 µm .  
**Exclusion limit :** 3.10<sup>7</sup> daltons .  
**Flow rate range :** 50-300 cm/h .

Product code	Product name	Package	*Price in EUR
BEN46-4FF	p-Aminobenzamidine-Sepharose™ 4 fast flow	25 ml	205.00
		50 ml	350.00
		100 ml	620.00
*All prices are FOB Liège Bulk quantities are available Delivery in Belgium : franco if orders > 247.89 EUR.			2007 - 2008

### INSTRUCTION FOR USE

(Trypsin purification\*)

**Important note:** All operations were carried out at 0°C-4°C.  
**Gel volume** 25 ml p-Aminobenzamidine-Matrix  
**Sample** Extract of human or sheep pancreas, dialysed against the buffer A (see below).  
**Flow rate** 30 ml/cm<sup>2</sup>/hour for loading and washing  
 50 ml/ cm<sup>2</sup>/hour for elution.  
**Binding and washing buffer** Tris.HCl 0.1M, NaCl 0.5M pH 8.0 (buffer A).  
**Elution buffer** 1. AcONa 0.1M, NaCl 0.5M pH 4.0.  
 2. Glycine.HCl 0.1M, NaCl 0.05M pH 2.0-2.5.



By kind personal communication of Dr. DEBY-DUPONT,  
 Laboratory of Biochemistry and Radiobiology - University of Liège (Belgium).

## BLUE - AGAROSE

### CHARACTERISTICS OF THE GEL

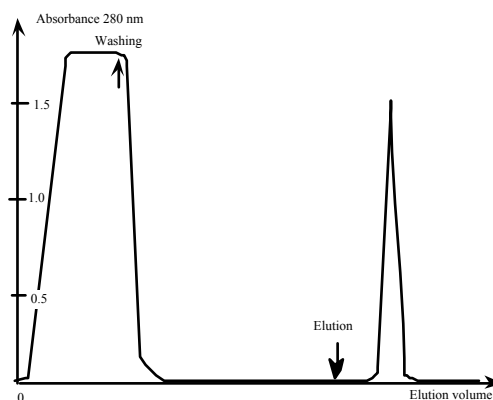
Matrix	<b>Sephacrose™ CL-4B</b> (a cross-linked 4% agarose) :
	Bead size range : 45-165 $\mu\text{m}$ .
	Exclusion limit : $2.10^7$ daltons .
	Oxiran.
<b>Activation method</b>	Cibacron Blue <sup>R</sup> .
<b>Ligand</b>	Approx. 20 mg of HSA per ml of wet gel.
<b>Binding capacity</b>	Suspension in PBS 50mM pH 7.4; $\text{NaN}_3$ 0.02% (w/v).
<b>Packing</b>	pH 2-11.
<b>Stability of the gel</b>	More than 10 cycles without significant loss of binding capacity.
<b>Life time of the gel with routine use</b>	Several years if stored at 4°C.
<b>Shelf life of the gel</b>	4°C.
<b>Storage</b>	

### ORDERING INFORMATION

Product code	Product name	Package	*Price in EUR
BLU48	Blue - Cross-linked 4% agarose	100 ml	180.00
		500 ml	800.00
		1000 ml	1200.00
*All prices are FOB Liège Bulk quantities are available Delivery in Belgium : franco if orders > 247.89 EUR.			2007 - 2008

### INSTRUCTIONS FOR USE (Albumin purification)

<b>Gel volume</b>	100 ml Blue-Agarose.
<b>Sample</b>	100 ml human serum.
<b>Flow rate</b>	50 ml/cm <sup>2</sup> /hour for all operations.
<b>Binding and washing buffer</b>	PBS 50mM pH 8.0 (buffer A) or TBS 50mM pH 8.0 (buffer B).
<b>Elution buffer</b>	Buffer A or buffer B containing 1.5M NaCl.
<b>Regeneration</b>	With 5 vol. of distilled water then with 5 vol. of NaCl 2M and finally with 5 vol. of distilled water and 3 vol. of binding buffer.
<b>Storage</b>	4°C in the presence of $\text{NaN}_3$ 0.1% (w/v).



Cibacron Blue<sup>R</sup> : Trade mark of Ciba Geigy

## GELATIN-AGAROSE

### CHARACTERISTICS OF THE GEL

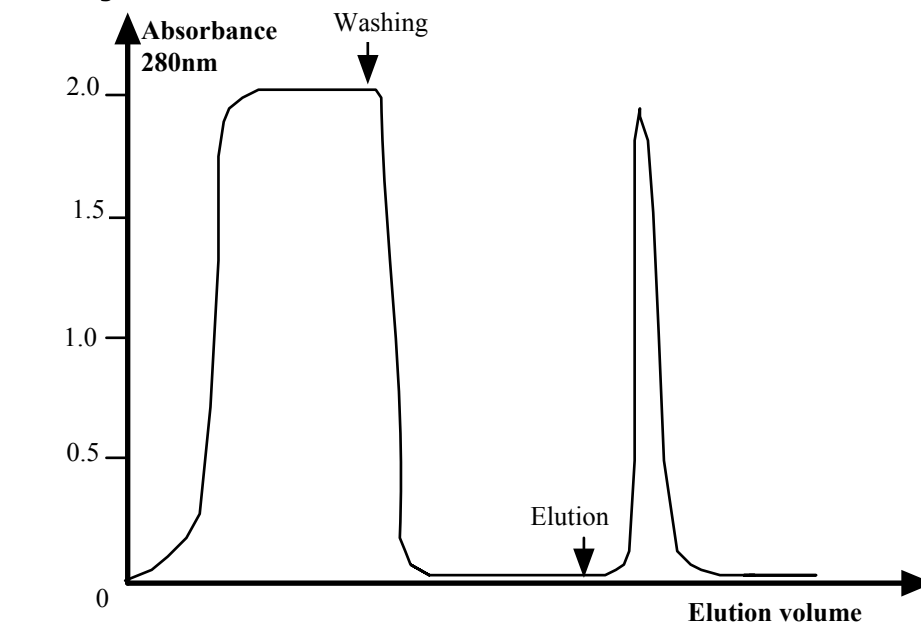
<b>Matrix</b>	<b>Sephacrose™ CL-4B</b> (a cross-linked 4% agarose) : Bead size range : 45-165 µm . Exclusion limit : $2 \cdot 10^7$ daltons . 17 atoms.
<b>Spacer arm :</b>	
<b>Binding capacity :</b>	>1 mg of human fibronectin per ml of wet gel. <b>Fibronectin highly purified in a single step.</b>
<b>Stability of the matrix :</b>	20°C for days or a week.
<b>Shelf life of the matrix :</b>	one year after delivery when stored at 4°C.
<b>Storage :</b>	4°C in PBS 50mM pH 7.4; NaN <sub>3</sub> 0.1% (w/v).

### ORDERING INFORMATION

Product code	Product name	Package	*Price in EUR
<b>GEL39-4FF</b>	<b>Gelatin – Sepharose 4 fast flow</b>	25 ml 100 ml 500 ml	200.00 700.00 2000.00
*All prices are FOB Liège Bulk quantities are available Delivery in Belgium : franco if orders > 247.89 EUR.			<b>2007 - 2008</b>

### INSTRUCTION FOR USE (Fibronectin purification)

<b>Gel volume</b>	5 ml GELATIN - AGAROSE .
<b>Sample</b>	100 ml Citrated plasma from all animal species.
<b>Binding and washing buffer</b>	K <sub>2</sub> HPO <sub>4</sub> 50mM, NaCl 0.9% (w/v) pH 7.4.
<b>Elution buffer</b>	Sodium acetate 50mM, NaBr 1M pH 5.0.
<b>The gel can be regenerated .</b>	



**GELATINASE PURIFICATION** - Chen J.M. et al; J. Biol. Chem. 266, 5113-5121 (1991) .



## GLUTATHIONE - MATRIX

### CHARACTERISTICS OF THE GELS

**Matrix :** **Sepharose™ CL-4B** (a cross-linked 4% agarose) .  
 and/or **Sepharose™ 4 fast flow** (a high cross-linked 4% agarose) .  
**Attachment :** Through the sulfur of glutathione.  
**Binding capacity :** Approx. 5–6 mg bovine liver GST (glutathione S-transferase) .  
**Stability of the matrix :** pH 2–11.  
**Shelf life of the matrix :** Several years, if stored at 4°C in the presence of NaN<sub>3</sub> 0.02% (w/v) .  
**Life time of the matrix** The matrix can be regenerated :  
**with routine use :** Approx. 10 cycles without significant loss of binding capacity .  
**Storage :** 4°C in PBS pH 7.4; NaN<sub>3</sub> 0.02% (w/v) .

### ORDERING INFORMATION

Product code	Product name	Package	*Price in EUR
GLU17-4S	Glutathione – Sepharose™CL-4B	10 ml	132.00
		25 ml	263.00
		50 ml	395.00
		100 ml	660.00
GLU17-4FF	Glutathione – Sepharose™ 4 fast flow	10 ml	171.00
		50 ml	515.00
		100 ml	855.00
GLU17-SLQ	Glutathione – Streamline™ Quartz Base	10 ml	171.00
		50 ml	515.00
		100 ml	855.00
*All prices are FOB Liège Bulk quantities are available Delivery in Belgium : franco if orders > 247.89 EUR.			2007 - 2008

## INSTRUCTIONS FOR USE

### (Glutathione – Matrix)

#### Glutathione column preparation

1. De-gas the matrix when using more than 25 ml of gel.
2. Pour the gel into a glass column with a frit of porosity P.0 or P.1.
3. Equilibrate the column with 5x volume of PBS (phosphate buffered saline) 0.1M, NaCl 0.15M pH 7.4.
4. If the protein extract contains detergent such as Triton X-100 1% (v/v), wash the column with 5x volume of PBS containing this detergent. If not, neglect the point 4.
5. The column is ready-to-use.

#### Glutathione S-transferase containing protein purification

1. Apply the clarified sample to the column at a flow rate of 30 ml/cm<sup>2</sup>/hour.
2. Wash the column with the PBS pH 7.4 buffer, until the O.D. at 280nm of the eluent falls to the baseline level (approx. 5x volume).
3. Elute the bound protein (containing glutathione S-transferase) with the PBS buffer pH 7.4 or TBS buffer pH 7.4 containing 5-10mM glutathione, until the O.D. at 280nm of the eluent falls to the baseline level (TBS : Tris buffer saline : 50mM, NaCl 0.15M).

#### Gel regeneration

1. Wash the column with 3x volume of PBS buffer pH 7.4.
2. Wash the column with 5x volume of PBS buffer pH 7.4 containing NaCl 2M.
3. Wash the column with 5x volume of distilled water.
4. Equilibrate the column with 3x volume of PBS buffer pH 7.4.
5. Storage : 4°C in the presence of NaN<sub>3</sub> 0.1% (w/v).

## IMINODIACETIC ACID - MATRIX

### Application references:

- 1) Zn(II) dependence of the Aeromonas hydrophyla AE036 Metallo  $\beta$ -lactamase Activity and Stability ; Maria Hernandez Valladares et al. ; Biochemistry, **36**, 11534-11541 (1997).
- 2) Characterization and sequence of the Chryseobacterium (flavobacterium) meningosepticum carbapenemase : a new molecular class B beta-lactamase showing a broad substrate profile ; Rossolini GM et al. ; Biochem. J., **332**, 145-152 (1998).
- 3) Mono- and binuclear Zn(II) beta-lactamase, role of the conserved cystein in the catalytic mechanism; Raquel Paul-Soto et al. ; J. Biol. Chem., **274**, 13242-13249 (1999).

### CHARACTERISTICS OF THE MATRIX

**Matrix :** **Sepharose™ CL-4B** (a cross-linked 4% agarose) .  
 and/or **Sepharose™ 4 fast flow** (a high cross-linked 4% agarose) .  
**Activation method :** Oxiran .  
**Binding capacity :** 45 micrograms of Cu<sup>2+</sup> atom-ion per ml of wet gel .  
**Stability of the gel :** pH 2-11.  
**Shelf life of the gel :** Several years, if stored at 4°C in the presence of NaN<sub>3</sub> 0.02% (w/v) .  
**Life time of the gel with routine use :** Approx. 20 cycles with no loss of binding capacity .  
**Storage :** 4°C in PBS pH 7.4; NaN<sub>3</sub> 0.02% (w/v) .

### ORDERING INFORMATION

Product code	Product name	Package	*Price in EUR
IDA15-S	Iminodiacetic acid – Sepharose™ CL-4B	100 ml	270.00
		500 ml	930.00
		1000 ml	1600.00
IDA15-4FF	Iminodiacetic acid – Sepharose™ 4 fast flow	100 ml	400.00
		500 ml	1400.00
		1000 ml	2400.00
*All prices are FOB Liège Bulk quantities are available Delivery in Belgium : franco if orders > 247.89 EUR.			2007 - 2008

## IMINODIACETIC ACID-MATRIX

\*\*\*

### INSTRUCTIONS FOR USE (Metal Chelating)

1. De-gas the IDA-matrix when using more than 25 ml of matrix.
2. Pour the matrix into a glass column with a frit of porosity P.1.
3. Wash the column with 10 volumes of distilled water.
4. Apply a bivalent or trivalent metal ion solution such as  $\text{Cu}^{2+}$ ,  $\text{Zn}^{2+}$ , ... at a concentration 5 mg/ml in distilled water, at a flow rate of 50 ml/cm<sup>2</sup>/hour, until saturation.
5. Wash the column with distilled water until the O.D at 280 nm of the eluent falls to the baseline level.
6. Equilibrate the column with the Tris 50mM, AcOH pH 8.0.
7. The obtained metal chelate affinity gels are ready-to-use.

**PDC**  
Pentadentate chelator  
and  
**PDC KIT**  
Pentadentate chelator kit

Ready and Easy-to-use

for

- 6xHis-tagged protein purification
- and/or Zn-protein purification in a single step.
- and/or for first attempts at general purification of proteins.

---

**Application references:**

1. **Biochem. J.**, **352**: 651-658 (2000) .
2. **Eur. J. Biochem.**, **268**: 1613-1619 (2001) ; **269**: 3531-3539 (2002) ; **269**: 4789-4798 (2002) .
3. **J. Bacteriol.**, **185**: 5925 - 5935 (2003) .
4. **J. Biol. Chem.**, **275**: 11147-11153 (2000) ; **275**: 25411-25417 (2000) ; **277**: 2413-2418 (2002) ; **278**: 10697 - 10706 (2003) ; **278**: 18817 - 18823 (2003) ; **278**: 30677 - 30685 (2003) .
5. **Protein Sci.**, **11**: 500-515 (2002) ; **11**: 1506-1518 (2002) .

---

NOW AVAILABLE :

**PDC – SEPHAROSE™ CL-4B**  
**PDC – SEPHAROSE™ 4 FAST FLOW**  
and  
**PDC – STREAMLINE™ QUARTZ BASE MATRIX**

**Sepharose™ CL-4B** is a cross-linked 4% agarose :

Bead size range : 45-165 µm .

Exclusion limit : 2.10<sup>7</sup> daltons .

**Sepharose™ 4 fast flow** is a high cross-linked 4% agarose :

**Bead size range** : 45-165 µm .

**Exclusion limit** : 3.10<sup>7</sup> daltons .

**Flow rate range** : 50-300 cm/h .

**Streamline™ Quartz Base Matrix** is a macroporous cross-linked 6% agarose containing a crystalline quartz core :

**Bead size range** : 100-300 µm .

**Flow rate range** : 200-300 cm/h .

## CHARACTERISTICS

The patented pentadentate chelator coupled to a matrix (PDC-Matrix) developed by AFFILAND, is capable of forming complexes with all polyvalent metal ions including  $\text{Cu}^{2+}$ ,  $\text{Ni}^{2+}$ ,  $\text{Zn}^{2+}$ , and  $\text{Co}^{2+}$ , to give

- an octahedral Metal ion-Chelator complex.
- with five coordination sites occupied by the chelator.

This results

- 1) in the best stability of the Metal ion-Chelator complex. No leakage of  $\text{Ni}^{2+}$ ,  $\text{Zn}^{2+}$  and  $\text{Co}^{2+}$  was observed during chromatography steps, including steps using chaotropic buffers such as guanidine hydrochloride 6M pH 8.0, urea 8M pH 8.0 or non-ionic detergents... Note that the guanidine hydrochloride 4M-6M tends to strip slowly the Cu-Chelator column if excessively used.
- 2) in one and only one site free for interaction and selective binding of accessible cysteine/histidine residues and chiefly histidine containing biomolecules.

In addition, PDC-Matrix has a high binding capacity :

- 35-40 micromoles of  $\text{M}^{2+}$  (M = Cu, Ni, Zn, Co) per milliliter of wet Matrix.
- 15-20 mg of 6x His-tagged HSP 60/ml of wet Zn-PDC Matrix.
- approx. 15 mg of human alpha-2-Macroglobulin/ml of wet Ni-PDC Matrix.  
and approx. 15 mg of Mutated triosephosphate isomerase/ml of wet Ni-PDC Matrix.
- Stability of the Matrix :
  - pH range 2-12
  - Several years at physiological pH if stored at 4°C.
- The Matrix can be regenerated : minimum 10 cycles without significant loss of binding capacity.

## I. 6xHis-tagged protein purification with PDC using PDC KIT

Most 6xHis-tagged protein purifications are performed with Metal chelate resins : some with Ni-NTA and others with Co chelated resins.

However, it is known now that

- 1) Some 6xHis-tagged proteins do not bind at all to Ni-NTA or Co-NTA resins. This is due to the non-accessibility of the polyhistidine tag.
- 2) The 6xHis-tagged proteins from E. Coli expression systems, purified by Ni-NTA resin for example, generally are contaminated by proteins of bacterial origin or by metal binding proteases.

Our PDC KIT consisting of four Metal chelate-Matrix (M-PDC) : Cu-PDC, Ni-PDC, Zn-PDC & Co-PDC ready-to-use prepacked in polypropylene columns, overcomes the problems cited above.

Effectively, while optimizing the purification of 6x His-tagged proteins, our PDC KIT allows

- The selection of the most appropriate metal chelate column in a primary screening.
- Then , the optimization of the conditions for a single step purification.
- And finally, the scale-up of the purification, if necessary.

## II. Zinc purification with PDC using PDC KIT

Our PDC KIT is also applicable for Zn protein purification while some such proteins bind to Zn chelate column and others do not.

## III. General purification of proteins with PDC using PDC KIT

- If the structure of the protein to be purified is known and if it contains one, two, three or more histidine residues, the PDC KIT can be used for a primary screening.
- Our PDC KIT can also be used as a group specific adsorbent that will separate proteins with accessible cysteine/histidine containing motifs from those that do not.

## APPLICATIONS

**PDC KIT** consists of :

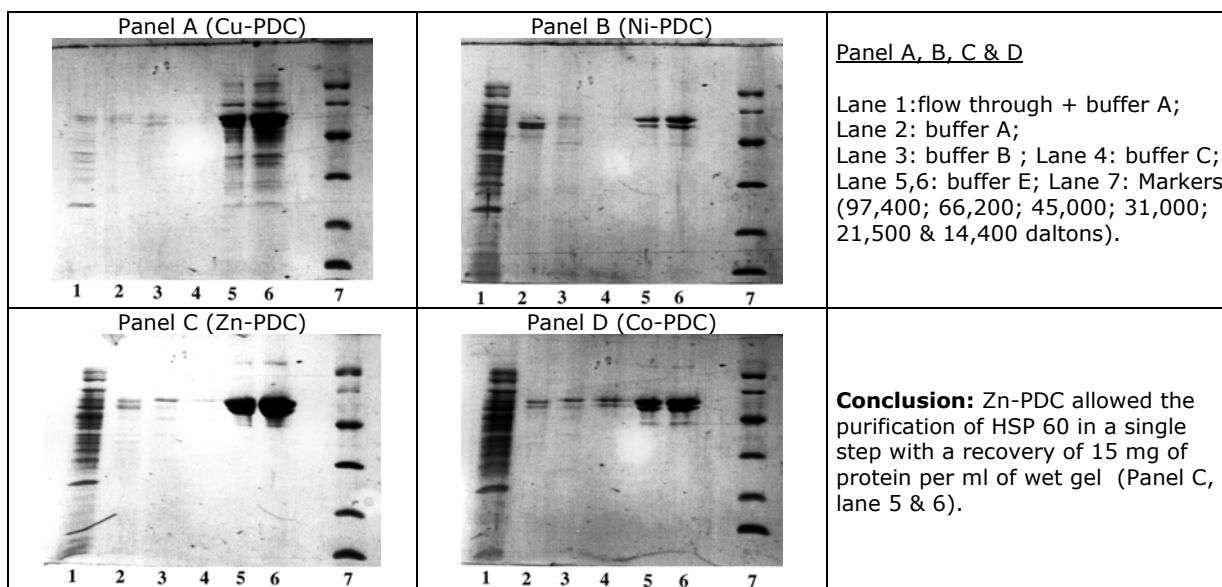
- Four polypropylene columns containing respectively 1 ml of Cu-PDC, 1 ml of Ni-PDC, 1 ml of Zn-PDC and 1 ml of Co-PDC Matrix.
- 100 ml x 2 of buffer A; 100 ml x 2 of buffer B.
- 100 ml of buffer E and 100 ml of buffer F.

### I. 6xHis-tagged protein screening with PDC KIT

Example 1 : The crude clarified lysate of 6x His-tagged HSP 60 from helicobacter pylori expressed in E. Coli was kindly supplied by E. Baise, Laboratoire de Biochimie B6, Sart Tilman 4000 Liège (Belgium).

Sample volume that was loaded onto each column : 500 microliters (conc. in HSP 60 : approx. 5 mg/ml).

SDS-PAGE 12% in the presence of  $\beta$ -mercaptoethanol  
(15 microliters of sample – stained with Coomassie blue)

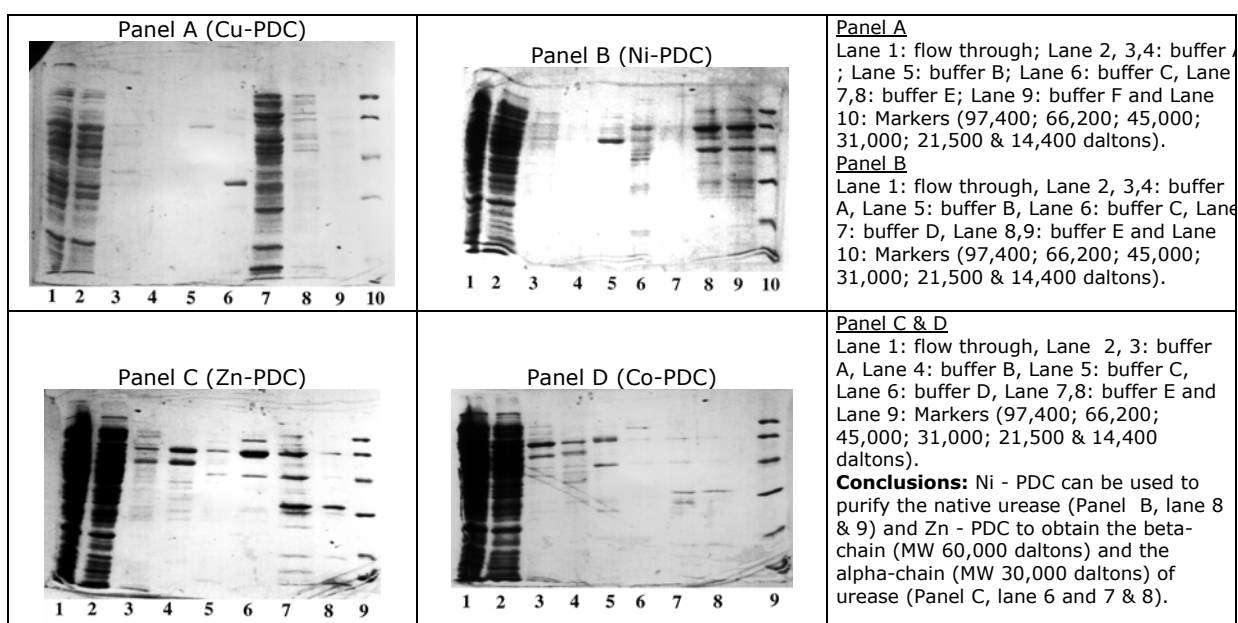




Example 2 : The crude clarified lysate of 6x His-tagged Urease from helicobacter pylori expressed in E. Coli was kindly supplied by J.M. François, Laboratoire de Biochimie B6, Sart Tilman 4000 Liège (Belgium).

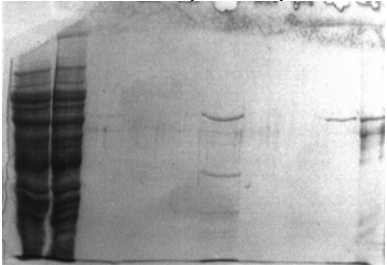
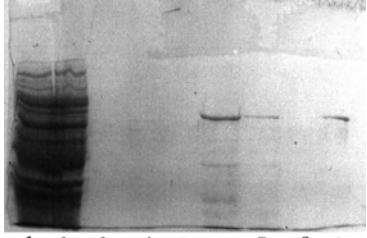
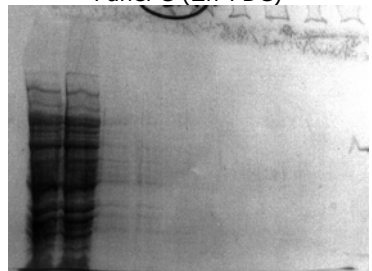
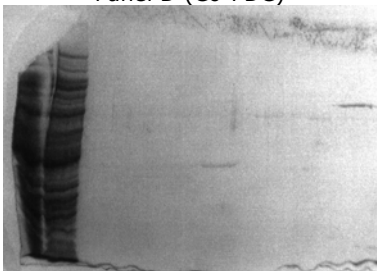
Sample volume that was loaded onto each column : 2 ml (conc. in urease : approx. 1 mg/ml).

SDS-PAGE 12% in the presence of  $\beta$ -mercaptoethanol  
(15 microliters of sample – stained with Coomassie blue)



Example 3 : The crude clarified lysate of 6x His-tagged Penicilin binding protein 5 MW= 70,000 daltons, expressed in E. Coli was kindly supplied by P. Partoune, Centre d'Ingénierie des Protéines, Institut de Chimie B6, Sart Tilman 4000 Liège (Belgium).  
 Sample volume that was loaded onto each column : 2 ml (conc. in PBP5 : approx. 0.1 mg/ml).

SDS-PAGE 12% in the presence of  $\beta$ -mercaptoethanol  
 (15 microliters of sample – stained with Coomassie blue)

<p style="text-align: center;">Panel A (Cu-PDC)</p>  <p style="text-align: center;">1 2 3 4 5 6 7 8 9</p>	<p style="text-align: center;">Panel B (Ni-PDC)</p>  <p style="text-align: center;">1 2 3 4 5 6 7 8 9</p>	<p><u>Panel A,B,C &amp; D</u></p> <p>Lane 1: crude supernatant; Lane 2: flow through + buffer A; Lane 3, 4: buffer B; Lane 5,6,7: buffer E; Lane 8: buffer F; Lane 9: reference (pure product MW 70,000 daltons ).</p>
<p style="text-align: center;">Panel C (Zn-PDC)</p>  <p style="text-align: center;">1 2 3 4 5 6 7 8 9</p>	<p style="text-align: center;">Panel D (Co-PDC)</p>  <p style="text-align: center;">1 2 3 4 5 6 7 8 9</p>	

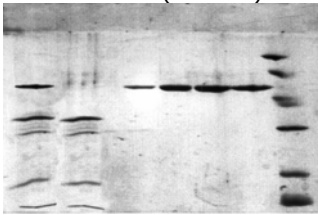
**Conclusion:** Ni - PDC is the best for this purification (Panel B, lane 6 & 7).

## II. Zn protein screening with PDC KIT

Example : The crude extract (redissolved ammonium sulfate precipitate) containing a mesophilic alkaline protease MW= 50,000 daltons (Zn protein) from *Pseudomonas aeruginosa* IFO 3455 was kindly supplied by J.P. Chessa and E. Planamente, Laboratoire de Biochimie, Institut de Biochimie B6, Sart Tilman 4000 Liège (Belgium).

Sample volume that was loaded onto each column : 1 ml (conc. in alkaline protease : approx. 1 mg/ml).

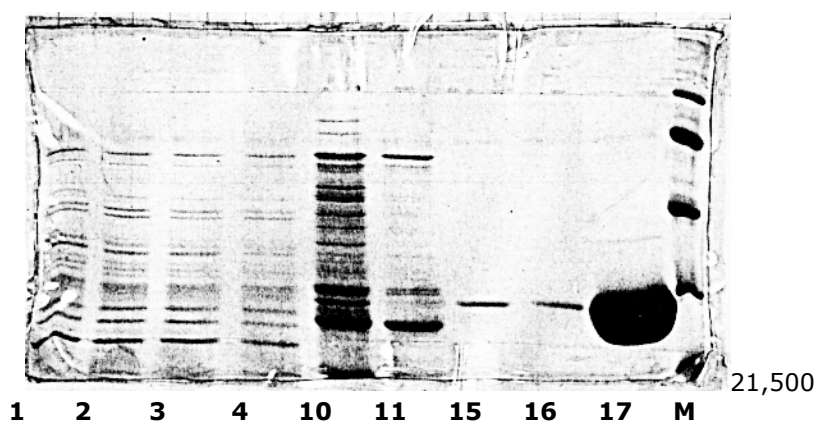
SDS-PAGE 12% in the presence of  $\beta$ -mercaptoethanol  
(15 microliters of sample – stained with Coomassie blue)

<p style="text-align: center;">Panel A (Cu-PDC)</p>  <p style="text-align: center;">1 2 3 4 5 6 7</p>	<p style="text-align: center;"><u>Panel A</u></p> <p>Lane 1:redissolved ammonium sulfate precipitate; Lane 2:buffer A ; Lane 3,4,5,6: buffer B; Lane 7:Markers: (97,400; 66,200; 45,000; 31,000; 21,500 &amp; 14,400 daltons).</p>
<p>Panel B (Ni-PDC); Panel C (Zn-PDC) &amp; Panel D (Co-PDC): not shown. No binding of the protein to Ni, Zn &amp; Co-PDC columns was observed.</p>	<p><b>Conclusion:</b> Cu-PDC was the only chelate gel allowing the purification of this protease in a single step (Panel A, lane 4,5,6). No binding to Ni-PDC, Zn-PDC and Co-PDC was observed.</p>

### III. General screening of accessible histidine containing proteins with PDC KIT

Example 1 : By kind permission of the author, Dr P.A. Flamée, Laboratoire de Génie génétique et de Biologie moléculaire, Institut de Biochimie B6, Sart Tilman 4000 Liège (Belgium).  
 Sample volume that was loaded onto each column : 10 ml of crude clarified lysate of Mutated timase from E. Coli, containing 8 histidine residues (5 accessible).

SDS-PAGE 12% in the presence of  $\beta$ -mercaptoethanol  
 (15 microliters of sample – stained with Coomassie blue)



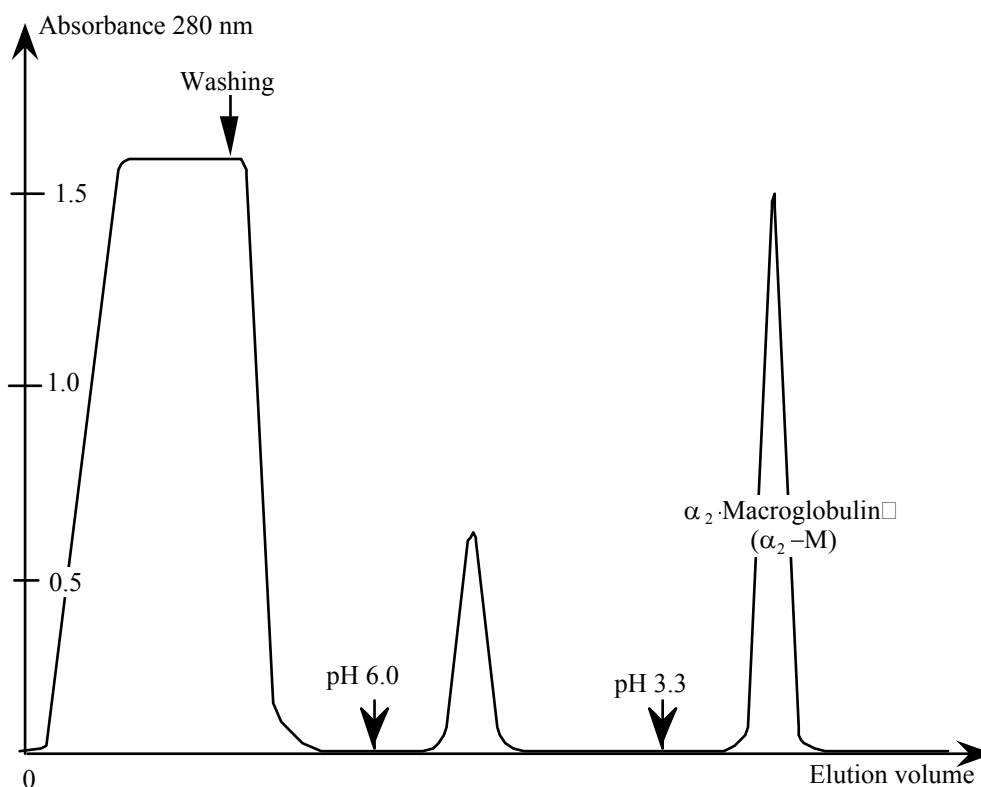
<b>Fractions 1,2, 3 &amp; 4</b> <b>Fractions 10-11</b> <b>Fractions 15-17</b> <b>M</b>	Washing with $K_2PO_4$ 20mM pH 7.5, NaCl 50mM Fractions eluted at pH 5.7 Mutated timase (MW 27,000 daltons) eluted at pH 5.0 Markers 14,400; 21,500; 31,000; 45,000; 66,200 & 97,400 daltons
---	---

**Conclusion :** Ni-PDC allows the purification of mutated timase in a single step with a recovery of 15 mg of protein per ml of wet gel (**Panel B, lane 15, 16 & 17**) . Panels A, C & D (Cu-PDC ; Zn-PDC & Co-PDC) are not shown.

Example 2 : The PDC KIT allows the purification of  $\alpha_2$ -Macroglobulin in a single step with the purity of approx. 90% (w/w) as follows :

### $\alpha_2$ -Macroglobulin purification

<b>Gel volume</b>	25 ml Ni <sup>2+</sup> PDC- Agarose.
<b>Sample</b>	100 ml human serum.
<b>Binding buffer</b>	K <sub>2</sub> HPO <sub>4</sub> 50mM, NaCl 0.15M pH 8.0.
<b>Washing buffer</b>	1. K <sub>2</sub> HPO <sub>4</sub> 50mM, NaCl 0.15M pH 8.0. 2. K <sub>2</sub> HPO <sub>4</sub> 50mM, NaCl 0.15M pH 6.0.
<b>Elution buffer</b>	AcONa 50mM pH 3.3.



Purity of  $\alpha_2$ -M (containing 38 histidine residues) was determined to be approx. 90% by SDS-PAGE in the presence of  $\beta$ -mercaptoethanol and its activity by immunodiffusion on agarose gel.

### Example 3 : Mouse monoclonal IgG purification

M<sup>2+</sup>-PDC-Agarose is also an excellent affinity support for the purification of Mouse monoclonal IgG<sub>1</sub> with a recovery greater than 90% and the degree of purity greater than 90% (w/w).

<b>Metal chelate gel</b>	Ni <sup>2+</sup> PDC-Agarose
<b>Sample</b>	Clarified Ascite fluids.
<b>Binding buffer</b>	K <sub>2</sub> HPO <sub>4</sub> 50mM, NaCl 0.15M pH 8.0.
<b>Washing buffer</b>	K <sub>2</sub> HPO <sub>4</sub> 50mM, NaCl 0.15M pH 8.0.
<b>Elution buffer</b>	K <sub>2</sub> HPO <sub>4</sub> 50mM, NaCl 0.15M pH 6.0.

## Protein purification protocols

with

### PDC-Matrix using PDC KIT

Reagents ready-to-use :

- 1 ml of Cu-PDC column, 1 ml of Ni-PDC column,  
1 ml of Zn-PDC column and 1 ml of Co-PDC column.
  - 100 ml x 2 of buffer A; 100 ml x 2 of buffer B.
  - 100 ml of buffer E and 100 ml of buffer F.
- 

## I. Protocol for 6xHis-tagged protein purification with PDC-Matrix

### I.1. Selection of the most appropriate Metal chelate column in a primary screening with PDC KIT.

1. Equilibrate 4 columns of 1 ml of Cu-PDC, Ni-PDC, Zn-PDC and Co-PDC with 4 ml of buffer A.
2. Load 0.5 ml-10 ml of clarified lysate\* to each column. Recycle 3 times.  
(It is recommended to use PBS pH 8.0 in any case, as the loading buffer).
3. Wash each column 3 times with 4 ml of buffer A.
4. Wash each column 3 times with 4 ml of buffer B.
5. Wash each column once with 4 ml of buffer A.
6. Elute each column 4 times with 2 ml of buffer E.
7. Elute each column 4 times with 2 ml of buffer F.
8. Assay all the fractions obtained from point 2 to point 7 using the most appropriate system (O.D at 280nm, SDS-PAGE etc.)

\*The lysate can be obtained using

- non-denaturing conditions, with a sonication buffer such as PBS 50mM pH 8.0 with or without EDTA 0.5M (0.1 - 0.2% v/v).

PBS : phosphate buffered saline (Na<sub>2</sub>HPO<sub>4</sub> 50mM-100mM, NaCl 150mM-1000mM pH 8.0.

- or denaturing conditions with a lysis buffer such as PBS containing guanidine hydrochloride 6M or urea 8M pH 8.0 for example, with or without β-mercaptoethanol (approx. 1% v/v). In this case, the buffer A (step 1) can be replaced by PBS buffer containing guanidine hydrochloride 6M pH 8.0 and the steps 4, 6, 7 and 8 are not yet necessary. The buffers E & F can contain □-mercaptoethanol.

## I.2. Optimization of a single step purification of 6xHis-tagged proteins with PDC-Matrix

**Once the most appropriate column is selected, the optimization of the chromatography conditions can be performed as follows.**

The following remarks should be taken into account :

- The use of hydrogenocarbonate or carbonate buffer as loading and washing buffer is not recommended, because of their strong competing electron donor ;
- The Tris.HCl or Tris.AcOH pH 8.0 buffer can be used as loading and washing buffer when the affinity of metal ion-PDC complex for the protein of interest is fairly high ;
- The phosphate 20mM-100mM pH 8.0 buffer is often used as loading and washing buffer ;
- A high concentration of NaCl (0.3M-1.5M) in the washing buffer, generally does not affect the binding capacity of the metal chelate gel and the activity of the protein of interest . The role of NaCl is to dissociate interactions between protein-protein or generally to avoid any ion-exchange effects ;
- The use of guanidine hydrochloride 4M-6M pH 8.0 in the washing steps , generally does not affect the activity of any proteins which are not eluted by this buffer. Note that the guanidine hydrochloride 4M-6M pH 8.0 buffer tends to strip slowly the Cu-Chelator column if excessively used ;
- The urea 2M-8M pH 8.0 generally does not affect the binding capacity of the Metal chelate-PDC for 6x His-tagged proteins. In particular, the proteins eluted in urea over a pH range of 6.0-8.0 generally remain biologically stable ;
- The use of NaH<sub>2</sub>PO<sub>4</sub> 50mM-100mM, NaCl 150mM-300mM pH 6.0 tends to eliminate some proteins having affinity lower than 6x His-tagged proteins ;
- The washing buffer pH 8.0 containing imidazole 05mM-20mM, can be used to reduce the non-specific binding ;
- The elution can be realized with a gradient of imidazole 20mM - 300mM pH 7.4 or a gradient of NaH<sub>2</sub>PO<sub>4</sub> 50mM pH 7.4 – 4.0.

## II. Protocol for Zn protein purification with PDC using PDC KIT

### II.1. Selection of the most appropriate Metal chelate column in a primary screening with PDC KIT

The selection of the most appropriate column can be realized in the same manner as for 6x His-tagged proteins. However, the points 4, 5, 6 and 8 sometimes are not necessary (See I.1. above).

### II.2. Optimization of a single step purification of Zn proteins with PDC-Matrix

**Once the most appropriate metal chelate column is selected, the optimization of the chromatography conditions can be performed in the following manner :**

- The  $\text{Na}_2\text{HPO}_4$  50mM, NaCl 150mM pH 8.0 buffer is often used as the loading and washing buffer. The Tris.AcOH 50mM, NaCl 150mM pH 8.0 buffer also can be used as the washing buffer when the affinity of the metal ion-PDC complex for the protein of interest is fairly high.
- The  $\text{Na}_2\text{PO}_4$  50mM, NaCl 150mM pH 6.0 buffer is often used as the first elution buffer.
- The second elution can be performed either with NaOAc 50mM, NaCl 150mM pH 4.0 buffer or a gradient of imidazole 0 – 300mM pH 7.4.

## III. Protocol for first attempts at general purification of proteins with PDC using PDC KIT

### III.1. Selection of the most appropriate Metal chelate column in a primary screening with PDC KIT

The selection of the most appropriate column can be realized in the same manner as for 6x His-tagged proteins.

### III.2. Optimization of purification of proteins of interest with PDC-Matrix

**Once the most appropriate metal chelate column is selected, the optimization of the chromatography conditions can be performed in the manner described in I.2. and II.2. above.**



## PDC KIT - ORDERING INFORMATION

1/3

### Important notes for the PDC KIT :

- It is not recommended to use regenerated columns for the initial protein screening. New columns should be used.
- But the regenerated gel can be used for purification of proteins in the optimization step.

### PDC KIT

(PENTADENTATE CHELATOR KIT)

with

### 1) PDC – Streamline™ Quartz Base Matrix

**Streamline™ Quartz Base Matrix** is a macroporous cross-linked 6% agarose containing a crystalline quartz core :

**Bead size range** : 100-300 µm .

**Flow rate range** : 200-300 cm/h .

Product code	Product name	Package	*Price in EUR
<b>PDC-SLQ KIT</b>	Pentadentate chelator kit <i>ready-to-use</i>  with  PDC-Streamline™ Quartz Base Matrix	Columns	<b>567.00</b>
		- 1 ml Cu-PDC-SLQ column	
		- 1 ml Ni-PDC-SLQ column	
		- 1 ml Zn-PDC-SLQ column	
		- 1 ml Co-PDC-SLQ column	
		Buffers	
		- 100 ml x 2 of buffer A	
		- 100 ml x 2 of buffer B	
		- 100 ml of buffer E	
		- 100 ml of buffer F	
		Resin	
		25 ml of PDC-Streamline™ Quartz Base Matrix, free of Metal ions (Code : PDC-SLQ free)	
*All prices are FOB Liège Bulk quantities are available Delivery in Belgium : franco if orders > 247.89 EUR.			<b>2007 - 2008</b>
Please see also PDC-Matrix (Pentadentate chelator-Matrix) for I.M.A.C. (Immobilized Metal ion Affinity Chromatography), this catalogue.			

## PDC KIT - ORDERING INFORMATION

2/3

### PDC KIT (PENTADENTATE CHELATOR KIT) with 2) PDC – Sepharose™ 4 fast flow

**Sepharose™ 4 fast flow** is a high cross-linked 4% agarose :  
**Bead size range** : 45-165 µm .  
**Exclusion limit** : 3.10<sup>7</sup> daltons .  
**Flow rate range** : 50-300 cm/h .

Product code	Product name	Package	*Price in EUR
PDC-4FF KIT	Pentadentate chelator kit <i>ready-to-use</i>  with  PDC-Sepharose™ 4 fast flow	Columns - 1 ml Cu-PDC-4FF column - 1 ml Ni-PDC-4FF column - 1 ml Zn-PDC-4FF column - 1 ml Co-PDC-4FF column Buffers - 2x 100 ml of Buffer A - 2x 100 ml of Buffer B  - 1x 100 ml of buffer E - 1x 100 ml of buffer F Resin - 1x 25 ml of PDC-Sepharose™ 4 fast flow free of Metal ions (Code : PDC-4FF free)	567.00
*All prices are FOB Liège Bulk quantities are available Delivery in Belgium : franco if orders > 247.89 EUR.			2007 - 2008
Please see also PDC-Matrix (Pentadentate chelator-Matrix) for I.M.A.C. (Immobilized Metal ion Affinity Chromatography), this catalogue.			

## PDC KIT - ORDERING INFORMATION

3/3

### PDC KIT (PENTADENTATE CHELATOR KIT) with 3) PDC – Sepharose™ CL-4B

Sepharose™ CL-4B is a cross-linked 4% agarose :  
 Bead size range : 45-165 µm .  
 Exclusion limit : 2.10<sup>7</sup> daltons .

Product code	Product name	Package	*Price in EUR
<b>PDC-4S KIT</b>	<b>Pentadentate chelator kit</b> <i>ready-to-use</i>  with <b>PDC- Sepharose™ CL-4B</b>	<b>Columns</b> - 1 ml <b>Cu-PDC-4S</b> column - 1 ml <b>Ni-PDC-4S</b> column - 1 ml <b>Zn-PDC-4S</b> column - 1 ml <b>Co-PDC-4S</b> column  <b>Buffers</b> - 100 ml x 2 of buffer A - 100 ml x 2 of buffer B  - 100 ml of buffer E - 100 ml of buffer F  <b>Resin</b> 25 ml of <b>PDC- Sepharose™ CL-4B</b> free of Metal ions (Code : <b>PDC-S free</b> )	<b>405.00</b>
*All prices are FOB Liège Bulk quantities are available Delivery in Belgium : franco if orders > 247.89 EUR.			<b>2007 - 2008</b>
Please see also PDC-Matrix (Pentadentate chelator-Matrix) for I.M.A.C. (Immobilized Metal ion Affinity Chromatography), this catalogue.			

## PDC COLUMNS - ORDERING INFORMATION 1/3

### PDC COLUMNS

(PENTADENTATE CHELATOR COLUMNS)

with

#### 1) PDC – Streamline™ Quartz Base Matrix

**Streamline™ Quartz Base Matrix** is a macroporous cross-linked 6% agarose containing a crystalline quartz core :

**Bead size range** : 100-300 µm .

**Flow rate range** : 200-300 cm/h .

PDC columns	Pentadentate chelator-Streamline™ Quartz Base Matrix chelated with	PDC-Streamline™ Quartz Base Matrix metal chelated or not columns of your choice	Price in EUR
<b>Cu-PDC-SLQ column</b>	<b>Cu<sup>2+</sup> ion</b>	<b>5x 1 ml PDC gel column</b> <b>10x 1 ml PDC gel column</b> <b>** Empty column characteristics:</b> <ul style="list-style-type: none"><li>polypropylene .</li><li>maximum gel volume : 3 ml (diameter interior-exterior = 0.8-1.0 cm) .</li><li>maximum reservoir volume : 4 ml (diam. Int.-ext. = 1.5-1.8 cm) .</li><li>frit porosity : 15-45 µm .</li></ul> <b>1x 5 ml PDC gel column</b> <b>5x 5 ml PDC gel column</b> <b>** Empty column characteristics:</b> <ul style="list-style-type: none"><li>borosilicate glass barrel .</li><li>interior diameter : 1.5 cm .</li><li>length : 5 cm .</li><li>polypropylene reservoir volume : 9 ml .</li><li>inlet &amp; outlet on the column .</li></ul> <b>&gt; 5 ml PDC gel column</b>	<b>174.00</b> <b>271.00</b>
<b>Ni-PDC-SLQ column</b>	<b>Ni<sup>2+</sup> ion</b>		
<b>Zn-PDC-SLQ column</b>	<b>Zn<sup>2+</sup> ion</b>		
<b>Co-PDC-SLQ column</b>	<b>Co<sup>2+</sup> ion</b>		
<b>PDC-SLQ free column</b>	<b>free of metal ions</b>		
<b>*All prices are FOB Liège</b> <b>Bulk quantities are available.</b> <b>Delivery in Belgium : franco if orders &gt; 247.89 EUR.</b>			<b>2007 - 2008</b>

## 2/3

(PENTADENTATE CHELATOR COLUMNS)

2) PDC – Sepharose™ 4 fast flow

**Bead size range :** 45-165  $\mu\text{m}$  .

**Exclusion limit :**  $3.10^7$  daltons .

**Flow rate range :** 50-300 cm/h .

**Affiland s.a.**  
Tel. : +32-4-366 33 94  
Fax : +32-4-246 15 06

3/3

3) **PDC**-Sepharose™CL-4B

Sepharose™ CL-4B is a cross-linked 4% agarose :

Bead size range : 45-165  $\mu\text{m}$  .

Exclusion limit :  $2 \cdot 10^7$  daltons .

<b>PDC columns</b>	<b>Pentadentate chelator- Sepharose™ CL-4B chelated with</b>	<b>PDC- Sepharose™ CL-4B metal chelated or not columns of your choice</b>	<b>Price in EUR</b>
<b>Cu-PDC-4S column</b>	<b>Cu<sup>2+</sup> ion</b>	<b>5x 1 ml PDC gel column</b> <b>10x 1 ml PDC gel column</b> <b>** Empty column characteristics:</b> <ul style="list-style-type: none"> <li>• polypropylene .</li> <li>• maximum gel volume : 3 ml (diameter interior-exterior = 0.8-1.0 cm) .</li> <li>• maximum reservoir volume : 4 ml (diam. Int.-ext. = 1.5-1.8 cm .</li> <li>• frit porosity : 15-45 µm .</li> </ul>	<b>125.00</b> <b>195.00</b>
<b>Ni-PDC-4S column</b>	<b>Ni<sup>2+</sup> ion</b>		
<b>Zn-PDC-4S column</b>	<b>Zn<sup>2+</sup> ion</b>		
<b>Co-PDC-4S column</b>	<b>Co<sup>2+</sup> ion</b>	<b>1x 5 ml PDC gel column</b> <b>5x 5 ml PDC gel column</b> <b>** Empty column characteristics:</b> <ul style="list-style-type: none"> <li>• borosilicate glass barrel .</li> <li>• interior diameter : 1.5 cm .</li> <li>• length : 5 cm .</li> <li>• polypropylene reservoir volume : 9 ml .</li> <li>• inlet &amp; outlet on the column .</li> </ul>	
<b>free PDC-4S column</b>	<b>free of metal ions</b>	<b>&gt; 5 ml PDC gel column</b>	<b>Please inquire</b>
*All prices are FOB Liège Bulk quantities are available. Delivery in Belgium : franco if orders > 247.89 EUR.			<b>2007 - 2008</b>

1/3

## PDC RESINS

(PENTADENTATE CHELATOR RESINS)

with

### 1) PDC – Streamline™ Quartz Base Matrix

**Streamline™ Quartz Base Matrix** is a macroporous cross-linked 6% agarose containing a crystalline quartz core :

**Bead size range :** 100-300 µm .

**Flow rate range :** 200-300 cm/h .

PDC resins	Pentadentate chelator-Streamline™ Quartz Base Matrix chelated with	PDC-Streamline™ Quartz Base Matrix metal chelated or not resins of your choice	Price in EUR
<b>Cu-PDC-SLQ column</b>	<b>Cu<sup>2+</sup> ion</b>	<b>25 ml</b>	<b>348.00</b>
<b>Ni-PDC-SLQ column</b>	<b>Ni<sup>2+</sup> ion</b>	<b>60 ml</b>	<b>700.00</b>
<b>Zn-PDC-SLQ column</b>	<b>Zn<sup>2+</sup> ion</b>	<b>100 ml</b>	<b>1088.00</b>
<b>Co-PDC-SLQ column</b>	<b>Co<sup>2+</sup> ion</b>	<b>500 ml</b>	<b>4348.00</b>
<b>PDC-SLQ free column</b>	<b>free of metal ions</b>	<b>&gt; 1000 ml</b>	<b>Please inquire</b>
*All prices are FOB Liège Bulk quantities are available. Delivery in Belgium : franco if orders > 247.89 EUR.			<b>2007 - 2008</b>

PDC RESINS - ORDERING INFORMATION 2/3

**PDC RESINS**  
 (PENTADENTATE CHELATOR RESINS)  
 with

**2) PDC – Sepharose™ 4 fast flow**

**Sepharose™ 4 fast flow** is a high cross-linked 4% agarose :

**Bead size range** : 45-165 µm .

**Exclusion limit** :  $3 \cdot 10^7$  daltons .

**Flow rate range** : 50-300 cm/h .

PDC resins	Pentadentate chelator- Sepharose™ 4 fast flow chelated with	PDC- Sepharose™ 4 fast flow metal chelated or not resins of your choice	Price in EUR
<b>Cu-PDC-4FF resin</b>	<b>Cu<sup>2+</sup> ion</b>	<b>25 ml</b>	<b>348.00</b>
<b>Ni-PDC-4FF resin</b>	<b>Ni<sup>2+</sup> ion</b>	<b>60 ml</b>	<b>700.00</b>
<b>Zn-PDC-4FF resin</b>	<b>Zn<sup>2+</sup> ion</b>	<b>100 ml</b>	<b>1088.00</b>
<b>Co-PDC-4FF resin</b>	<b>Co<sup>2+</sup> ion</b>	<b>500 ml</b>	<b>4348.00</b>
<b>free PDC-4FF resin</b>	<b>free of metal ions</b>	<b>&gt; 1000 ml</b>	<b>Please inquire</b>
*All prices are FOB Liège Bulk quantities are available. Delivery in Belgium : franco if orders > 247.89 EUR.			<b>2007 - 2008</b>

**PDC resins - ORDERING INFORMATION**
3/3



## PDC RESINS

(PENTADENTATE CHELATOR RESINS)  
with  
**3) PDC-Sepharose™CL-4B**

**Sepharose™ CL-4B** is a cross-linked 4% agarose :  
 Bead size range : 45-165 µm .  
 Exclusion limit : 2.10<sup>7</sup> daltons .

PDC resins	Pentadentate chelator- Sepharose™ CL-4B chelated with	PDC- Sepharose™ CL-4B metal chelated or not resins of your choice	Price in EUR
<b>Cu-PDC-4S resin</b>	<b>Cu<sup>2+</sup> ion</b>	<b>25 ml</b>	<b>250.00</b>
<b>Ni-PDC-4S resin</b>	<b>Ni<sup>2+</sup> ion</b>	<b>60 ml</b>	<b>500.00</b>
<b>Zn-PDC-4S resin</b>	<b>Zn<sup>2+</sup> ion</b>	<b>100 ml</b>	<b>780.00</b>
<b>Co-PDC-4S resin</b>	<b>Co<sup>2+</sup> ion</b>	<b>500 ml</b>	<b>3100.00</b>
<b>free PDC-4S resin</b>	<b>free of metal ions</b>	<b>&gt; 1000 ml</b>	<b>Please inquire</b>
*All prices are FOB Liège Bulk quantities are available. Delivery in Belgium : franco if orders > 247.89 EUR.			<b>2007 - 2008</b>

## PDC BUFFERS – ORDERING INFORMATION

Product code	PDC Buffer name	Volume	*Price in EUR
PDC-A	PDC, Buffer A	1000 ml	40.00
	Na <sub>2</sub> HPO4 100mM, NaCl 0.3M pH 8.0	5000 ml	80.00
PDC-B	PDC, Buffer B	1000 ml	45.00
	Na <sub>2</sub> HPO4 100mM, NaCl 0.3M, Urea 4M, pH 8.0	5000 ml	140.00
PDC-E	PDC, Buffer E	1000 ml	41.00
	Na <sub>2</sub> HPO4 100mM, NaCl 0.3M, Imidazole 100mM pH 8.0	5000 ml	120.00
PDC-F	PDC, Buffer F	1000 ml	45.00
	Na <sub>2</sub> HPO4 100mM, NaCl 0.3M, Imidazole 300mM pH 8.0	5000 ml	140.00
*All prices are FOB Liège Bulk quantities are available.			2007 - 2008

## PMIB (Polyvalent metal ion binding resin)

## Easy-to-use

Ref.: Environ. Sci. Technol. 2006, 40, 1478 - 1484

Note that IDA resins (Iminodiacetic acid resins) are not able to retain the metal ions demanding the octahedral configuration as the stable complex form such as  $\text{Ca}^{2+}$ ,  $\text{Fe}^{2+}$  or  $\text{Fe}^{3+}$ ,  $\text{Ni}^{2+}$ ,  $\text{Co}^{2+}$ ...

**The polyvalent metal ion resin (PMIB) developed by AFFILAND (patent pending), is capable of forming stable octahedral complexes with all heavy metal ions at the physiological pH .**

### CHARACTERISTICS OF THE RESIN

- **Matrix :** Approx. 100  $\mu\text{m}$  (dry bead size ).
- **Ligand :** Pentadentate chelator .
- **Flow rate :** Very high.
- **High binding capacity for polyvalent metal ions :** approx. 150  $\mu\text{moles}$  of metal ions per ml of resin .  
The chelation complexes are stable .
- **No detectable binding for monovalent metal ions ( $\text{Na}^+$ ,  $\text{K}^+$ ...) .**
- **No detectable binding for proteins .**
- **Long life & regenerable resin :** Minimum 20 cycles without significant loss of binding capacity with regeneration for routine use.

### METAL ION BINDING CAPACITY OF PMIB

Metal ion	Formula	M.W.	Binding capacity/ml resin	
			in mg	in mmoles
$\text{Ca}^{2+}$	$\text{CaCl}_2 \cdot 2\text{H}_2\text{O}$	147.00	26.7	0.18
$\text{Cu}^{2+}$	$\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$	249.68	34.7	0.14
$\text{Co}^{2+}$	$\text{CoCl}_2 \cdot 6\text{H}_2\text{O}$	237.93	34.8	0.15
$\text{Ba}^{2+}$	$\text{BaCl}_2 \cdot 2\text{H}_2\text{O}$	244.28	33.3	0.14
$\text{Fe}^{3+}$	$\text{Fe}_2 (\text{SO}_4)_3 \cdot n\text{H}_2\text{O}$	399.88	30.0	0.08
$\text{Hg}^{2+}$	$\text{HgCl}_2$	271.5	46.7	0.17
$\text{Mn}^{2+}$	$\text{MnCl}_2 \cdot 4\text{H}_2\text{O}$	197.91	29.3	0.15
$\text{Ni}^{2+}$	$\text{NiCl}_2 \cdot 6\text{H}_2\text{O}$	237.69	34.7	0.15
$\text{Pb}^{2+}$	$\text{Pb}(\text{AcO})_2 \cdot 3\text{H}_2\text{O}$	379.34	56.7	0.15
$\text{Zn}^{2+}$	$\text{ZnCl}_2$	136.30	24.0	0.18

### APPLICATIONS

#### EASY , RAPID & ECONOMIC PREPARATION OF

- **Water free** of polyvalent metal ions.
- **Buffers free** of polyvalent metal ions.
- **Proteins free** of polyvalent metal ions after I.M.A.C. purification.  
In IMAC, the leaching of metal ions due to the stability of the complex Metal-Chelator, can be observed during the equilibration of the column as well as during the chromatography comprising the sample loading, the washing and the elution steps .
- **Metalloproteins free** of polyvalent metal ions.

### ORDERING INFORMATION

Product code	Product name	Package	*Price in EUR
PMIB	Polyvalent metal ion binding resin	25 ml	250.00
		100 ml	700.00
		500 ml	2500.00
		From 1000 ml	Please inquire
*All prices are FOB Liège Bulk quantities are available Delivery in Belgium : franco if orders > 247.89 EUR.			2007 - 2008

The INSTRUCTION FOR USE is provided with the products.

## r-PROTEIN A - TSK<sup>R</sup>

Application references:

- 1) **J. Invest. Dermatol. 108:** 886-91 (1997) .
- 2) **The J.B.C. 270:** 17257-17263 (1995) ; **270:** 23293-23299 (1995) ;
- 3) **The J.B.C. 273:** 7038-7043 (1998) ;
- 4) **The J.B.C. 274:** 8788-8796 (1999) ; **274:** 14053-14061 (1999) ;
- 5) **The J.B.C. 275:** 19567-19576 (2000) ; **275:** 21416-21421 (2000) ;
- 6) **The J.B.C. 276:** 1361 – 1368 (2001) ;
- 6) **The J.B.C. 277:** 19855 – 19860 (2002) ;
- 7) **The J.B.C. 278:** 30677 – 30685 (2003) ;

### CHARACTERISTICS OF THE GEL

<b>Matrix :</b>	<b>TSK<sup>R</sup> HW-65S, a polyvinylpolymer</b> (TSK : a registered trade mark of Toyosoda). 16 atoms.
<b>Spacer arm :</b>	-NH <sub>2</sub> of Protein A or r-Protein A.
<b>Attachment :</b>	Approx. 2.5 mg of Protein A from Staphylococcus aureus or 3 mg of r-Protein A.
<b>Immobilized ligand :</b>	Approx. 20 mg of hIgG per ml of wet gel. pH 2-11.
<b>Binding capacity :</b>	At least 10 cycles without significant loss of binding capacity.
<b>Stability :</b>	Several years when stored at 4°C in the presence of NaN <sub>3</sub> 0.1%.
<b>Life time of the gel with routine use :</b>	4°C.
<b>Shelf life of the gel :</b>	
<b>Storage :</b>	

### ORDERING INFORMATION

Product code	Product name	Package	*Price in EUR
r-PRA36-T	r-Protein A-TSK <sup>R</sup>	5 ml	298.00
		10 ml	496.00
		25 ml	992.00
*All prices are FOB Liège Bulk quantities on request			2007 - 2008

#### Important note :

- IgG is retained at Fc regions by Protein A - **TSK<sup>R</sup>**.
- Fab & Fab' of IgG are not retained by Protein A - **TSK<sup>R</sup>**.
- IgA, IgE & IgM generally are not retained by Protein A - **TSK<sup>R</sup>**.

## r-PROTEIN A – SEPHAROSE™ 4 FAST FLOW

### CHARACTERISTICS OF THE GEL

<b>Matrix :</b>	<b>Sepharose™ 4 fast flow</b> (a high cross-linked 4% agarose) <b>Average bead size range :</b> 90 µm . <b>Exclusion limit :</b> 3.10 <sup>7</sup> daltons . <b>Flow rate range :</b> 50-300 cm/h
<b>Spacer arm :</b>	16 atoms .
<b>Attachment :</b>	-NH <sub>2</sub> of r-Protein A .
<b>Immobilized ligand :</b>	Approx. 4.2 mg of r-Protein A .
<b>Binding capacity :</b>	Approx. 30 mg of hIgG per ml of wet gel .
<b>Stability :</b>	pH 2-11.
<b>Life time of the gel with routine use :</b>	At least 10 cycles without significant loss of binding capacity.
<b>Shelf life of the gel :</b>	Several years when stored at 4°C in the presence of NaN <sub>3</sub> 0.1% (w/v).
<b>Storage :</b>	4°C.

### ORDERING INFORMATION

Product code	Product name	Package	*Price in EUR
r-PRA36-4FF	r-Protein A- Sepharose™ 4 fast flow	5 ml	209.00
		10 ml	400.00
		25 ml	836.00
*All prices are FOB Liège Bulk quantities on request Delivery in Belgium : franco if orders > 250.00 EUR			2007 - 2008

#### Important note :

- IgG is retained at Fc regions by Protein A- **Sepharose™ 4 fast flow** .
- Fab & Fab' of IgG are not retained by Protein A- **Sepharose™ 4 fast flow** .
- IgA, IgE & IgM generally are not retained by Protein A- **Sepharose™ fast flow** .

## r-PROTEIN A – STREAMLINE™ QUARTZ BASE MATRIX

### CHARACTERISTICS OF THE GEL

**Matrix :** **Streamline™ Quartz Base Matrix.**

Streamline™ Quartz Base Matrix is a macroporous cross-linked 6% agarose containing a crystalline quartz core :

**Bead size range :** 100-300 µm .

**Flow rate range :** 200-300 cm/h .

**Spacer arm :** 16 atoms.

**Attachment :** -NH<sub>2</sub> of r-Protein A

**Immobilized ligand :** Approx. 4.2 mg of r-Protein A.

**Binding capacity :** approx. 20 mg of hIgG per ml of wet gel.

**Stability :** pH 2-11.

**Life time of the gel with routine use :** At least 10 cycles without significant loss of binding capacity.

**Shelf life of the gel :** Several years when stored at 4°C in the presence of NaN<sub>3</sub> 0.1% (w/v).

**Storage :** 4°C.

### ORDERING INFORMATION

Product code	Product name	Package	*Price in EUR
r-PRA36-SLQ	r-Protein A- Streamline <sup>R</sup> Quartz Base Matrix	5 ml	209.00
		10 ml	400.00
		25 ml	836.00
*All prices are FOB Liège Bulk quantities on request Delivery in Belgium : franco if orders > 250.00 EUR			2007 - 2008

**Important note :**

- IgG is retained at Fc regions by Protein A- **Streamline™ Quartz Base Matrix** .
- Fab & Fab' of IgG are not retained by Protein A- **Streamline™ Quartz Base Matrix** .
- IgA, IgE & IgM generally are not retained by Protein A- **Streamline™ Quartz Base Matrix** .

## AFFINITY PURIFIED PROTEINS & HORMONES

- [!\[\]\(36f8637baaa56c4be44b454435949289\_img.jpg\) \*\*Antibodies \(alphabetical list\)\*\*](#)
- [!\[\]\(b556e0ef1e10ccfc32976edb6416074f\_img.jpg\) \*\*Antisera to steroids for RIA\*\*](#)
- [!\[\]\(cf1529ba638f0498d7e334e7a79dd058\_img.jpg\) \*\*Avidin\*\*](#)
- [!\[\]\(2c071b2b285393c82ac6838d54fa5656\_img.jpg\) \*\*Fibronectin\*\*](#)
- [!\[\]\(bda2070c29c668b13a0cf5b37bc9c21e\_img.jpg\) \*\*HSA \(human serum albumin\)\*\*](#)
- [!\[\]\(4dc7f5c797d7cb1aa70e6a60bb01318c\_img.jpg\) \*\*h \$\alpha\_2\$ -M \(human  \$\alpha\_2\$ -Macroglobulin\)\*\*](#)
- [!\[\]\(8c14435c4129a2a291714ff8aa0140d6\_img.jpg\) \*\*IgG, affinity purified\*\*](#)
- [!\[\]\(aa22af288cc0ca0644b1717d2002bd9a\_img.jpg\) \*\*IgY antibodies\*\*](#)
- [!\[\]\(3b5c45bb1eac680bb1a411f41e6867a8\_img.jpg\) \*\*Myoglobin\*\*](#)
- [!\[\]\(f9cf6b32694e80d3e0d454d9f6a25272\_img.jpg\) \*\*Ovalbumin\*\*](#)
- [!\[\]\(0937effee628b10b329e045486465a23\_img.jpg\) \*\*PMSG \(pregnant mare serum gonadotropin\)\*\*](#)
- [!\[\]\(d486141adb7eaccee678e3458b4d7cfd\_img.jpg\) \*\*Precipitating antibody, ready-to-use\*\*](#)
- [!\[\]\(5d98a48b93f9660d41ce021d1279fc95\_img.jpg\) \*\*r-Protein A & Activated r-Protein A\*\*](#)
  
- [!\[\]\(acde3eba7c23131a5ce5f1404cbba9ed\_img.jpg\) \*\*HCG \(human chorionic gonadotropin\)\*\*](#)
- [!\[\]\(67cb540a03abc77eeeb9f325a13be9a7\_img.jpg\) \*\*HPL \(human placental lactogen\)\*\*](#)
  
- [!\[\]\(5b9c04de722f3bbbe2d623f2c94ab3ed\_img.jpg\) \*\*HGH \(human growth hormone\)\*\*](#)
- [!\[\]\(2334026fd001c0e0ad1f59065393d212\_img.jpg\) \*\*HFSH \(human follicle stimulating hormone\)\*\*](#)
- [!\[\]\(015b9b321e84ba9cb710273ffe513afe\_img.jpg\) \*\*HLH \(human luteinizing hormone\)\*\*](#)
- [!\[\]\(e88f9961e2ded7c147ce72eefcf4d400\_img.jpg\) \*\*HPRL \(human prolactin\)\*\*](#)
- [!\[\]\(71657cad56b505c59e42bac0bb5fcd0b\_img.jpg\) \*\*HTSH \(human thyroid stimulating hormone\)\*\*](#)
  
- [!\[\]\(2dc51f13e447df99479f30699c919631\_img.jpg\) \*\*HCBG \(human corticosteroid binding globulin\)\*\*](#)
- [!\[\]\(df52fb4435630e4e6d217af8bcb05b31\_img.jpg\) \*\*HSHBG \(human sex hormone binding globulin\)\*\*](#)
- [!\[\]\(169dc807e2fac4ef4fcd514712aeb12f\_img.jpg\) \*\*HTBG \(human thyroxine binding globulin\)\*\*](#)
  
- [!\[\]\(35b9d033890211b52cc4db4bfe80be2f\_img.jpg\) \*\*HORSE PROTEINS\*\*](#)

## AVIDIN

Avidin, synthesized in the hen oviduct, is a glycoprotein of MW 68,000 daltons which occupies about 0.05% (w/w) of the total protein content of the hen egg white.

The great affinity of Avidin for d-biotin, vitamin H ( $k_d = 10^{-15}M$ ) results in a great number of applications in biochemistry (immunoassays, receptor and histochemical studies, bacteriophage inhibitions...(1,2).

### AVIDIN, NATIVE pI 10.5 – Product code : AVIP-N

Native avidin is a tetrameric protein composed of four identical subunits. **Each subunit is glycosylated at 17-Asparagine and has one binding site for d-biotin.**

*One unit of avidin activity is defined as the amount of protein which will bind 1 mg of d-biotin or of HABA (4-hydroxyazobenzene-2'-carboxylic acid). See Biochem. J.; 89, 599 (1963).*

**The highest activity of Avidin highly purified**, is found to be 13-14 units.

**The isoelectric point** of native Avidin is 10.5.

**The basic glycoprotein nature** of native Avidin results in some non-specific binding observed in different studies (3).

Streptavidin, a neutral bacterial analog of Avidin which is non-glycosylated and obtained from Streptomyces avidinii, does not show this non-specific binding due to the native Avidin.

However, contrary to Avidin, **Streptavidin contains a sequence highly homologous to a segment of fibronectin**. Recent studies have demonstrated that the non-specific binding of streptavidin is due to the strong interactions of this sequence with cell surface receptors (4).

### AVIDIN, DEGLYCOSYLATED pI 10.5 - Product code : AVIP-DG-10.5

This modified Avidin, obtained by the total removal of carbohydrate moieties of the native Avidin, is not recognized by lectins or other carbohydrate binding proteins.

**Its isoelectric point** remains at 10.5.

**Its activity** is 13-14 units.

### AVIDIN, DEGLYCOSYLATED pI neutre - Product code : AVIP-DG-6.7

**That is a non-glycosylated Avidin with neutral isoelectric point.**

Avidin, deglycosylated neutral pI does not present the non-specific binding mentioned above.

**Its activity** is 13-14 units.

#### SOLUBILITY OF AVIDINS

Avidin, native or modified is highly soluble in water or salt solution at physiological pH (7.5-8.0): 50 mg of Avidin per ml of solution.

#### STABILITY OF AVIDINS

Avidin, native or modified is very stable against heat, pH changes and chaotropic reagents (5). The Avidin solution is stable for weeks or a month at 4°C.

#### References:

- (1) N.M. GREEN; Adv. Protein Chem. 29, 85-133 (1975).
- (2) M. WILCHECK and E.A. BAYER; Methods in Enzymology: Avidin-Biotin Technology, Vol. 184 (1990).
- (3) R.C. BRUCH and H.B. WHITE; Biochemistry 21, 5334-5341 (1982).
- (4) R. ALON et al.; Biochem. Biophys. Res. Commun. 170, 1236-1241 (1990).
- (5) J.W.DONOVAN and K.D. ROSS; Biochemistry 12, 512 (1973).



## ORDERING INFORMATION

Product code	Product name	Package	*Price in EUR
AVIP-N	Avidin, Native	100 mg	240.00
AVIP-DG-10.5	Avidin, Deglycosylated pI 10.5	100 mg	450.00
AVIP-DG-6.7	Avidin, Deglycosylated pI neutral	100 mg	480.00
*All prices are FOB Liège Bulk quantities are available. Shipment at room temperature			<b>2007 - 2008</b>

## IMMOBILIZED AVIDIN AND BIOTIN – this catalogue .

## **hSA** human Serum Albumin MW 67,000 daltons

### CHARACTERISTICS

<b>Source :</b>	Human serum.
<b>Purification method:</b>	Affinity purified.
<b>Shipment conditions :</b>	<ul style="list-style-type: none"> <li>• Lyophilized, essentially salt free.</li> <li>• <b>Shipment at room temperature</b></li> </ul>
<b>Purity :</b>	Greater than 98% by SDS-PAGE. 1 front of precipitation against Ab hSA

### ORDERING INFORMATION

Product code	Product name	Package	*Price in EUR
HSA	Human Serum Albumin, highly purified	1g	100.00
		5 g	300.00
		10 g	500.00
*All prices are FOB Liège Bulk quantities are available <b>Shipment at room temperature</b>			<b>2007 - 2008</b>

Hepatitis test: Negative.

Aids antibody test: Negative

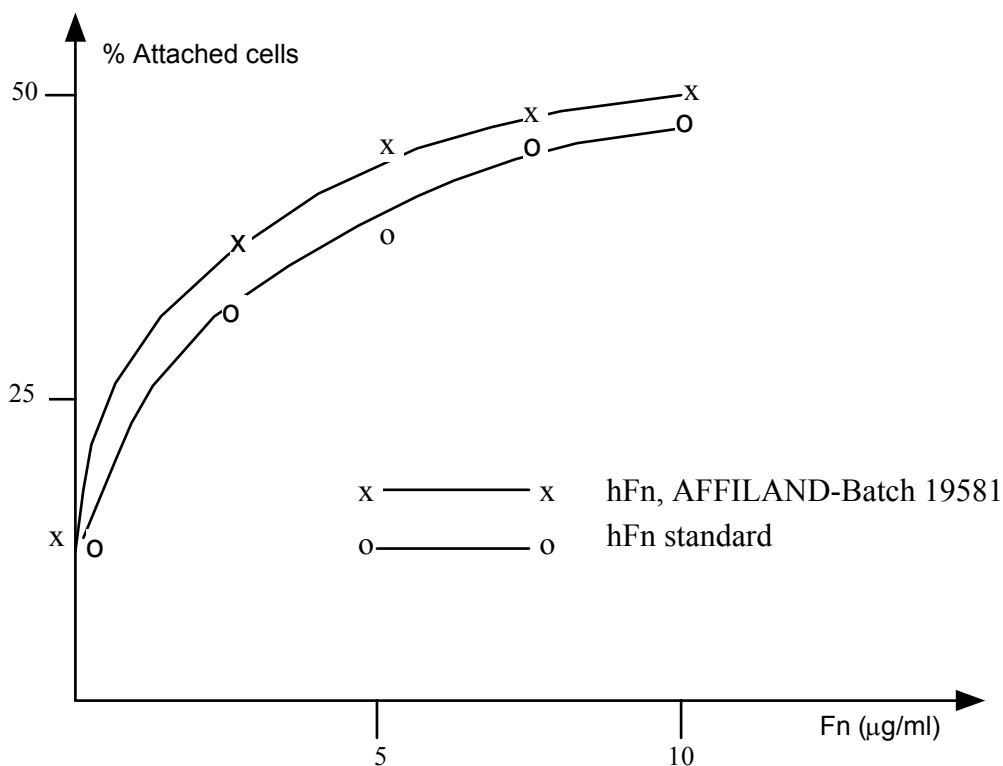
## FIBRONECTIN

MW 440,000 daltons

### CHARACTERISTICS

**Source :** From citrated plasma .  
**Purification method :** Affinity chromatography .  
**Shipment conditions :**  
 • Protein is determined by Lowry method .  
 • Lyophilized in Tris.HCl 20mM pH 7.4, CaCl<sub>2</sub> 1mM .  
 • Reconstituted with distilled water: 1mg fibronectin/ml .  
 • Store at -20°C .  
**Purity :** 97% by SDS-PAGE .  
**Biological properties :**  
 Two sub-units linked to each-other by the S-S bridges .

### Cell adhesion promoting activity of human fibronectin (hFn)



Cell adhesion of collagen attachment deficient cells (rat lung cancer cells) in 30 min. on Collagen type I polymer.  
 Correction of the cell adhesion was done by supplemienting the medium with increasing doses of human fibronectin.

## ORDERING INFORMATION

Product code	Product name	Package	*Price in EUR
Afd-6b	Bovine fibronectin	1 mg	40.00
		10 mg	210.00
Afd-6h	Human fibronectin	1 mg	66.00
		10 mg	290.00
Afd-6m	Mouse fibronectin	1 mg	225.00
Afd-6rb	Rabbit fibronectin	1 mg	93.00
Afd-6rt	Rat fibronectin	1 mg	175.00
*All prices are FOB Liège Bulk quantities are available <b>Shipment at room temperature</b>			<b>2007 - 2008</b>

### For human fibronectin :

Hepatitis test: Negative.

Aids antibody test: Negative.

**Fibronectin from other animal species on request.**

**$\alpha_2$ -M, human**  
 (human  $\alpha_2$ -Macroglobulin)  
 MW 725,000 daltons

**CHARACTERISTICS**

**Source :** Human serum.

**Purification method :** Affinity purified.

**Purity & Shipment conditions :**

- >95% (w/w).
- Major bands at 180,000 daltons and 85,000 daltons in the presence of  $\beta$ -mercaptoethanol by SDS -PAGE.
- Confirmed by Western Blotting.
- Lyophilized in Tris.HCl 20mM pH 7.4.
- **Shipment at room temperature**

**Scientific note:**

Serum glycoprotein of MW approx. 800,000 daltons, containing 38 histidine residues. Two protomers of MW approx. 360,000 daltons. Each protomer is formed by two sub-units of MW 180,000 daltons, linked by disulfide bridges. N-linked complex carbohydrate side chains.

**Biological properties:**

- 1) J. Biol. Chem. 254, 4452-4456 (1979).
- 2) Anal. Biochem., 99, 415 (1979).
- 3) Meth. Enzymol., 223, 121 (1993).

Hepatitis test: Negative.

Aids antibody test: Negative.

**ORDERING INFORMATION**

Product code	Product name	Package	*Price in EUR
$\alpha_2$ -hM	$\alpha_2$ -Macroglobulin, human	1 mg	100.00
		5 mg	350.00
		10 mg	600.00
*All prices are FOB Liège Bulk quantities are available Delivery in Belgium : franco if orders > 247.89 EUR.			2007 - 2008

## MYOGLOBIN

### CHARACTERISTICS

<b>Source :</b>	Human heart muscle.								
<b>Purification method :</b>	Affinity purified.								
<b>Shipment conditions :</b>	<ul style="list-style-type: none"> <li>• Lyophilized, essentially salt free.</li> <li>• <b>Shipment at room temperature</b></li> </ul>								
<b>Purity :</b>	Greater than 95% by HPLC & electrophoresis.								
<b>Solubility :</b>	2 mg of powder per ml of PBS 0.1 M pH 7.4.								
<b>RIA potency :</b>	100%								
<b>Contaminations :</b>	<table> <tr> <td>HSA</td><td>&lt; 3.0%</td></tr> <tr> <td>Parvalbumin</td><td>0.0%</td></tr> <tr> <td>Hb</td><td>&lt; 0.5%</td></tr> <tr> <td>Other proteins</td><td>&lt;1.0%</td></tr> </table>	HSA	< 3.0%	Parvalbumin	0.0%	Hb	< 0.5%	Other proteins	<1.0%
HSA	< 3.0%								
Parvalbumin	0.0%								
Hb	< 0.5%								
Other proteins	<1.0%								

Hepatitis test: Negative.

Aids antibody test: Negative.

### ORDERING INFORMATION

Product code	Product name	Package	*Price in EUR
MYOi	human Myoglobin, highly purified	1 mg	100.00
		5 mg	300.00
		10 mg	550.00
*All prices are FOB Liège Bulk quantities are available Delivery in Belgium : franco if orders > 247.89 EUR.			2007 - 2008

## PMSG

### Pregnant mare serum gonadotropin

#### CHARACTERISTICS

- Source :** Pregnant mare serum.
- Purification method :** Chromatography purified.
- Shipment conditions :**
- Lyophilized, essentially salt free.
  - **Shipment at room temperature**

#### Scientific notes :

PMSGi	(PMSG, highly purified)	MW: 43,000-63,000 daltons
PMSGc	(PMSG, crude)	
$\alpha$ -PMSGi	( $\alpha$ -PMSG, highly purified)	MW: 15,000-25,000 daltons
$\beta$ -PMSGi	( $\beta$ -PMSG, highly purified)	MW: 25,000-35,000 daltons

#### Purity :

PMSGi	<b>Potency:</b>	- approx. 10,000 IU/mg in terms of the 2nd Int. St. equine serum gonadotropin 62/1 or equivalent. - greater than 98% by SDS-PAGE.
PMSGc	<b>Potency:</b>	1,000 IU/vial.
$\alpha$ -PMSGi	<b>Potency:</b>	
	<b>Contamination:</b>	- $\beta$ -PMSG: smaller than 2%. - holo PMSG: not detectable.
$\beta$ -PMSGi	<b>Potency:</b>	
	<b>Contamination:</b>	- $\alpha$ -PMSG: smaller than 2%. - holo PMSG: not detectable.

#### ORDERING INFORMATION

Product code	Product name	Package	*Price in EUR
PMSGi	Pregnant mare serum gonadotropin <i>highly purified</i>	50 µg	150.00
		100 µg	290.00
PMSGc	Pregnant mare serum gonadotropin, <i>crude</i>	1,000 IU	30.00
α-PMSGi	Pregnant mare serum gonadotropin, α-subunit, <i>highly purified</i>	50 µg	135.00
		100 µg	210.00
β-PMSGi	Pregnant mare serum gonadotropin, β-subunit, <i>highly purified</i>	50 µg	135.00
		100 µg	250.00
*All prices are FOB Liège Bulk quantities are available Delivery in Belgium : franco if orders > 247.89 EUR.			2007 - 2008

## OVALBUMIN

MW 43,000 daltons

### CHARACTERISTICS

**Source:** Hen egg white.

**Purification method:** Affinity purified.

**Shipment conditions:**

- Lyophilized, essentially salt free.
- Store at 4°C.

**Purity:** 95% by SDS-PAGE

### ORDERING INFORMATION

Product code	Product name	Package	*Price in EUR
Afd-4	Ovalbumin	5 g	140.00
		10 g	225.00
*All prices are FOB Liège Bulk quantities are available Delivery in Belgium : franco if orders > 247.89 EUR. <b>Shipment at room temperature</b>			2007 - 2008



## PRECIPITATING ANTIBODY ready-to-use

Product code	Product name	Package	*Price in EUR
Afd-6GP	Sheep Anti goat precipitating antibody	1000 assays	80.00
		500 assays	45.00
Afd-5MP	Sheep Anti mouse precipitating antibody	1000 assays	80.00
		500 assays	45.00
Afd-4RP	Sheep Anti rabbit precipitating antibody	1000 assays	80.00
		500 assays	45.00
Afd-4RP-F	Sheep Anti rabbit precipitating antibody, Fc specific	1000 assays	110.00
		500 assays	60.00
Afd-4RP-M	Magnetic Sheep Anti rabbit precipitating antibody	1000 assays	120.00
		500 assays	67.00
*All prices are FOB Liège Bulk quantities are available Delivery in Belgium : franco if orders greater than 247.89 EUR. <b>Shipment at room temperature</b>			<b>2007 - 2008</b>

## ANTISERA to STEROIDS FOR RIA

Antisera to	Host	Coupling position	Product code	State	<sup>a</sup> Titer	*Price in EUR for 1,000 assays
Aldosterone	rabbit	3-CMO-BSA	S-122	lyophilized	2.10 <sup>-4</sup>	110.00
Cortisol	rabbit	3-CMO-BSA	S-123	lyophilized	1.10 <sup>-4</sup>	110.00
17β-estradiol	rabbit	6-CMO-BSA	S-124	lyophilized	1.10 <sup>-4</sup>	100.00
Estriol	rabbit	6-CMO-BSA	S-125	lyophilized	2.10 <sup>-4</sup>	80.00
<sup>a</sup> Titer measured with <sup>3</sup> H-Steroids in one hour assay. *All prices are FOB Liège Bulk quantities are available Delivery in Belgium : franco if orders > 247.89 EUR. <b>Shipment at room temperature</b>						<b>2007 - 2008</b>

## ANTIBODIES

### Alphabetical list for

IH	RIA	ID
IMMUNOHISTOCHEMISTRY	RADIOIMMUNOASSAY	IMMUNODIFFUSION

### ABBREVIATIONS

State

L: lyophilized powder  
G: glycerolated

Animal host

Rb : Rabbit      Go: Goat  
Gp: Guinea-pig      Sh: Sheep

Product code	Antibody to	State	Host	Note Utilization	Package	*Price in EUR
AL001D	$\alpha_1$ -Acid glycoprotein, human	L	Rb	ID	1 ml	35.00
AC002R	ACTH (1-24), human	G	Rb	RIA	1,000 assays	132.00
AC002H	ACTH (1-24), human	L	Rb	IH	50 $\mu$ l	175.00
AF003R	AFP, bovine (Alpha Feto Protein)	G	Rb	RIA	1,000 assays 5,000 assays	90.00 395.00
AF004R	AFP, human	G	Rb	RIA	1,000 assays 5,000 assays	90.00 395.00
AF004H	AFP, human	L	Rb	IH	50 $\mu$ l	132.00
AL005D	Albumin, bovine (BSA)	L	Rb	ID	5 ml	60.00
AL006D	Albumin, human (HSA)	L	Rb	ID	5 ml	60.00
AL007D	Albumin, rat (RSA)	L	Rb	ID	1 ml	60.00
AM008D	Serum Amyloid A component, human (SAA)	L	Rb	ID	1 ml	35.00
AM009D	Serum Amyloid P component, human (SAP)	L	Rb	ID	1 ml	35.00
AN010R	ANF (1-28), human (Atrial Natriuretic Factor)	G	Rb	RIA	1,000 assays 5,000 assays	130.00 590.00
AN010H	ANF (1-28), human	L	Rb	IH	50 $\mu$ l	132.00
AN011R	ANP (1-28) , rat (Atrial Natriuretic Peptide)	G	Rb	RIA	1,000 assays	132.00
Sheep Ab-anti goat precipitating antibody						This catalogue
Sheep Ab-anti mouse precipitating antibody						This catalogue
Sheep Ab-anti rabbit precipitating antibody						This catalogue
Sheep Ab-anti rabbit magnetic precipitating antibody						This catalogue
Sheep Ab-anti rabbit precipitating antibody Fc specific						This catalogue
AN012D	Antithrombin III, human	L	Rb	ID	1 ml	35.00
AN013D	alpha-1-Antitrypsin, human	L	Rb	ID	1 ml	35.00
BO014R	Bombesin	G	Rb	RIA	250 assays	60.00
BO014H	Bombesin	L	Rb	IH	50 $\mu$ l	150.00
BR015R	des Arg 9-Bradykinin	G	Rb	RIA	1,000 assays	120.00
BR015H	des Arg9-Bradykinin	L	Rb	IH	50 $\mu$ l	132.00
CA016R	Calcitonin, human	G	Rb	RIA	1,000 assays	120.00
*All prices are FOB Liège Bulk quantities are available Delivery in Belgium : franco if orders > 247.89 EUR. <b>Shipment at room temperature</b>						<b>2007 - 2008</b>

Product code	Antibody to	State	Host	Note Utilization		Package	*Price in EUR
CB017R	CBG or Transcortin, human (Corticosteroid binding globulin)	G	Rb		RIA	1,000 assays 5,000 assays	120.00 525.00
CE018R	CEA, human (Carcino embryogenic antigen)	G	Rb		RIA	1,000 assays 5,000 assays	90.00 395.00
CE018H	CEA, human	L	Rb		IH	50 µl	132.00
CG019R	CG, human (Chorionic Gonadotropin)	G	Rb	Rapid assay	RIA	1,000 assays 5,000 assays	90.00 395.00
CG019H-1	CG, human	L	Go		IH	50 µl	132.00
CG019H-2	CG, human	L	Rb		IH	50 µl	132.00
CG020R	alpha-CG, human	G	Rb	Rapid assay	RIA	1,000 assays 5,000 assays	90.00 395.00
CG020H	alpha-CG, human	L	Rb		IH	50 µl	120.00
CG021R	beta-CG, human	G	Rb	Rapid assay	RIA	1,000 assays 5,000 assays	90.00 395.00
CG021H	beta-CG, human	L	Rb		IH	50 µl	132.00
CO022D	Complement C-1q, human	L	Rb		ID	1 ml	35.00
CR023R	CRF, human-rat (Corticotropin Releasing Factor)	G	Rb		RIA	1,000 assays	132.00
CR023H	CRF, human-rat	L	Rb		IH	50 µl	132.00
CR024R	CRF, ovine	G	Rb		RIA	250 assays	150.00
CR024H	CRF, ovine	L	Rb		IH	50 µl	175.00
EG025R	EGF, human (Epidermal Growth Factor)	G	Rb		RIA	1,000 assays 5,000 assays	190.00 850.00
EN026R	alpha-Endorphin, human	G	Rb		RIA	1,000 assays	132.00
EN026H	□-Endorphin, human	L	Rb		IH	50 µl	132.00
EN027R	□-Endorphin	G	Rb		RIA	1,000 assays	132.00
EN028H	Leu5-Enkephalin	L	Rb		IH	50 µl	235.00
EN029H	Met5-Enkephalin	L	Rb		IH	50 µl	190.00
<b>Factor IV, Platelet, human</b>				<b>See Product code: PF098R</b>			
FI030D	Fibrinogen, human	L	Rb		ID	1 ml	35.00
FI031D	Fibronectin, bovine	L	Rb		ID	1 ml	92.50
FI032D	Fibronectin, human	L	Rb		ID	1 ml	120.00
FI033D	Fibronectin, mouse	L	Rb		ID	1 ml	132.00
FI034D	Fibronectin, rat	L	Rb		ID	1 ml	132.00
FS035R	FSH, bovine (Follicle Stimulating Hormone)	G	Rb		RIA	1,000 assays 5,000 assays	90.00 395.00
FS035H	FSH, bovine	L	Rb		IH	50 µl	132.00
FS036H	FSH, canine	L	Rb		IH	50 µl	158.97
FS037R	FSH, equine	G	Rb		RIA	1,000 assays 5,000 assays	90.00 395.00
FS038R	FSH, human	G	Rb		RIA	1,000 assays 5,000 assays	175.00 785.00
FS038H-1	FSH, human	L	Rb		IH	50 µl	132.00
FS038H-2	FSH, human	L	Go		IH	50 µl	132.00
FS039H	FSH, monkey	L	Rb		IH	50 µl	132.00
FS040H	FSH, mouse	L	Rb		IH	50 µl	132.00
FS041R	FSH, porcine	G	Rb		RIA	1,000 assays 5,000 assays	90.00 395.00
*All prices are FOB Liège Bulk quantities are available Delivery in Belgium : franco if orders > 247.89 EUR. <b>Shipment at room temperature</b>						<b>2007 - 2008</b>	

Product code	Antibody to	State	Host	Note Utilization	Package	*Price in EUR
FS042R	beta-FSH, porcine	G	Rb	RIA	1,000 assays 5,000 assays	132.00 590.00
FS043R-1	FSH, rat	G	Rb	RIA	1,000 assays	132.00
FS043R-2	FSH, rat	G	Go	RIA	1,000 assays	132.00
FS043H-1	FSH, rat	L	Rb	IH	50 µl	132.00
FS043H-2	FSH, rat	L	Go	IH	50 µl	132.00
GA044R	Gastrin 1, human	G	Rb	RIA	250 assays	105.00
GH045R	GH, bovine (Growth hormone)	G	Rb	RIA	1,000 assays 5,000 assays	90.00 395.00
GH046H	GH, canine	L	Rb	IH	50 µl	150.00
GH047R	GH, equine	G	Rb	RIA	1,000 assays 5,000 assays	90.00 395.00
GH048R	GH, human	G	Rb	RIA	1,000 assays 5,000 assays	90.00 395.00
GH048H-1	GH, human	L	Gp	IH	50 µl	132.00
GH048H-2	GH, human	L	Rb	IH	50 µl	132.00
GH049H	GH, monkey	L	Rb	IH	50 µl	132.00
GH050H	GH, mouse	L	Rb	IH	50 µl	132.00
GH051H	GH, ovine	L	Rb	IH	50 µl	132.00
GH052R	GH, porcine	G	Rb	RIA	1,000 assays 5,000 assays	90.00 395.00
GH053R	GH, rat	G	Rb	RIA	1,000 assays	132.00
GH053H	GH, rat	L	Rb	IH	50 µl	132.00
GL054R	Glucagon, porcine	G	Rb	RIA	250 assays	160.00
GL054H	Glucagon, porcine	L	Rb	IH	50 µl	135.85
GR055R	GRF (1-44) amide, human (Growth hormone releasing factor)	G	Rb	RIA	1,000 assays 5,000 assays	132.00 590.00
GR055H	GRF (1-44) amide, human	L	Rb	IH	50 µl	132.00
HP056D	Hp, human (Haptoglobin)	L	Rb	ID	1 ml	35.00
IG057D	IgA, human	L	Rb	ID	1 ml	35.00
IG058D	IgE, human	L	Rb	ID	1 ml	35.00
IG059R-1	IGF-1, human (Insulin like Growth Factor 1)	G	Gp	RIA	1,000 assays 5,000 assays	190.00 850.00
IG059R-2	IGF-1, human	G	Rb	RIA	1,000 assays 5,000 assays	190.00 850.00
IG060D	IgG, bovine	L	Rb	ID	5 ml	40.00
IG061D	IgG, guinea-pig	L	Sh	ID	5 ml	35.00
IG062D	IgG, human	L	Rb	ID	5 ml	45.00
IG063D	IgG, mouse	L	Go	ID	5 ml	45.00
IG064D	IgG, porcine	L	Rb	ID	5 ml	40.00
IG065D	IgG, rabbit	L	Sh	ID	5 ml	35.00
IN066R	Inhibin-(alpha□□1-24)-Gly-Tyr, human	G	Rb	RIA	1,000 assays	190.00
IN067R	Insulin	G	Gp	RIA	1,000 assays	132.00
LA068D	Lactalbumin, human	L	Rb	ID	1 ml	35.00
LH069R	LH, bovine (Luteinizing hormone)	G	Rb	RIA	1,000 assays 5,000 assays	90.00 395.00
LH069H	LH, bovine	L	Rb	IH	50 µl	132.00
*All prices are FOB Liège Bulk quantities are available Delivery in Belgium : franco if orders > 247.89 EUR. <b>Shipment at room temperature</b>					<b>2007 - 2008</b>	

Product code	Antibody to	State	Host	Note Utilization		Package	*Price in EUR
LH070H	LH, canine	L	Rb		IH	50 µl	162.00
LH071R	LH, equine	G	Rb		RIA	1,000 assays 5,000 assays	90.00 395.00
LH072R	LH, human	G	Rb	Rapid assay	RIA	1,000 assays 5,000 assays	90.00 395.00
LH072H	LH, human	L	Rb		IH	50 µl	132.00
LH073H	LH, monkey	L	Rb		IH	50 µl	132.00
LH074H	LH, mouse	L	Rb		IH	50 µl	132.00
LH075R	LH, porcine	G	Rb		RIA	1,000 assays 5,000 assays	90.00 395.00
LH075H	LH, porcine	L	Rb		IH	50 µl	132.00
LH076R	LH, rat	G	Rb		RIA	1,000 assays	132.00
LH076H	LH, rat	L	Rb		IH	50 µl	132.00
LH077R	alpha-LH, human	G	Rb	Rapid assay	RIA	1,000 assays 5,000 assays	90.00 395.00
LH077H	beta-LH, human	L	Rb		IH	50 µl	132.00
LH078R	beta-LH, human	G	Rb	Rapid assay	RIA	1,000 assays 5,000 assays	175.00 785.00
LH078H-1	beta-LH, human	L	Rb		IH	50 µl	132.00
LH078H-2	beta-LH, human	L	Go		IH	50 µl	132.00
LH079R	beta-LH, porcine	G	Rb		RIA	1,000 assays 5,000 assays	132.00 590.00
LHR80R	LHRH (Luteinizing hormone releasing hormone)	G	Rb		RIA	1,000 assays	132.00
LHR80H	LHRH, human	L	Rb		IH	50 µl	132.00
LHR81H	LHRH, salmon	L	Rb		IH	50 µl	132.00
LP082H	beta-LPH (1-91), human (Lipotrophic hormone)	L	Rb		IH	50 µl	175.00
MI083R	alpha-1-Microglobulin, human	G	Rb	Rapid assay	RIA	1,000 assays 5,000 assays	105.00 460.00
MA084D	alpha-2-Macroglobulin, human	L	Rb		ID	1 ml	45.00
MI085R	beta-2-Microglobulin, human	G	Rb	Rapid assay	RIA	1,000 assays 5,000 assays	105.00 460.00
MO086R	Motilin, porcine	G	Rb		RIA	250 assays	175.00
MY087R	Myoglobin, human heart	G	Rb		RIA	1,000 assays 5,000 assays	132.00 590.00
NE088R	Neurotensin	G	Rb		RIA	1,000 assays	150.00
NE088H	Neurotensin	L	Rb		IH	50 µl	132.00
NG089R	NGF, mouse (Nerve Growth Factor)	G	Rb		RIA	1,000 assays 5,000 assays	190.00 850.00
NP090H	NPY, porcine (Neuropeptide Y)	L	Rb		IH	10 µl	175.00
OX091H	Oxytocin	L	Rb		IH	50 µl	132.00
PA092R	Pancreatic Polypeptide	G	Rb		RIA	250 assays	86.71
PA092H	Pancreatic Polypeptide	L	Rb		IH	50 µl	86.71
PAP093R	PAP (Prostatic Acid Phosphatase)	G	Rb	Rapid assay	RIA	1,000 assays 5,000 assays	105.00 460.00
PA094R	Parvalbumin, rat	G	Rb		RIA	1,000 assays	132.00
*All prices are FOB Liège Bulk quantities are available Delivery in Belgium : franco if orders > 247.89 EUR. <b>Shipment at room temperature</b>						<b>2007 - 2008</b>	

Product code	Antibody to	State	Host	Note Utilization		Package	*Price in EUR
PL095R-1	PL, human (Placental Lactogen)	G	Rb		RIA	1,000 assays 5,000 assays	90.00 395.00
PL095R-2	PL, human	G	Go		RIA	1,000 assays 5,000 assays	90.00 395.00
PL095H-1	PL, human	L	Rb		IH	50 µl	132.00
PL095H-2	PL, human	L	Go		IH	50 µl	132.00
PL096D	Plasminogen, human	L	Rb		ID	1 ml	35.00
PL097R	Plasminogen, rat	G	Rb		RIA	1,000 assays 5,000 assays	132.00 590.00
PF098R	Platelet Factor IV, human	G	Go		RIA	1,000 assays 5,000 assays	132.00 590.00
PM099R	PMSG (Pregnant Mare Serum Gonadotropin)	G	Rb		RIA	1,000 assays 5,000 assays	90.00 395.00
PR100H	PRL, canine (Prolactine)	L	Rb		IH	50 µl	162.00
PR101R	PRL, equine	G	Rb		RIA	1,000 assays 5,000 assays	132.00 590.00
PR101H	PRL, equine	L	Rb		IH	50 µl	132.00
PR102R	PRL, human	G	Rb	Rapid assay	RIA	1,000 assays 5,000 assays	175.00 785.00
PR102H-1	PRL, human	L	Rb		IH	50 µl	132.00
PR102H-2	PRL, human	L	Gp		IH	50 µl	132.00
PR103H	PRL, monkey	L	Rb		IH	50 µl	132.00
PR104H	PRL, mouse	L	Rb		IH	50 µl	132.00
PR105R	PRL, ovine	G	Rb		RIA	1,000 assays 5,000 assays	132.00 590.00
PR105H	PRL, ovine	L	Rb		IH	50 µl	132.00
PR106R	PRL, porcine	G	Rb		RIA	1,000 assays 5,000 assays	132.00 590.00
PR106H	PRL, porcine	L	Rb		IH	50 µl	132.00
PR107H	PRL, rat	L	Rb		IH	50 µl	132.00
PA108D	Protein A	L	Rb		ID	1 ml	105.00
PG109D	Protein G	L	Rb		ID	1 ml	120.00
PS110R	PSA, human (human Prostatic Specific Antigen)	G	Rb	Rapid assay	RIA	1,000 assays 5,000 assays	105.00 460.00
RA111D	Rabbit serum	L	Go		ID	1 ml	30.00
RB112R	RBP, human (human Retinol binding protein)	G	Rb	Rapid assay	RIA	1,000 assays 5,000 assays	120.00 525.00
RT113R	Reverse T3 (rT3)	G	Rb	Rapid assay	RIA	1,000 assays 5,000 assays	90.00 395.00
<b>SAA</b>		<b>See Amyloid A component, Product code: AM008D</b>					
<b>SAP</b>		<b>See Amyloid P component, Product code: AM009D</b>					
SE114R	Secretin, porcine	G	Rb		RIA	250 assays	120.00
SH115R	SHBG, human (Sex hormone binding globulin)	G	Rb	Rapid assay	RIA	1,000 assays 5,000 assays	120.00 525.00
SO116R	Somatostatin	G	Rb		RIA	1,000 assays	150.00
SO116H	Somatostatin	L	Rb		IH	50 µl	150.00
<b>Antibody to Steroids</b>		<b>This catalogue</b>					
*All prices are FOB Liège Bulk quantities are available Delivery in Belgium : franco if orders > 247.89 EUR. <b>Shipment at room temperature</b>						<b>2007 - 2008</b>	

Product code	Antibody to	State	Host	Note Utilization		Package	*Price in EUR
SU117R	Substance P	G	Rb		RIA	1,000 assays	132.00
SU117H	Substance P	L	Rb		IH	50 µl	132.00
T118R	T3	G	Rb	Rapid assay	RIA	1,000 assays 5,000 assays	90.00 395.00
T119R	T4	G	R.A.	Rapid assay	RIA	1,000 assays 5,000 assays	90.00 395.00
TB120R	TBG, human (human Thyroxine binding globulin)	G	Rb		RIA	1,000 assays 5,000 assays	120.00 525.00
TB121R	TBG, rat (rat Thyroxine binding globulin)	G	Rb		RIA	1,000 assays 5,000 assays	132.00 590.00
TG122R	TG, human (human Thyroglobulin)	G	Rb		RIA	1,000 assays 5,000 assays	90.00 395.00
TH123R	beta-Thromboglobulin, human	G	Go		RIA	1,000 assays 5,000 assays	132.00 590.00
<b>Transcortin, human</b>		<b>See CBG, human - Product code: CB017R</b>					
TF124D	Transferrin, human	L	Rb		ID	1 ml	30.00
TR125R	TRH (Thyrotropin Releasing Hormone)	G	Rb		RIA	1,000 assays	132.00
TR125H	TRH	L	Rb		IH	50 µl	132.00
TS126R	TSH, bovine (Thyroid Stimulating hormone)	G	Rb		RIA	1,000 assays 5,000 assays	90.00 395.00
TS126H	TSH, bovine	L	Rb		IH	50 µl	132.00
TS127H	TSH, canine	L	Rb		IH	50 µl	160.00
TS128R	TSH, human	G	Rb	Rapid assay	RIA	1,000 assays 5,000 assays	90.00 395.00
TS128H	TSH, human	L	Rb		IH	50 µl	132.00
TS129H	TSH, monkey	L	Rb		IH	50 µl	132.00
TS130H	TSH, mouse	L	Rb		IH	50 µl	132.00
TS131R	TSH, porcine	G	Rb		RIA	1,000 assays 5,000 assays	90.00 395.00
TS131H	TSH, porcine	L	Rb		IH	50 µl	132.00
TS132R	TSH, rat	G	Rb		RIA	1,000 assays	132.00
TS132H	TSH, rat	L	Rb		IH	50 µl	132.00
TS133R	alpha-TSH, human	G	Rb	Rapid assay	RIA	1,000 assays 5,000 assays	132.00 590.00
TS133H	alpha-TSH, human	L	Rb		IH	50 µl	132.00
TS134R	beta-TSH, human	G	Rb	Rapid assay	RIA	1,000 assays 5,000 assays	120.00 525.00
TS134H-1	beta-TSH, human	L	Rb		IH	50 µl	132.00
TS134H-2	beta-TSH, human	L	Go		IH	50 µl	132.00
TS135R	beta-TSH, porcine	G	Rb		RIA	1,000 assays 5,000 assays	132.00 590.00
*All prices are FOB Liège Bulk quantities are available Delivery in Belgium : franco if orders > 247.89 EUR. <b>Shipment at room temperature</b>						<b>2007 - 2008</b>	



## IgG, IgY affinity purified

The IgG listed below are affinity purified. Activity is assayed by immunoelectrophoresis. Purity is determined to be 97-98% by electrophoresis.

**Shipment :**

- Lyophilized powder, essentially free of salt.
- **Shipment at room temperature**

**Storage :**

4°C - 8°C.

Product code	Product name	Package	*Price in EUR
bIgG	Bovine IgG	100 mg	83.00
		1000 mg	552.00
IgY	Egg yolk IgY	100 mg	174.00
		1000 mg	868.00
gIgG	Goat IgG	100 mg	83.00
		1000 mg	552.00
hoIgG	Horse IgG	100 mg	83.00
		1000 mg	552.00
huIgG	Human IgG	100 mg	97.00
		1000 mg	690.00
pIgG	Pig IgG	100 mg	83.00
		1000 mg	552.00
rbIgG	Rabbit IgG	100 mg	83.00
		1000 mg	552.00
oIgG	Sheep IgG	100 mg	83.00
		1000 mg	552.00
mIgG	Mouse IgG	10 mg	97.00
		> 10 mg	Please inquire
rIgG	Rat IgG	100 mg	276.00
		> 100 mg	Please inquire
*All prices are FOB Liège Bulk quantities are available Delivery in Belgium : franco if orders > 250.00 EUR			2007 - 2008

**For human IgG**

Hepatitis test : Negatif

Aids antibody test : Negative

## r-Protein A

- From E.coli .
- Lyophilized, essentially free of salt.
- Binds the Fc regions of most mammalian IgG.
- Binding capacity : approx. 10 mg of hIgG per mg of solid Protein A.

## Activated r-Protein A

- With conservation of the activity of r-Protein A.
- For immediate covalent linkage between the r-Protein A and the Fc portion, leaving free the Fab of IgG.
- Useful for the coating of r-Protein A onto a solid matrix (tubes, microwells etc.).

### ORDERING INFORMATION

#### Shipment at room temperature

Product code	Product name	Package	*Price in EUR
r-PRA36	r-Protein A	5 mg	80.00
		10 mg	135.00
		100 mg	500.00
r-PRA36A	Activated r-Protein A	5 mg	160.00
		10 mg	270.00
		100 mg	1000.00
*All prices are FOB Liège Bulk quantities on request Delivery in Belgium : franco if orders > 250.00 EUR.			2007 - 2008

## CG, human human Chorionic gonadotropin MW 38,400 daltons

### CHARACTERISTICS

**Source :** Human urine.  
**Purification method :** Chromatography purified

### Scientific notes

hCG is massively secreted by the placenta in the maternal circulation, with a concentration peaking at 9-12 weeks.

- 237 amino acid residues.
- Two subunits : alpha and beta.
- Glycoprotein: 30% polysaccharides.

HCGi	(human CG, highly purified)	MW 38,400 daltons
HCG $\alpha$ i	(human $\alpha$ -CG, highly purified)	MW 14,930 daltons
HCG $\beta$ i	(human $\beta$ -CG, highly purified)	MW 23,470 daltons

### Shipment conditions

- Lyophilized, essentially salt free.
- **At room temperature**

### Purity & activity

HCGi	<b>Potency:</b>	> 9,000 IU/mg in terms of the 1st Int. St. 75/537 or equivalent.
HCGc	<b>Potency:</b>	10,000 IU/vial.
HCG $\alpha$ i	<b>Potency:</b>	approx. 1,000 IU/mg in terms of the 1st IRP Int. St. 75/569 or equivalent .

	<b>Contamination:</b>	- hCG $\beta$ : smaller than 0.2% . - holo HCG: not detectable .
HCG $\beta$ i	<b>Potency:</b>	approx. 1,000 IU/mg in terms of the 1st IRP Int. St. 75/551 or equivalent .
	<b>Contamination:</b>	- hCG $\alpha$ : smaller than 0.2% . - holo HCG: not detectable .

### Biological properties

Acts as a potent LH agonist and displays a weak FSH like activity.

Hepatitis test: Negative.

Aids antibody test: Negative.

### ORDERING INFORMATION

Product code	Product name	Package	*Price in EUR
HCGi	Chorionic gonadotropin, human highly purified	50 µg	55.00
		100 µg	100.00
HCGαi	Chorionic gonadotropin, α-subunit, human, highly purified	50 µg	90.00
		100 µg	160.00
HCGβi	Chorionic gonadotropin, β-subunit, human, highly purified	50 µg	90.00
		100 µg	160.00
*All prices are FOB Liège Bulk quantities are available Delivery in Belgium : franco if orders > 250.00 EUR.			2007 - 2008

## PL, human

### human Placental lactogen

MW 22,000 daltons

<b>Source :</b>	Human placenta
<b>Purification method :</b>	Chromatography purified
<b>Shipment conditions :</b>	<ul style="list-style-type: none"> <li>• Lyophilized, essentially salt free.</li> <li>• <b>Shipment at room temperature</b></li> </ul>
<b>Purity :</b>	Greater than 98% by SDS-PAGE .
Contamination :	HCG and HGH < 0.1% (RIA) .
Potency :	1 mIU/mg in terms of the 1st IRP Int.St. 73/545 or equivalent.

#### Scientific notes :

hPL (Placental Lactogen) = hCS (Choriosomatototropine) .

- Holoprotein of 190 aminoacid residues, MW: 22,000 daltons .
- Two disulfide bridges .
- I.P. 5.5 .
- **Stability in solution** : hPL in the buffer A (concentration: 10mg hPL/ml) is stable at room temperature for 15 days { Buffer A: PBS 0.2M, glycerol 10% (v/v) pH 7.4, Na<sub>3</sub> 0.5% + BSA 0.2%, neomycin 200mg/l, PMSF 1mg/l, trasylol (Bayer) 100,000 IU/l } .

**Assay** : Fast RIA with goat  $\gamma$ -globulin anti hPL bound to a solid phase (incubation time: 30 minutes).

#### Biological properties :

hPL acts as a potent lactogen and as a very weak somatogen.

Hepatitis test: Negative.

Aids antibody test: Negative.

#### ORDERING INFORMATION

Product code	Product name	Package	*Price in EUR
HPLi	Placental lactogen, human highly purified	1 mg	110.00
		5 mg	550.00
		> 10 mg	Please inquire
*All prices are FOB Liège Bulk quantities are available Delivery in Belgium : franco if orders > 250.00 EUR.			2007 - 2008

## GH, human

human Growth Hormone  
MW 22,000 daltons

### CHARACTERISTICS

<b>Source</b>	Human pituitary glands
<b>Purification method</b>	Chromatography purified.
<b>Shipment</b>	<ul style="list-style-type: none"> <li>Lyophilized powder, essentially free of salt.</li> <li><b>Shipment at room temperature</b></li> </ul>
<b>Activity</b>	
Reference	WHO 1st IRP, 66/217 or equivalent.
hGH (iodination grade)	Approx. 2 IU/mg of protein.
<b>Contaminants</b>	hFSH, hLH, hPRL and hTSH < 1% (w/w).
<b>Storage</b>	4°C or lower temperature

Hepatitis test : Negatif

Aids antibody test : Negative

### ORDERING INFORMATION

Product code	Product name	Quantity	*Price in EUR
hGH	Growth hormone, human iodination grade	50 µg	80.00
		100 µg	150.00
*All prices are FOB Liège Delivery in Belgium : franco if orders > 250.00 EUR.			2007 - 2008

FROM OTHER ANIMAL SPECIES, PLEASE INQUIRE

## FSH, human

### human Follicle Stimulating Hormone

MW 32,000 daltons

#### CHARACTERISTICS

<b>Source</b>	Human pituitary glands
<b>Purification method</b>	Affinity chromatography.
<b>Shipment</b>	<b>at room temperature</b>
hFSHi (iodination grade)	Lyophilized powder, essentially free of salt.
hFSHs (for standard curve)	Lyophilized powder, essentially free of salt.

#### Activity

Reference	MRC-WHO 2 <sup>nd</sup> FSH, int. St. 78/549 or equivalent.
hFSHi	Approx. 4,500 IU/mg of protein.
hFSHs	400,000-500,000 mIU/ml of solution.
<b>Contaminants</b>	hGH, hLH, hPRL, hTSH : not detectable.

**Storage** 4°C – 8°C.

#### Scientific note

FSH produced and secreted by the anterior part of pituitary gland, has the role of stimulating the growth and maturation of the ovarian follicles in women and the testes to produce sperm in men.

Hepatitis test : Negatif

Aids antibody test : Negative

#### ORDERING INFORMATION

Product code	Product name	Quantity	*Price in EUR
hFSHi	Follicle Stimulating Hormone, human iodination grade	50 µg	320.00
		100 µg	560.00
hFSHs	Follicle Stimulating Hormone, human partially purified for standard curve	Please inquire	
*All prices are FOB Liège Bulk quantities on request Delivery in Belgium : franco if orders > 250.00 EUR.			<b>2007 - 2008</b>

**FROM OTHER ANIMAL SPECIES, PLEASE INQUIRE**

**FSH $\alpha$ , human**  
 MW 13,500 daltons  
 &  
**FSH $\beta$ , human**  
 MW 18,500 daltons

**CHARACTERISTICS**

**Source** Human pituitary glands

**Purity**

**FSH $\alpha$**   
**Contamination** >98% by SDS-PAGE  
 - FSH $\beta$  < 2% (w/w)  
 - Holo FSH : not detectable

**FSH $\beta$**   
**Contamination** >98% by SDS-PAGE  
 - FSH $\alpha$  < 2% (w/w)  
 - Holo FSH : not detectable

**Shipment**

- Lyophilized powder, essentially salt free.
- **Shipment at room temperature**

**Storage** 4°C – 8°C.

Hepatitis test : Negatif

Aids antibody test : Negative

**ORDERING INFORMATION**

Product code	Product name	Quantity	*Price in EUR
hFSH $\alpha$	Follicle Stimulating Hormone, human $\alpha$ - sub-unit, <i>iodination grade</i>	50 $\mu$ g	342.00
		100 $\mu$ g	631.00
hFSH $\beta$	Follicle Stimulating Hormone, human $\beta$ - sub-unit, <i>iodination grade</i>	50 $\mu$ g	342.00
		20 $\mu$ g	631.00
*All prices are FOB Liège Bulk quantities on request Delivery in Belgium : franco if orders > 250.00 EUR.			2007 - 2008

## LH, human

### human Luteinizing Hormone

MW 28,000 daltons

#### CHARACTERISTICS

<b>Source</b>	Human pituitary glands
<b>Purification method</b>	Affinity chromatography.
<b>Shipment</b>	<b>at room temperature</b>
hLHi (iodination grade) :	Lyophilized powder, essentially free of salt.
hLHs (for standard curve) :	Lyophilized powder, essentially free of salt.
<b>Activity</b>	
Reference	MRC-WHO 2nd LH, int. St. 80/552 or equivalent.
hLHi	> 8,000 IU/mg of protein.
hLHs	300,000-500,000 mIU/ml of solution.
<b>Contaminants :</b>	hGH, hFSH, hPRL : non detectable ; hTSH « 1% (w/w).
<b>Storage</b>	4°C – 8°C.

#### Scientific note

LH produced and secreted by the anterior part of pituitary gland, has the role of regulating the release of progesterone and estrogen in women and promoting the formation of androgen in the testes.

Hepatitis test : Negatif

Aids antibody test : Negative

#### ORDERING INFORMATION

Product code	Product name	Quantity	*Price in EUR
hLHi	Luteinizing hormone, human iodination grade	50 µg	171.00
		100 µg	316.00
hLHs	Luteinizing hormone, human partially purified for standard curve	Please inquire	
*All prices are FOB Liège Bulk quantities on request Delivery in Belgium : franco if orders > 250.00 EUR.			<b>2007 - 2008</b>

FROM OTHER ANIMAL SPECIES, PLEASE INQUIRE



**LH $\alpha$ , human**  
 MW 13,500 daltons  
 &  
**LH $\beta$ , human**  
 MW 14,500 daltons

## CHARACTERISTICS

**Source** Human pituitary glands

### Purity

<b>LH<math>\alpha</math></b>	<b>Contamination</b>	>98% by SDS-PAGE - LH $\beta$ < 2% (w/w) - Holo LH : not detectable
<b>LH<math>\beta</math></b>	<b>Contamination</b>	>98% by SDS-PAGE - LH $\alpha$ < 2% (w/w) - Holo LH : not detectable

### Shipment

- Lyophilized powder, essentially salt free.
- **Shipment at room temperature**

### Storage

4°C – 8°C.

Hepatitis test : Negatif

Aids antibody test : Negative

## ORDERING INFORMATION

Product code	Product name	Quantity	*Price in EUR
HLH $\alpha$	Luteinizing Hormone, human $\alpha$ -sub-unit, <i>iodination grade</i>	50 $\mu$ g	263.00
		100 $\mu$ g	500.00
HLH $\beta$	Luteinizing Hormone, human $\beta$ -sub-unit, <i>iodination grade</i>	50 $\mu$ g	290.00
		100 $\mu$ g	526.00
*All prices are FOB Liège Bulk quantities on request Delivery in Belgium : franco if orders > 250.00 EUR.			2007 - 2008

**PRL, human**  
 human Prolactin  
 MW 23,000 daltons

**CHARACTERISTICS**

<b>Source</b>	Human pituitary glands
<b>Purification method</b>	Affinity chromatography.
<b>Shipment</b>	<b>at room temperature</b>
hPRLi (iodination grade)	Lyophilized powder, essentially free of salt.
hPRLc (crude)	Lyophilized powder, essentially free of salt.
<b>Activity</b>	
Reference	MRC-WHO hPRL, 3 <sup>rd</sup> int. St. 84/500 or equivalent.
hPRLi	32-35 IU/mg of protein.
<b>Storage</b>	4°C – 8°C .

**Scientific note**

PRL secreted by the anterior part of pituitary gland, is necessary for breast development and lactation from women after childbirth.

Hepatitis test : Negatif

Aids antibody test : Negative

**ORDERING INFORMATION**

Product code	Product name	Quantity	*Price in EUR
hPRLi	Prolactin, human iodination grade	10 µg	184.00
		50 µg	657.00
hPRLs	Prolactin, human crude	Please inquire	
*All prices are FOB Liège Bulk quantities on request Delivery in Belgium : franco if orders > 250.00 EUR.			<b>2007 - 2008</b>

FROM OTHER ANIMAL SPECIES, PLEASE INQUIRE

## TSH, human

### human Thyroid Stimulating Hormone

MW 28,500 daltons

#### CHARACTERISTICS

<b>Source</b>	Human pituitary glands
<b>Purification method</b>	Affinity chromatography
<b>Shipment</b>	<ul style="list-style-type: none"> <li>Lyophilized powder, essentially free of salt.</li> <li><b>Shipment at room temprature</b></li> </ul>
<b>Activity</b>	
Reference	MRC-WHO hTSH, int. St. 80/558 or equivalent.
hTSHi (iodination grade)	> 5 IU/mg of protein.
hTSHs (partially purified)	Approx. 300 mIU/mg of lyophilized powder.
<b>Contaminants :</b>	hGH, hFSH, hPRL : not detectable ; hLH < 1% (w/w).
<b>Storage</b>	4°C – 8°C.

#### Scientific note

TSH produced and secreted by the anterior part of pituitary gland, has the role of regulating thyroid function with the formation and secretion of T3 and T4.

Hepatitis test : Negatif

Aids antibody test : Negative

#### ORDERING INFORMATION

Product code	Product name	Quantity	*Price in EUR
hTSHi	Thyroid stimulating hormone, human iodination grade	50 µg	211.00
		100 µg	395.00
hTSHs	Thyroid stimulating hormone, human partially purified for standard curve	Please inquire	
*All prices are FOB Liège Bulk quantities on request Delivery in Belgium : franco if orders > 250.00 EUR.			<b>2007 - 2008</b>

FROM OTHER ANIMAL SPECIES, PLEASE INQUIRE

**TSH $\alpha$ , human**  
 MW 13,500 daltons  
 &  
**TSH $\beta$ , human**  
 MW 15,500 daltons

## CHARACTERISTICS

**Source** Human pituitary glands

### Purity

<b>TSH<math>\alpha</math></b>	>98% by SDS-PAGE
<b>Contamination</b>	- TSH $\beta$ < 2% (w/w) - Holo TSH : not detectable
<b>TSH<math>\beta</math></b>	>98% by SDS-PAGE
<b>Contamination</b>	- TSH $\beta$ < 2% (w/w) - Holo TSH : not detectable

### Shipment

- Lyophilized powder, essentially free of salt.
- **Shipment at room temperature**

**Storage** 4°C – 8°C.

Hepatitis test : Negatif

Aids antibody test : Negative

## ORDERING INFORMATION

Product code	Product name	Quantity	*Price in EUR
hTSH $\alpha$	Thyroid Stimulating hormone, $\alpha$ -sub-unit human, <i>iodination grade</i>	50 $\mu$ g	368.00
		100 $\mu$ g	684.00
HTSH $\beta$	Thyroid Stimulating hormone, $\beta$ -subunit human, <i>iodination grade</i>	50 $\mu$ g	395.00
		100 $\mu$ g	736.00
*All prices are FOB Liège Bulk quantities on request Delivery in Belgium : franco if orders > 250.00 EUR.			2007 - 2008

**CBG, human**  
human Corticosteroid binding globulin  
or Transcortin  
MW 56,000 daltons

**CHARACTERISTICS**

**Source :** Human serum.

**Purification method :** Affinity purified.

**Purity & Shipment conditions**

hCBGi (iodination grade) > 98% pure (w/w).  
Homogeneous by SDS-PAGE.  
Frozen in PBS 50mM pH 7.4 (1 mg hCBG/ml).  
**Shipment on dry ice.**

hCBGp 98% pure (w/w).  
hCBG is determined by RIA and total proteins by Lowry method.  
Lyophilized in Tris.HCl pH 7.4.  
**Shipment at room temperature.**

hCBGs > 90% pure (w/w).  
hCBG is determined by RIA and total proteins by Lowry method.  
Lyophilized powder in Tris.HCl pH 7.4.  
**Shipment at room temperature.**

**Scientific notes**

Serum glycoprotein.  
pI 4.0.  
N-linked complex carbohydrate side chain.

Hepatitis test: Negative.

Aids antibody test: Negative.

## ORDERING INFORMATION

Product code	Product name	Package	*Price in EUR
hCBGi	Corticosteroid binding globulin, human > 98% pure, iodination grade <b>Frozen solution (1 mg hCBG/ml)</b> <b>Shipment on dry ice</b>	50 µg	250.00
		10x 50 µg	1240.00
		10x 100 µg	2231.00
		10 mg	6200.00
		From 100 mg	Please inquire
hCBGp	Corticosteroid binding globulin, human, 98% pure (w/w) <b>Lyophilized powder</b> <b>Shipment at RT</b>	10 mg <b>net</b> of hCBG	2000.00
		30<PO<50 mg <b>net</b> of hCBG	160.00 per mg
		>100 mg <b>net</b> of hCBG	Please inquire
hCBGs	Corticosteroid binding globulin, human, > 90% pure (w/w) <b>Lyophilized powder</b> <b>Shipment at RT</b>	10 mg <b>net</b> of hCBG	1500.00
		30 mg <b>net</b> of hCBG	3800.00
		From 100 mg <b>net</b> of hCBG	Please inquire
*All prices are FOB Liège Bulk quantities are available Delivery in Belgium : franco if orders > 250.00 EUR.			<b>2007 - 2008</b>

For hCBG free of cortisol, please inquire

**SHBG or TeBG, human**  
human Sex hormone binding globulin  
or human Testosterone estradiol binding globulin  
MW 115,000daltons

**CHARACTERISTICS**

**Source:** Human serum.

**Purification method:** Affinity purified.

**Purity & Shipment conditions**

hSHBGi (iodination grade) Greater than 98% - Homogeneous by SDS-PAGE.  
Frozen in Tris.HCl 20mM, glycerol 10% v/v) pH 7.4  
Concentration of hSHBG: 1 mg of per ml of solution.  
**Shipment on dry ice.**

hSHBGp pure at approx. 95% (w/w) SHBG is determined by RIA and total proteins by Lowry method.  
Lyophilized powder in Tris.HCl pH 7.4.  
**Shipment at room temperature.**

hSHBGs pure at 80-95% (w/w) SHBG is determined by RIA and total proteins by Lowry method.  
Lyophilized powder in Tris.HCl pH 7.4.  
**Shipment at room temperature.**

**Scientific note:**

Serum glycoprotein, 8% carbohydrate.  
pIs 4.75, 4.85 and 4.90.  
Heavy protomer MW 53,000 daltons and light protomer MW 50,000 daltons with ratio heavy and light about 10:1.  
N-linked oligosaccharide chain at 7-Asparagine residue.

Hepatitis test: Negative.

Aids antibody test: Negative.

## ORDERING INFORMATION

Product code	Product name	Package	*Price in EUR
hSHBGi	Sex hormone binding globulin, human  highly purified, iodination grade <b>Frozen solution (1 mg SHBG/ml)</b> <b>Shipment on dry ice</b>	50 µg	250.00
		10x 50 µg	1240.00
		10x 100 µg	2231.00
		From 5 mg	Please inquire
hSHBGp	Sex hormone binding globulin, human, 95% pure (w/w) <b>Lyophilized powder</b> <b>Shipment at RT</b>	1<PO<10 mg <b>net</b> of SHBG	600.00 per mg
		20<PO<50 mg <b>net</b> of SHBG	420.00 per mg
		From 50 mg <b>net</b> of SHBG	Please inquire
hSHBGs	Sex hormone binding globulin, human, 80-95% pure (w/w) <b>Lyophilized powder</b> <b>Shipment at RT</b>	1<PO<10 mg <b>net</b> of SHBG	450.00 per mg
		20<PO<50 mg <b>net</b> of SHBG	372.00 per mg
		From 50 mg <b>net</b> of SHBG	Please inquire
*All prices are FOB Liège Bulk quantities are available Delivery in Belgium : franco if orders > 250.00 EUR.			2007 - 2008



## fh-hSHBG, human

human SHBG highly purified and  
free of steroids, hCG & pituitary hormones  
MW 115,000daltons

### CHARACTERISTICS

**Source:** From highly purified hSHBG (see hSHBGi) .

**Purification method:** Active charcoal .

### Shipment conditions

- fh-SHBGi (iodination grade) : 1 mg hSHBG per ml.  
Frozen in Tris.HCl 20mM, glycerol 10% v/v) pH 7.4  
**Shipment on dry ice.**

### Purity

- Greater than 98%.
- Homogeneous by SDS-PAGE.
- Dihydrotestosterone < 10 ng/litre.
- Testosterone & estradiol : trace or not detectable.
- Other steroids : not detectable.
- hCG, hGH, hFSH, hLH, hPRL and hTSH : not detectable.

### Scientific note :

Serum glycoprotein, 8% carbohydrate.

pIs 4.75, 4.85 and 4.90.

Heavy protomer MW 53,000 daltons and light protomer MW 50,000 daltons with ratio heavy and light about 10:1.

N-linked oligosaccharide chain at 7-Asparagine residue.

Hepatitis test: Negative.

Aids antibody test: Negative.

### ORDERING INFORMATION

Product code	Product name	Package	*Price in EUR
fh-hSHBGi	Sex hormone binding globulin, human highly purified, free of DHT <b>Frozen solution (1 mg fh-hSHBGi/ml solution)</b> <b>Shipment on dry ice</b>	50 µg	372.00
		10x 50 µg	1735.00
		10x 100 µg	2752.00
		Large quantities	Please inquire
*All prices are FOB Liège Bulk quantities are available Delivery in Belgium : franco if orders > 250.00 EUR..			2007 - 2008

**TBG, human**  
human Thyroxine binding globulin  
MW 54,000 daltons

**CHARACTERISTICS**

**Source:** Human serum.

**Purification method:** Affinity purified.

**Purity & Shipment conditions**

**hTBGi** (iodination grade) Greater than 98%.  
Homogeneous by SDS-PAGE.  
Concentration : 1 mg of net hTBG per ml of solution.  
**Shipment on dry ice.**

**hTBGp** (semi-pure) >50% pure (w/w) .  
hTBG is determined by RIA and total proteins by Lowry method.  
**Shipment at room temperature.**

**hTBGs** (partially purified) approx. 10% pure (w/w) .  
hTBG is determined by RIA and total proteins by Lowry method.  
**Shipment at room temperature.**

**Scientific note:**

Serum glycoprotein, one single chain.  
pIs 4.25, 4.30 and 4.78.  
Disulfide bridges  
N-linked complex carbohydrate side chains.

**Biological properties:**

Thyroxine binding globulin is the major binding protein of thyroid hormones in the blood stream. Under normal conditions, only a portion of the available binding sites on each TBG molecule are occupied with L-thyroxine (T<sub>4</sub>) and triiodothyronine(T<sub>3</sub>). Under abnormal conditions such hypo or hyperthyroidites: saturation of the TBG by changes with the blood levels of thyroid hormones. TBG determination is a biological parameter routinely measured to assess thyroid function.

Hepatitis test: Negative.

Aids antibody test: Negative.

## ORDERING INFORMATION

Product code	Product name	Package	*Price in EUR
hTBGi	Thyroxine binding globulin, human highly purified, iodination grade <b>Frozen solution (1mg hTBG/ml)</b> <b>Shipment on dry ice</b>	100 µg	150.00
		5x 100 µg	500.00
		10x 100 µg	870.00
		From 10 mg	Please inquire
hTBGp	Thyroxine binding globulin, human >50% pure (w/w), for RIA standard curve <b>Lyophilized powder</b> <b>Shipment at RT</b>	1 mg <b>net</b> of TBG	400.00
		10 mg <b>net</b> of TBG	1800.00
		30<P.O.<50 mg <b>net</b> of TBG	1 mg =160.00
hTBGs	Thyroxine binding globulin, human approx. 10% pure (w/w), for RIA standard curve <b>Lyophilized powder</b> <b>Shipment at RT</b>	1 mg <b>net</b> of TBG	250.00
		10 mg <b>net</b> of TBG	1000.00
		From 50 mg <b>net</b> of TBG	Please inquire
*All prices are FOB Liège Bulk quantities are available Delivery in Belgium : franco if orders > 250.00 EUR.		<b>2007 - 2008</b>	

**For hTBG free of T<sub>3</sub> & T<sub>4</sub>, please inquire**