2005 Catalog

PRODUCTS FOR:

ADME Research
Drug Binding Studies
Tissue Culture
Protein Therapeutics
Drug Delivery
Drug and Vaccine Formulation
Cryopreservation of Cells
In Vitro Fertilization

Recombinant
SERUM ALBUMIN
Other Proteins & Antibodies

NEW CENTURY PHARMACEUTICALS, INC.

Who We Are

New Century Pharmaceuticals, Inc. (**NCP**) is the world's leading source of expertise on the structure and function of serum albumin – a protein which plays a vital role in the maintenance of osmotic blood pressure and blood pH and a central role in the transport, distribution and metabolism of a broad array of ligands including many of the most important pharmaceuticals known to man. Since their breakthrough discovery at NASA leading to the complete atomic structure of serum albumin,* our scientists have determined the structural basis for many of this important molecule's physical and ligand binding properties. After an extensive multiyear effort, we have substantially completed a major crystallographic survey of the albumin binding characteristics of hundreds of major pharmaceutical compounds leading to the discovery of previously unidentified drug binding sites and mechanisms creating major opportunities for designing safer and more effective drugs. This research has required the cloning and expression of several species of albumin, albumin fragments and albumin mutants as well as antibodies to these molecules. In further exploration of drug transport phenomena, NCP has expanded its research programs to include the expression, structure and chemistry of other important proteins, such as human alpha-1 acid glycoprotein, providing the pharmaceutical industry with the most current and accurate picture of plasma drug/ligand transport. As a result of demand from our academic and corporate partners, we are now making many of these valuable tools available to the research community which can utilize these products in a broad range of applications including:

Fermentation Facility at NCP's Headquarters

ADME Research

Drug Binding Studies

Tissue Culture

Protein Therapeutics

Drug Delivery

Drug and Vaccine Formulation

Coating for Medical Devices

Cryopreservation of Cells

In Vitro Fertilization

*Carter, DC, *et al.* / Three-Dimensional Structure of Human Serum Albumin Science 1989, 244:1117-1224; He, XM & Carter, DC, / Atomic Structure and Chemistry of Human Serum Albumin, Nature 1992, 358:209-215.

Table of Contents

Commercial Partnering and Licensing Opportunities

NCP continues to seek corporate partnering and out-licensing opportunities for its products, technologies and intellectual properties. The following partnering and licensing opportunities are currently available to both pharmaceutical and biotechnology companies–

Partnering Opportunities

- Cloning and Expression of Albumin Mutants and Fusion Proteins
- Rapid Determination of the 3-Dimensional Structure of Drugs and Other Ligands Bound to Albumin
- X-Ray Crystallographic Determination of Difficult to Resolve Protein Structures
- Customized Formulation of Albumin for Specialized Applications
- Cloning and Expression of Ferritin Fusion Proteins
- Proprietary Albumins for use as Hypoallergenic Excipients, Volume Expanders and Other Applications

Licensing Opportunities

- Hundreds of Drug/Albumin 3-Dimensional Structures Useful in Drug Design and Representing Almost Every Therapeutic Category
- High Resolution 3-Dimensional Structures of Human and Other Albumins
- Use of Albumin Fragments in X-Ray Crystallography and NMR Studies
- Use of Albumin Fragments and Fusion Products in Therapeutic Applications
- Use of Ferritin Fusion Proteins as a Vaccine and Therapeutic Platform
- Transgenic Rodents with Human Serum Albumin
- Drug Combining Agents which Lower Toxicity and Improve Drug Safety and Efficacy

Our WebSite:
www.newcenturypharm.com

Telephone Ordering:
1-256-461-0024 Extension 260 / 8:30 AM to 5:00 PM CST Monday through Friday

FAX Ordering:
1-256-461-4224

On-Line Ordering & Enquiries:
To place a new order for our products E-mail to: orders@newcenturypharm.com or complete and E-Mail the order form located in the contact section of our Website www.newcenturypharm.com.*

To enquire about an order already placed E-mail to: orderinfo@newcenturypharm.com or complete and E-Mail the enquiries form located in the contact section of our Website www.newcenturypharm.com.*

**All order inquiries must reference the customer purchase order number.*

Credit Card Purchases:
NCP accepts Mastercard and Visa. For customers with a Credit Approval from our Accounting Department, payment for products not charged to Mastercard or Visa must be paid within 30 days of product shipment. An invoice is generally posted to the customer by regular mail within 24 hours of product shipment. Product will not be shipped to customers with an outstanding invoice unpaid within the specified 30 day remittance period.

Shipping:
All NCP products are shipped to US customers by over-night express service (Fedex, Airborne Express or UPS). All NCP products shipped to international (non-US encluding Canada) destinations are shipped via the fastest available commercial carrier. All product is shipped in styrofoam boxes containing ice packs to maintain the temperature to approximately 4°C.

Shipping & Handling Charges:
All shipments to US destinations are subject to a $25 shipping and handling charge. All shipments to non-US destinations are subject to a $50 shipping and handling charge. These charges are subject to change in the event a customer specifies special shipping and/or handling requirements. For example, if a customer wants to place an order on Thursday or Friday and needs overnight delivery, a $15 surcharge applies over the regular shipping and handling fee. International customers are also responsible for any import permits required to ship product into their country. Please inquire for further specifics.

Delivery:
Orders placed for in-stock items on Monday through Wednesday at 6:00 PM (CST) are shipped the following day. Orders received for in-stock items from 6:00 PM (CST) on Wednesday through midnight on Sunday are shipped on the following Monday. For out of-stock intems or custom orders for products or services, the customer will be advised of the anticipated shipping date within 24 hours of placing the order.

Ordering, Shipping & Other Product Information

Customer Discounts:
NCP passes along discounts to our customers based on their account history. All customers, regardless of their history, receive a 10% discount when purchasing 10 or more units of the same product unless a greater discount is specified in the Price List. Further quantity discounts are available depending on the magnitude of the proposed purchase.

Restricted Use of Products:
Products are sold for research and/or laboratory use and are not to be used in humans or for any drug or related applications. Use of our products in humans is strictly prohibited.

Warranty:
NCP warrants that the product will meet the specifications stated on our Technical Data Sheet and agrees to replace the product free of any charge including shipping and handling if the product does not conform to those specifications. Customers must notify NCP within 30 days of receving a product that it does not meet specifications and the data or basis upon which the customer's claim is made. Any such claim should be FAX'ed to the company at **1-256-461-0024** to the attention of the Customer Service Manager.

In consideration of NCP's above-mentioned warranty, the customer agrees to and accepts the following terms and conditions:

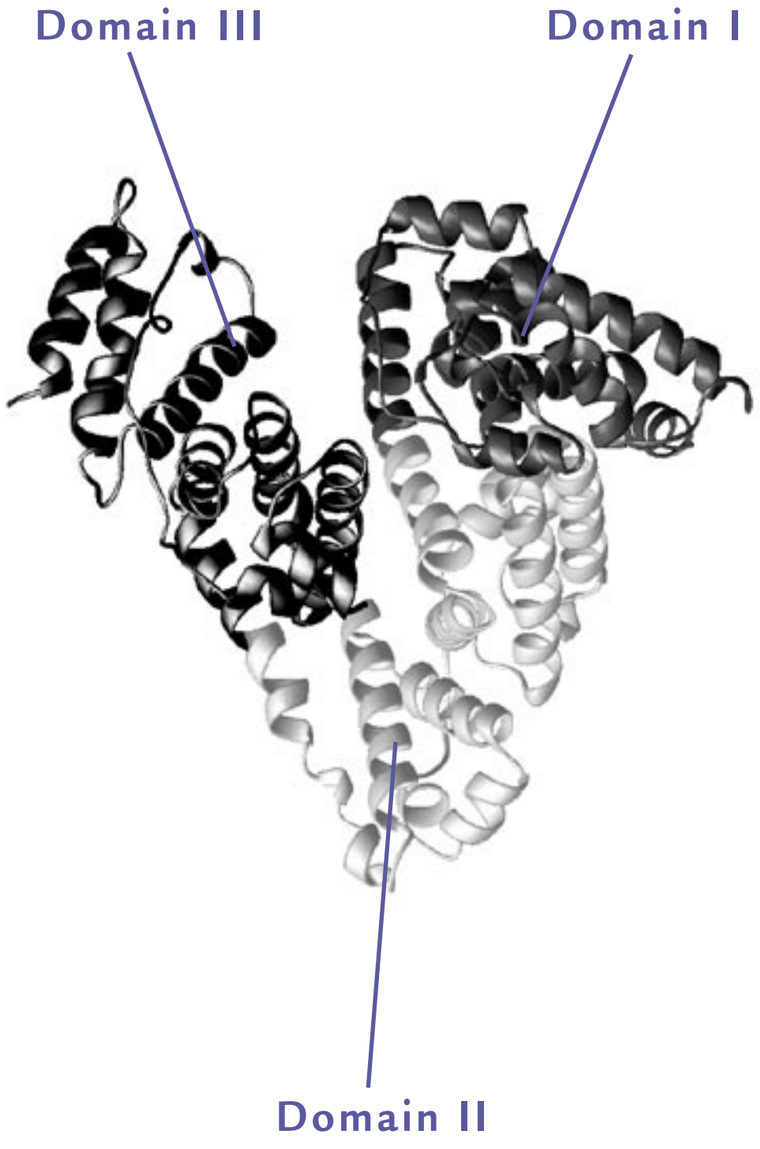
1. That this warranty is in lieu of all other warranties, express or implied;
2. That ALL WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY EXCLUDED AND WAIVED;
3. That the remedy of product replacement is in lieu of all other remedies or claims for damages, consequential or otherwise, which the customer may otherwise have had against NCP.

Exclusive Terms of Sale:
NCP does not agree to and is not bound by any other terms or conditions, unless those terms and conditions have been expressly agreed to in writing by a duly authorized officer of NCP.

Prices specified in the catalog pricing information sheet or elsewhere are subject to change without notice.

Guidelines for Safe Use of the Products:
NCP recommends that our customers follow all applicable guidelines (Federal, State and Local) for research involving the use of recombinant products. This includes the Guidelines for Research involving Recombinant DNA molecules (N.I.H. guidelines) Federal Register, July 5, 1994 (59 FR 34496) and all amendments thereto. NCP disclaims any and all responsibility for any injury or damage which may be caused by the failure of the customer to follow the said guidelines.

Notice to Customer/Buyer/User:
Information presented herein is accurate and reliable to the best of our knowledge and belief, but is not guaranteed to be so. Nothing herein is to be construed as recommending any practice or any product in violation of any patent or in violation of any law or regulation. It is the user's responsibility to determine the suitability of any material and/or procedure for a specific purpose and to adopt such safety precautions in the use of our product as may be necessary or advisable in all the circumstances.



1	11	21	31	41	51
DAHKSEVAHR	FKDLGEENFK	ALVLIAFAQY	LQQCPFEDHV	KLVNEVTEFA	KTCVADESAE
61	71	81	91	101	111
NCDKSLHTLF	GDKLCTVATL	RETYGEMADC	CAKQEPERNE	CFLQHKDDNP	NLPRLVRPEV
121	131	141	151	161	171
DVMCTAFHDN	EETFLKKYLY	EIARRHPYFY	APELLFFAKR	YKAAFTECCQ	AADKAACLLP
181	191	201	211	221	231
KLDELRDEGK	ASSAKQRLKC	ASLQKFGERA	FKAWAVARLS	QRFPKAEFAE	VSKLVTDLTK
241	251	261	271	281	291
VHTECCHGDL	LECADDRADL	AKYICENQDS	ISSKLKECCE	KPLLEKSHCI	AEVENDEMPA
301	311	321	331	341	351
DLPSLAADFV	ESKDVCKNYA	EAKDVFLGMF	LYEYARRHPD	YSVVLLLRLA	KTYETTLEKC
361	371	381	391	401	411
CAAADPHECY	AKVFD EFKPL	VEEPQNLIKQ	NCELFEQLGE	YKFQNALLVR	YTKKVPQVST
421	431	441	451	461	471
PTLVEVSRNL	GKVGSKCCKH	PEAKRMPCAE	DYLSVVLNQL	CVLHEKTPVS	DRVTKCCTES
481	491	501	511	521	531
LVNRRPCFSA	LEVDETYVPK	EFNAETFTFH	ADICTLSEKE	RQIKKQTALV	ELVKHKPKAT
541	551	561	571	581	
KEQLKAVMDD	FAAFVEKCCK	ADDKETCFAE	EGKKLVAASQ	AALGL	

HSA - DOM I:	RESIDUES 1-197
HSA - DOM II:	RESIDUES 189-385
HSA - DOM III:	RESIDUES 381-585

Recombinant Human Serum Albumin
Culture Grade

CATALOG NO.: 9801	QUANTITY: 1g – 100g

PRODUCTION SYSTEM:
- *Pichia pastoris*

PRODUCT CHARACTERISTICS:
- Derived from the prototypical human serum albumin sequence with a deletion at the N-terminus (Asp)
- Free from risk of contamination with human and animal viruses or prions

BIOLOGICAL PROPERTIES:
- Comprises all of the biological properties of Human Serum Albumin with reduced affinity for nickel and copper

PHYSICOCHEMICAL PROPERTIES:
- Molecular Mass 66,357 Dalton
- Isoelectric Point, PI 4.7
- Residues, number 584
- A279nm, 1cm, 0.1% 0.531

PRODUCT APPLICATIONS:
- Cell culture
- Drug delivery
- Drug binding
- Immunobiological applications
- In vivo diagnostics
- In vitro fertilization
- Protein and peptide formulation

PRESENTATION:
- Light yellow to slightly greenish solution

PURITY:
- > 95% monomer content
- Low endotoxin
- Non-detectable Yeast impurities by Western Blot

CONCENTRATION:
- 5% solution

FORMULATION:
- 5% solution in PBS containing 4mM Sodium Caprylate and 4mM Acetyltryptophan
- Custom formulation available

LITERATURE REFERENCES:

1) Carter DC, Ho JX.
Structure of Serum Albumin.
Adv. Protein Chem. 1994;45:153-203. Review.

2) Peters T., Jr
All About Albumin: Biochemistry, Genetics and Medical Applications
Academic Press, Inc., Orlando, FL, 1995

Recombinant Human Serum Albumin
Ultra Pure

CATALOG NO.: 9803	QUANTITY: 1g – 100g

PRODUCTION SYSTEM:
- *Pichia pastoris*

PRODUCT CHARACTERISTICS:
- Derived from the prototypical human serum albumin sequence with a deletion at the N-terminus (Asp)
- Free from risk of contamination with human and animal viruses or prions

BIOLOGICAL PROPERTIES:
- Comprises all of the biological properties of Human Serum Albumin with reduced affinity for nickel and copper

PHYSICOCHEMICAL PROPERTIES:
- Molecular Mass 66,357 Dalton
- Isoelectric Point, PI 4.7
- Residues, number 584
- A279nm, 1cm, 0.1% 0.531

PRODUCT APPLICATIONS:
- Cell culture
- Drug delivery
- Drug binding
- Immunobiological applications
- In vivo diagnostics
- In vitro fertilization
- Protein and peptide formulation

PRESENTATION:
- Limpid light yellowish solution

PURITY:
- > 99% monomer content
- Low endotoxin
- Non-detectable Yeast impurities by Western Blot

CONCENTRATION:
- 5% solution

FORMULATION:
- 5% solution in PBS containing 4mM Sodium Caprylate and 4mM Acetyltryptophan
- Custom formulation available

LITERATURE REFERENCES:

1) Carter DC, Ho JX.
Structure of Serum Albumin.
Adv. Protein Chem. 1994;45:153-203. Review.

2) Peters T., Jr
All About Albumin: Biochemistry, Genetics and Medical Applications
Academic Press, Inc., Orlando, FL, 1995

Recombinant Human Serum Albumin
with Activated Sulfhdryl

CATALOG NO.: 9804	QUANTITY: 1g – 10g

PRODUCTION SYSTEM:
- *Pichia pastoris*

PRODUCT CHARACTERISTICS:
- Derived from the prototypical human serum albumin sequence with a deletion at the N-terminus (Asp)
- Free from risk of contamination with human and animal viruses or prions
- Cys-34 is in the SH or mercaptan form

BIOLOGICAL PROPERTIES:
- Comprises all of the biological properties of Human Serum Albumin with reduced affinity for nickel and copper

PHYSICOCHEMICAL PROPERTIES:
- Molecular Mass 66,357 Dalton
- Isoelectric Point, PI 4.7
- Residues, number 584
- A279nm, 1cm, 0.1% 0.531

PRODUCT APPLICATIONS:
- Drug delivery
- Drug binding

PRESENTATION:
- Light yellow to slightly greenish solution

PURITY:
- > 98% monomer content
- Low endotoxin
- Non-detectable Yeast impurities by Western Blot

CONCENTRATION:
- Customized to customers requirements

ESTIMATED SULFHYDRYL CONTENT:
- 0.9 per albumin molecule

FORMULATION:
- Customized to customers requirements

LITERATURE REFERENCES:

1) Carter DC, Ho JX.
Structure of Serum Albumin.
Adv. Protein Chem. 1994;45:153-203. Review.

2) Peters T., Jr
All About Albumin: Biochemistry, Genetics and Medical Applications
Academic Press, Inc., Orlando, FL, 1995

Recombinant Human Serum Albumin
with Cys-34 Replaced with Met

CATALOG NO.: 9805	QUANTITY: 1g – 10g

PRODUCTION SYSTEM:
- *Pichia pastoris*

PRODUCT CHARACTERISTICS:
- Derived from the prototypical human serum albumin sequence with 3 deletions at the N-terminus
- Free from risk of contamination with human and animal viruses or prions.
- Cys-34 is replaced with Met

BIOLOGICAL PROPERTIES:
- Comprises all of the biological properties of Human Serum Albumin with reduced affinity for nickel, copper and other metals
- Improved stability and homogeneity

PHYSICOCHEMICAL PROPERTIES:
- Molecular Mass 66,176 Dalton
- Isoelectric Point, PI N/D
- Residues, number 582
- A279nm, 1cm, 0.1% N/D

PRODUCT APPLICATIONS:
- Drug delivery
- Drug binding

PRESENTATION:
- Clear solution or white powder

PURITY:
- >95% monomer content

CONCENTRATION:
- Customized to customers requirements

FORMULATION:
- Customized to customers requirements

LITERATURE REFERENCES:

1) Carter DC, Ho JX.
Structure of Serum Albumin.
Adv. Protein Chem. 1994;45:153-203. Review.

2) Peters T., Jr
All About Albumin: Biochemistry, Genetics and Medical Applications
Academic Press, Inc., Orlando, FL, 1995

Recombinant Human Serum Albumin

Domain I*

CATALOG NO.:	9901	QUANTITY:	2mg-100mg

PRODUCTION SYSTEM:

- *Pichia pastoris*

PRODUCT CHARACTERISTICS:

- Contains two extra N-terminal amino acids (Glu-Phe) due to the restriction site used for cloning
- Free from risk of contamination with human and animal viruses or prions
- Defatted

BIOLOGICAL PROPERTIES:

- Long-chain fatty acid binding site
- Primary hemin binding site

PHYSICOCHEMICAL PROPERTIES:

• Molecular Mass	22,860 Dalton
• Isoelectric Point, PI	5.3
• Residues, number	1 - 197
• A279nm, 1cm, 0.1%	0.5

PRODUCT APPLICATIONS:

- Drug binding and displacement studies

PRESENTATION:

- Off-white powder

PURITY:

- > 95%

CONCENTRATION:

- Lyophilized powder

FORMULATION:

- Lyophilized in water

* N15 labeled rHSA domain I available under license.

LITERATURE REFERENCES:

1) Carter D.C., Ho J.X.
Structure of Serum Albumin
Adv. Protein Chem. 1994; 45:153-203
Review

2) Dockal M., Chang, M., Carter, D. C., Ruker, F.
Five Recombinant Fragments of Human Serum Albumin --- Tools for the Characterization of the Warfarin Binding Site.
Protein Sci. 2000 Aug: 9(8): 1455-65

3) Dockal, M., Carter, D.C., Ruker. F.
Conformational Transitions of Three Recombinant Domains of Human Serum Albumin Depending on pH.
J. Biol. Chem. 2000 Feb 4:275(5): 3042-50

4) Dockal, M., Carter, D.C., Ruker. F.
The Three Recombinant Domains of Human Serumm Albumin.
Structural Characterization and Ligand Binding Properties.
J. Biol. Chem. 1999 Oct 8:274(41):29303-10

Recombinant Human Serum Albumin

Domain II*

CATALOG NO.:	9902	QUANTITY:	2mg-100mg

PRODUCTION SYSTEM:

- *Pichia pastoris*

PRODUCT CHARACTERISTICS:

- Contains two extra N-terminal amino acids (Glu-Phe) due to the restriction site used for cloning
- Free from risk of contamination with human and animal viruses or prions
- Defatted

BIOLOGICAL PROPERTIES:

- High affinity binding site for small heterocyclic or aromatic compounds
- Binding site for warfarin with a 23 times reduced affinity compared to HSA

PHYSICOCHEMICAL PROPERTIES:

• Molecular Mass	22,519 Dalton
• Isoelectric Point, PI	5.1
• Residues, number	189 - 385
• A279nm, 1cm, 0.1%	0.79

PRODUCT APPLICATIONS:

- Drug binding studies

PRESENTATION:

- Off-white powder

PURITY:

- > 95%

CONCENTRATION:

- Lyophilized powder

FORMULATION:

- Lyophilized in water

* N15 labeled rHSA domain II available under license.

LITERATURE REFERENCES:

1) Carter D.C., Ho J.X.
Structure of Serum Albumin
Adv. Protein Chem. 1994; 45:153-203
Review

2) Dockal M., Chang, M., Carter, D. C., Ruker, F.
Five Recombinant Fragments of Human Serum Albumin --- Tools for the Characterization of the Warfarin Binding Site.
Protein Sci. 2000 Aug: 9(8): 1455-65

3) Dockal, M., Carter, D.C., Ruker. F.
Conformational Transitions of the Three Recombinant Domains of Human Serum Albumin Depending on pH.
J. Biol. Chem. 2000 Feb 4:275(5): 3042-50

4) Dockal, M., Carter, D.C., Ruker. F.
The Three Recombinant Domains of Human Serum Albumin.
Structural Characterization and Ligand Binding Properties.
J. Biol. Chem. 1999 Oct 8:274(41):29303-10

Recombinant Human Serum Albumin

Domain III*

CATALOG NO.:	9903	QUANTITY:	2mg-100mg

PRODUCTION SYSTEM:
- *Pichia pastoris*

PRODUCT CHARACTERISTICS:
- Contains two extra N-terminal amino acids (Glu-Phe) due to the restriction site used for cloning
- Free from risk of contamination with human and animal viruses or prions
- Defatted

BIOLOGICAL PROPERTIES:
- High affinity binding site for small heterocyclic or aromatic compounds
- Long-chain fatty acid binding site

PHYSICOCHEMICAL PROPERTIES:

• Molecular Mass	23,383 Dalton
• Isoelectric Point, PI	6.5
• Residues, number	381 - 585
• A279nm, 1cm, 0.1%	0.3

PRODUCT APPLICATIONS:
- Drug binding and displacement studies

PRESENTATION:
- Off-white powder

PURITY:
- > 95%

CONCENTRATION:
- Lyophilized powder

FORMULATION:
- Lyophilized in water

* N15 labeled rHSA domain III available under license.

LITERATURE REFERENCES:

1) Carter D.C., Ho J.X.
Structure of Serum Albumin
Adv. Protein Chem. 1994; 45:153-203
Review

2) Dockal M., Chang, M., Carter, D. C., Ruker, F.
Five Recombinant Fragments of Human Serum
Albumin --- Tools for the Characterization of the
Warfarin Binding Site.
Protein Sci. 2000 Aug: 9(8): 1455-65

3) Dockal, M., Carter, D.C., Ruker. F.
Conformational Transitions of Three
Recombinant Domains of Human Serum
Albumin Depending on pH.
J. Biol. Chem. 2000 Feb 4:275(5): 3042-50

4) Dockal, M., Carter, D.C., Ruker. F.
The Three Recombinant Domains of Human Serumm Albumin.
Structural Characterization and Ligand Binding Properties.
J. Biol. Chem. 1999 Oct 8:274(41):29303-10

Recombinant Human Serum Albumin

Domain I-IIA

CATALOG NO.:	9904	QUANTITY:	2mg-100mg

PRODUCTION SYSTEM:
- *Pichia pastoris*

PRODUCT CHARACTERISTICS:
- Contains two extra N-terminal amino acids (Glu-Phe) due to the restriction site used for cloning
- Free from risk of contamination with human and animal viruses or prions
- Defatted

BIOLOGICAL PROPERTIES:
- Binding site for warfarin

PHYSICOCHEMICAL PROPERTIES:

• Molecular Mass	34,420 Dalton
• Isoelectric Point, PI	5.1
• Residues, number	1 - 299
• A279nm, 1cm, 0.1%	0.56

PRODUCT APPLICATIONS:
- Drug binding and displacement studies

PRESENTATION:
- Off-white powder

PURITY:
- > 95%

CONCENTRATION:
- Lyophilized powder

FORMULATION:
- Lyophilized in water

LITERATURE REFERENCES:

1) Carter D.C., Ho J.X.
Structure of Serum Albumin
Adv. Protein Chem. 1994; 45:153-203
Review

2) Dockal M., Chang, M., Carter, D. C., Ruker, F.
Five Recombinant Fragments of Human Serum
Albumin --- Tools for the Characterization of the
WarfarinBinding Site.
Protein Sci. 2000 Aug: 9(8): 1455-65

3) Dockal, M., Carter, D.C., Ruker. F.
Conformational Transitions of Three
Recombinant Domains of Human Serum
Albumin Depending on pH.
J. Biol. Chem. 2000 Feb 4:275(5): 3042-50

4) Dockal, M., Carter, D.C., Ruker. F.
The Three Recombinant Domains of Human Serumm Albumin.
Structural Characterization and Ligand Binding Properties.
J. Biol. Chem. 1999 Oct 8:274(41):29303-10

Recombinant Human Serum Albumin

Domain I-II

CATALOG NO.:	9905	QUANTITY:	2mg-100mg

PRODUCTION SYSTEM:
- *Pichia pastoris*

PRODUCT CHARACTERISTICS:
- Contains two extra N-terminal amino acids (Glu-Phe) due to the restriction site used for cloning
- Free from risk of contamination with human and animal viruses or prions
- Defatted

BIOLOGICAL PROPERTIES:
- High affinity binding site for small heterocyclic or aromatic compounds
- Binding site for warfarin
- Binding site for hemin

PHYSICOCHEMICAL PROPERTIES:
- Molecular Mass 44,243 Dalton
- Isoelectric Point, PI 4.9
- Residues, number 1 - 385
- A279nm, 1cm, 0.1% 0.7

PRODUCT APPLICATIONS:
- Drug binding and displacement studies

PRESENTATION:
- Off-white powder

PURITY:
- > 95%

CONCENTRATION:
- Lyophilized powder

FORMULATION:
- Lyophilized in water

LITERATURE REFERENCES:

1) Carter D.C., Ho J.X.
Structure of Serum Albumin
Adv. Protein Chem. 1994; 45:153-203
Review

2) Dockal M., Chang, M., Carter, D. C., Ruker, F.
Five Recombinant Fragments of Human Serum Albumin --- Tools for the Characterization of the Warfarin Binding Site.
Protein Sci. 2000 Aug: 9(8): 1455-65

3) Dockal, M., Carter, D.C., Ruker. F.
Conformational Transitions of Three Recombinant Domains of Human Serum Albumin Depending on pH.
J. Biol. Chem. 2000 Feb 4:275(5): 3042-50

4) Dockal, M., Carter, D.C., Ruker. F.
The Three Recombinant Domains of Human Serumm Albumin.
Structural Characterization and Ligand Binding Properties.
J. Biol. Chem. 1999 Oct 8:274(41):29303-10

Recombinant Human Serum Albumin

Domain IB-II

CATALOG NO.:	9906	QUANTITY:	2mg-100mg

PRODUCTION SYSTEM:
- *Pichia pastoris*

PRODUCT CHARACTERISTICS:
- Contains two extra N-terminal amino acids (Glu-Phe) due to the restriction site used for cloning
- Free from risk of contamination with human and animal viruses or prions
- Defatted

BIOLOGICAL PROPERTIES:
- Binding site for warfarin with a four-fold reduced affinity compared to HSA

PHYSICOCHEMICAL PROPERTIES:
- Molecular Mass 32,075 Dalton
- Isoelectric Point, PI 5.2
- Residues, number 108 - 385
- A279nm, 1cm, 0.1% 0.79

PRODUCT APPLICATIONS:
- Drug binding and displacement studies

PRESENTATION:
- Off-white powder

PURITY:
- > 95%

CONCENTRATION:
- Lyophilized powder

FORMULATION:
- Lyophilized in water

LITERATURE REFERENCES:

1) Carter D.C., Ho J.X.
Structure of Serum Albumin
Adv. Protein Chem. 1994; 45:153-203
Review

2) Dockal M., Chang, M., Carter, D. C., Ruker, F.
Five Recombinant Fragments of Human Serum Albumin --- Tools for the Characterization of the Warfarin Binding Site.
Protein Sci. 2000 Aug: 9(8): 1455-65

3) Dockal, M., Carter, D.C., Ruker. F.
Conformational Transitions of Three Recombinant Domains of Human Serum Albumin Depending on pH.
J. Biol. Chem. 2000 Feb 4:275(5): 3042-50

4) Dockal, M., Carter, D.C., Ruker. F.
The Three Recombinant Domains of Human Serumm Albumin.
Structural Characterization and Ligand Binding Properties.
J. Biol. Chem. 1999 Oct 8:274(41):29303-10

Recombinant Human Serum Albumin Y411F

CATALOG NO.: 9701	QUANTITY: 2mg-100mg

PRODUCTION SYSTEM:
- *Pichia pastoris*

PRODUCT CHARACTERISTICS:
- Contains two extra N-terminal amino acids (Glu-Phe) due to the restriction site used for cloning
- Free from risk of contamination with human and animal viruses or prions
- Defatted and decolored

BIOLOGICAL PROPERTIES:
- Involved in binding of various ligands in site II
- Key residue for esterase activity of HSA.
- Mediates increase cholesterol efflux from cultured cells

PHYSICOCHEMICAL PROPERTIES:
- Molecular Mass 66,732 Dalton
- Isoelectric Point, PI N/D
- Residues, number 587
- A279nm, 1cm, 0.1% N/D

PRODUCT APPLICATIONS:
- Drug binding studies
- Basic research

PRESENTATION:
- Off-white powder

PURITY:
- > 95%

CONCENTRATION:
- Lyophilized powder

FORMULATION:
- Lyophilized in water

LITERATURE REFERENCES:

1) Watanabe H, Tanase S, Nakajou K, Maruyama T, Kragh-Hansen U, Otagiri M.
Role of Arg-410 and Tyr-411 in Human Serum Albumin for Ligand Binding and Esterase-like Activity.
Biochem. J. 2000 Aug 1:349 Pt 3:813-9.

2) Dubois-Presle N, Lapicque F, Maurice MH, Fournel-Gigleux S, Magdalou J, Abiteboul M, Siest G, Netter P.
Stereoselective Esterase Activity of Human Serum Albumin Toward Ketoprofen Glucuronide.
Mol. Pharmacol. 1995 Mar; 47(3):647-53.

3) Maruyama T, Lin CC, Yamasaki K, Miyoshi T, Yamasaki M, Otagiri M.
Binding of Suprofen to Human Serum Albumin. Role of the Suprofen Carboxyl Group.
Biochem. Pharmacol. 1993 Mar 9;45(5):1017-26.

4) Nomura T, Sakamoto K, Imai T, Otagiri M.
Study of Interaction of Pranoprofen with Human Serum Alumin: Binding Properties of Enantiomers and Metabolite.
J. Pharmacobiodyn. 1992 Oct; 15(10):589-96.

5) Carter DC, Ho JX.
Structure of Serum Albumin.
Adv. Protein Chem. 1994;45:153-203. Review.

Recombinant Human Serum Albumin W214A

CATALOG NO.: 9702	QUANTITY: 2mg-100mg

PRODUCTION SYSTEM:
- *Pichia pastoris*

PRODUCT CHARACTERISTICS:
- Contains two extra N-terminal amino acids (Glu-Phe) due to the restriction site used for cloning
- Free from risk of contamination with human and animal viruses or prions
- Defatted and decolored

BIOLOGICAL PROPERTIES:
- Involved in binding of various ligands in site I
- Decreased binding of warfarin
- Decreased protein stability
- W214 is the only Trp residue in HSA

PHYSICOCHEMICAL PROPERTIES:
- Molecular Mass 66,633 Dalton
- Isoelectric Point, PI N/D
- Residues, number 587
- A279nm, 1cm, 0.1% N/D

PRODUCT APPLICATIONS:
- Drug binding studies
- Basic research

PRESENTATION:
- Off-white powder

PURITY:
- > 95%

CONCENTRATION:
- Lyophilized powder

FORMULATION:
- Lyophilized in water

LITERATURE REFERENCES:

1) Watanabe H, Kragh-Hansen U, Tanase S, Nakajou K, Mitarai M, Iwao Y, Maruyama T, Otagiri M.
Conformational Stability and Warfarin-binding Properties of Human Serum Albumin Studied by Recombinant Mutants.
Biochem. J. 2001 Jul 1: 357 (Pt. 1):269-74.

2) Carter DC, Ho JX.
Structure of Serum Albumin.
Adv. Protein Chem. 1994;45:153-203. Review.

3) "All About Albumin. Biochemistry, Genetics, and Medical Applications", by Theodore Peters, Jr., 452pp. Academic Press, San Diego, 1995

Recombinant Human Serum Albumin R218H

CATALOG NO.: 9703	QUANTITY: 2mg-100mg

PRODUCTION SYSTEM:
- *Pichia pastoris*

PRODUCT CHARACTERISTICS:
- Contains two extra N-terminal amino acids (Glu-Phe) due to the restriction site used for cloning
- Free from risk of contamination with human and animal viruses or prions
- Defatted and decolored

BIOLOGICAL PROPERTIES:
- Two distinct genotypes that result in the amino acid substitutions R218P and R218H in subdomain IIA of human serum albumin (HSA) have been identified as the cause of familial dysalbuminemic hyperthyroxinemia (FDH). These substitutions increase the affinity of subdomain IIA for thyroxine by approximately 10-fold elevating plasma thyroxine levels in affected individuals

PHYSICOCHEMICAL PROPERTIES:
- Molecular Mass 66,729 Dalton
- Isoelectric Point, PI N/D
- Residues, number 587
- A279nm, 1cm, 0.1% N/D

PRODUCT APPLICATIONS:
- Drug binding studies
- Basic research

PRESENTATION:
- Off-white powder

PURITY:
- > 95%

CONCENTRATION:
- Lyophilized powder

FORMULATION:
- Lyophilized in water

LITERATURE REFERENCES:

1) Peptitas I, Peterson CE, Ha CE, Bhattacharya AA, Zunszain PA, Ghuman J, Bhagavan NV, Curry S. Stuctural Basis of Albumin-thyroxine Interactions and Familial Dysalbuminemic Hyperthyroxinemia. Proc. Natl. Acad. Sci. USA. 2003 May 27;100(11): 6440-5. Epub 2003 May 12.

2) Yang J, Petersen CE, Ha CE, Bhagavan NV. Stuctural Insights to Human Serum Albumin-mediated Prostaglandin Catalysis. Protein Sci. 2002 Mar;11(3):538-45.

3) Pohlenz J, Shadow PM, Koffler T, Schonberger W, Weiss RE, Refetoff S. Congenital Hypothyroidism in a Child with Unsuspected Familial Dysalbuminemic Hyperoxinemia Caused by a Mutation (R218H) in the Human Albumin Gene. J. Pediatr. 2001 Dec;139(6):887-9

4) Watanabe H, Kragh-Hansen U, Tanase S, Nakajou K, Mitarai M, Iwao Y, Maruyama T, Otagiri M. Conformational Stability and Warfarin-binding Properties of Human Serum Albumin Studied by Recombinant Mutants. Biochem J. 2001 Jul 1;357(Pt 1):269-74. PMID: 11415459 [PubMed–indexed for MEDLINE]

Recombinant Human Serum Albumin R114G

CATALOG NO.: 9704	QUANTITY: 2mg-100mg

PRODUCTION SYSTEM:
- *Pichia pastoris*

PRODUCT CHARACTERISTICS:
- Contains two extra N-terminal amino acids (Glu-Phe) due to the restriction site used for cloning
- Free from risk of contamination with human and animal viruses or prions
- Defatted and decolored

BIOLOGICAL PROPERTIES:
- Naturally occurring mutant YANOMAMA-2
- decreased bilirubin binding has been shown

PHYSICOCHEMICAL PROPERTIES:
- Molecular Mass 66,649 Dalton
- Isoelectric Point, PI N/D
- Residues, number 587
- A279nm, 1cm, 0.1% N/D

PRODUCT APPLICATIONS:
- Drug binding studies
- Basic research

PRESENTATION:
- Off-white powder

PURITY:
- > 95%

CONCENTRATION:
- Lyophilized powder

FORMULATION:
- Lyophilized in water

LITERATURE REFERENCES:

1) Lorey FW, Ahlfors CE, Smith DG, Neel JV. Bilirubin Binding by Variant Albumin in Yanomama Indians. Am. J. Hum. Genet. 1984 Sep;36(5):1112-20.

2) Tanis R, Ferrell RE, Nell JV, Morrow M. Albumin Yanomama-2, a "Private" Polymorphism of Serum Albumin. Ann. Hum. Genet. 1974 Oct;38(2):179-90.

3) Carter DC, Ho JX. Structure of Serum Albumin. Adv. Protein Chem. 1994;45:153-203. Review.

4) "All About Albumin. Biochemistry, Genetics, and Medical Applications", by Theodore Peters, Jr., 452pp. Academic Press, San Diego, 1995

Recombinant Human Serum Albumin K525A*

CATALOG NO.: 9705	QUANTITY: 2mg-100mg

PRODUCTION SYSTEM:
- *Pichia pastoris*

PRODUCT CHARACTERISTICS:
- Contains two extra N-terminal amino acids (Glu-Phe) due to the restriction site used for cloning
- Free from risk of contamination with human and animal viruses or prions
- Defatted and decolored

BIOLOGICAL PROPERTIES:
- Lysine-525 is the predominant site of non-enzymatic glycosylation and has been shown to be reactive with various other ligands (e.g. the polyene antibiotic amphotericin B, certain beta-lactam antibiotics (cephalosporines), tolmetin glucuronide

PHYSICOCHEMICAL PROPERTIES:
- Molecular Mass 66,691 Dalton
- Isoelectric Point, PI N/D
- Residues, number 587
- A279nm, 1cm, 0.1% N/D

PRODUCT APPLICATIONS:
- Drug binding studies
- Basic research

PRESENTATION:
- Off-white powder

PURITY:
- > 95%

CONCENTRATION:
- Lyophilized powder

FORMULATION:
- Lyophilized in water

*rHSA Domain III K525A also available.

LITERATURE REFERENCES:

1) Romanini D, Muller G, Pico G.
Use of Amphotericin B as Optical Probe to Study Conformational Changes and Thermodynamic Stability in Human Serum Albumin.
J. Protein Chem. 2002 Nov;21(8):505-14.

2) Nerli B, Romanini D, Pico G.
Structural Specificity Requirements in the Binding of Beta lactam Antibiotics to Human Serum Albumin.
Chem. Biol. Interact. 1997 May 2;104(2-3):179-202.

3) Ding A, Zia-Amirhosseini P, McDonagh AF, Bulingame AL, Benet LZ. Reactivity of Tolmetin Glucuronide with Human Serum Albumin. Identification of Binding Sites and Mechanisms of Reaction by Tandem Mass Spectrometry.
Drug Metab Dispos. 1995 Mar;23(3):369-76.

4) Ding A, Ojingwa JC, McDonagh AF, Burlingame AL, Benet LZ.
Evidence for Covalent Binding of Acyl Glucuronides to Serum Albumin Via an Imine Mechanism as Revealed by Tandem Mass Spectrometry.
Proc. Natl. Acad. Sci. USA. 1993 May 1;90(9):3797-801.

Recombinant Human Serum Albumin D375H

CATALOG NO.: 9706	QUANTITY: 2mg-100mg

PRODUCTION SYSTEM:
- *Pichia pastoris*

PRODUCT CHARACTERISTICS:
- Contains two extra N-terminal amino acids (Glu-Phe) due to the restriction site used for cloning
- Free from risk of contamination with human and animal viruses or prions
- Defatted and decolored

BIOLOGICAL PROPERTIES:
- Naturally occurring mutant "Milano-slow"

PHYSICOCHEMICAL PROPERTIES:
- Molecular Mass 66,770 Dalton
- Isoelectric Point, PI N/D
- Residues, number 587
- A279nm, 1cm, 0.1% N/D

PRODUCT APPLICATIONS:
- Drug binding studies
- Basic research

PRESENTATION:
- Off-white powder

PURITY:
- > 95%

CONCENTRATION:
- Lyophilized powder

FORMULATION:
- Lyophilized in water

LITERATURE REFERENCES:

1) Gilliano M, Watkins S, Madison J, Putnam FW, Kragh-Hansen U, Cesati R, Minchiotti L.
Structural Characterization of Three Genetic Variants of Human Serum Albumin Modified in Subdomains IIB and IIIA.
Eur. J. Biochem. 1998 Jan. 15;251(1-2):329-34.

2) Carter DC, Ho JX.
Structure of Serum Albumin.
Adv. Protein Chem. 1994;45:153-203. Review.

3) "All about Albumin. Biochemistry, Genetics, and Medical Applications", by Theodore Peters, Jr., 452pp. Academic Press, San Diego, 1995

Recombinant Mouse Serum Albumin

CATALOG NO.:	2601	QUANTITY:	10mg - 1g

PRODUCTION SYSTEM:
- *Pichia pastoris*

PRODUCT CHARACTERISTICS:
- Derived from the prototypical mouse serum albumin sequence

BIOLOGICAL PROPERTIES:
- Comprises all of the biological properties of Mouse Serum Albumin

PHYSICOCHEMICAL PROPERTIES:
- Molecular Mass 68,692 Dalton
- Isoelectric Point, PI 5.75
- Residues, number 584
- A279nm, 1cm, 0.1% N/D

PRESENTATION:
- Off-white powder

PURITY:
- > 95%

CONCENTRATION:
- Lyophilized powder

FORMULATION:
- Lyophilized in water

PRODUCT APPLICATIONS:
- Drug design
- Basic research

LITERATURE REFERENCES:

1) Gene Bank Accession Number: XM-132149

Rabbit Anti-HSA

CATALOG NO.:	001	QUANTITY:	1ml

PRODUCTION SYSTEM:
- Rabbit

PRODUCT CHARACTERISTICS:
- Antiserum

IMMUNOGEN:
- HSA isolated from human plasma

TITER:
- 1:1000

SPECIFICITY:
- NCP Rabbit Anti-HSA reacts with rHSA Domain I, II, III, I-II, rHSA and HSA

PRODUCT APPLICATIONS:
- Immunoblotting and ELISA

Rabbit Anti-rHSA Domain I

CATALOG NO.: 002	QUANTITY: 1ml

PRODUCTION SYSTEM:
- Rabbit

PRODUCT CHARACTERISTICS:
- Antiserum

IMMUNOGEN:
- rHSA Domain I derived from *Pichia pastoris*

TITER:
- 1:1000

SPECIFICITY:
- NCP Rabbit Anti-rHSA Domain I reacts with rHSA Domain I, I-II, rHSA and HSA. The anti-serum does not react with rHSA Domain II and III

PRODUCT APPLICATIONS:
- Immunoblotting and ELISA

Rabbit Anti-rHSA Domain II

CATALOG NO.: 003	QUANTITY: 1ml

PRODUCTION SYSTEM:
- Rabbit

PRODUCT CHARACTERISTICS:
- Antiserum

IMMUNOGEN:
- rHSA Domain II derived from *Pichia pastoris*

TITER:
- 1:1000

SPECIFICITY:
- NCP Rabbit Anti-rHSA Domain II reacts with rHSA Domain II, I-II, rHSA and HSA. The anti-serum does not react with rHSA Domain I and III

PRODUCT APPLICATIONS:
- Immunoblotting and ELISA

Rabbit Anti-rHSA Domain III

CATALOG NO.: 004	QUANTITY: 1ml

PRODUCTION SYSTEM:
- Rabbit

PRODUCT CHARACTERISTICS:
- Antiserum

IMMUNOGEN:
- rHSA Domain III derived from *Pichia pastoris*

TITER:
- 1:1000

SPECIFICITY:
- NCP Rabbit Anti-rHSA Domain III reacts with rHSA Domain III, rHSA and HSA. The anti-serum does not react with rHSA Domain I, II and I-II

PRODUCT APPLICATIONS:
- Immunoblotting and ELISA

Rabbit Anti-rHSA Domain I-II

CATALOG NO.: 005	QUANTITY: 1ml

PRODUCTION SYSTEM:
- Rabbit

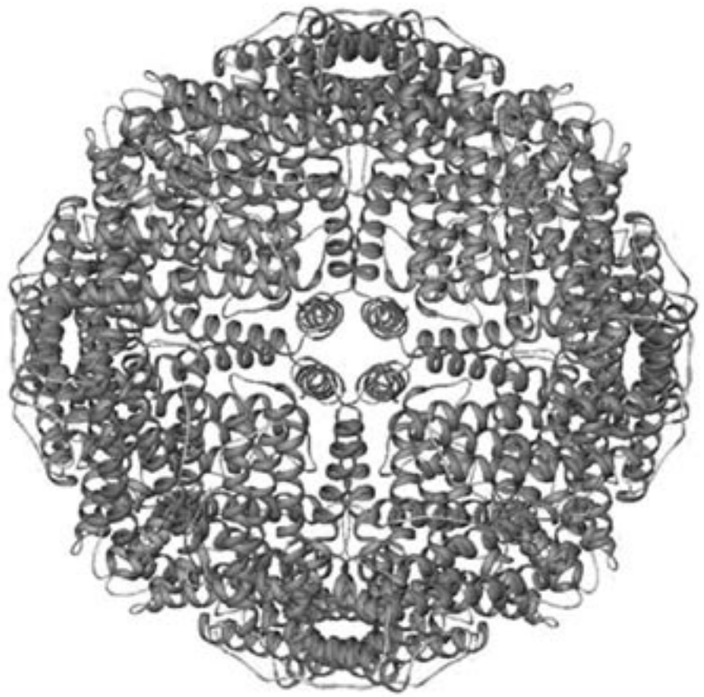
PRODUCT CHARACTERISTICS:
- Antiserum

IMMUNOGEN:
- rHSA Domain 1-II derived from *Pichia pastoris*

TITER:
- 1:1000

SPECIFICITY:
- NCP Rabbit Anti-rHSA Domain III reacts with rHSA Domain I, II, rHSA and HSA. The anti-serum does not react with rHSA Domain III

PRODUCT APPLICATIONS:
- Immunoblotting and ELISA



1	11	21	31	41	51
MSSQIRQNYS	TDVEAAVNSL	VNLYLQASYT	YLSLGFYFDR	DDVALEGVSH	FFRELAEEKR
61	71	81	91	101	111
EGYERLLKMQ	NQRGGRALFQ	DIKKPAEDEW	GKTPDAMKAA	MALEKKLNQA	LLDLHALGSA
121	131	141	151	161	171
RTDPHLCDFL	ETHFLDEEVK	LIKKMGDHLT	NLHRLGGPEA	GLGEYLFERL	TLKHD

Recombinant Human Ferritin
Light Chain

CATALOG NO.:	2401	QUANTITY:	10mg-100mg

PRODUCTION SYSTEM:
- Bacteria

PRODUCT CHARACTERISTICS:
- Full-length human light chain associated with a higher PI and lower iron content
- Consists of a protein shell of 24 subunits

BIOLOGICAL PROPERTIES:
- Iron regulatory protein
- Enzymatic properties
- A member of the protein family that orchestrates the cellular defense against stress and inflammation

PHYSICOCHEMICAL PROPERTIES:
- Molecular Mass 456,000 Dalton
- Isoelectric Point, PI 5.5
- Residues, number 4,200

PRODUCT APPLICATIONS:
- Basic research

PRESENTATION:
- Clear solution

PURITY:
- >95%

CONCENTRATION:
- 1mg/ml

FORMULATION:
- 50mM Tris-HCl, pH 7.0

LITERATURE REFERENCES:

1) Torti, F.M. and Torti, S.V.
Regulation of Ferritin Genes and Protein.
Blood 15 May 2002. Volume 99, No. 10

2) Boyd, D., Vecoli, C., Belcher, D.M., Jain, S.K., and Drysdale, J.W.
Structural and Functional Relationships of Human Ferritin H and L Chains Deduced from cDNA Clones
J. Bio. Chem. 1985 Sep 25 260(21): 11755-11761

3) Theil, E.
Ferritin: Structure, Gene, Regulation, and Cellular Function in Animals, Plants, and Microorganisms.
Ann. Rev. Biochem. 1987 56:289-315

Rabbit Anti-rHuman Ferritin
Light Chain

CATALOG NO.:	006	QUANTITY:	1ml

PRODUCTION SYSTEM:
- Rabbit

PRODUCT CHARACTERISTICS:
- Antiserum

IMMUNOGEN:
- Recombinant Human Ferritin light chain derived from bacteria

TITER:
- 1:1000

SPECIFICITY:
- No cross-reactivity with rat ferritin

PRODUCT APPLICATIONS:
- Immunoblotting and ELISA

Amino Acid Sequence of Recombinant Human Alpha-1 Acid Glycoprotein

1	11	21	31	41	51
QIPLCANLVP	VPITNATLDQ	ITGKWFYIAS	AFRNEEYNKS	VQEIQATFFY	FTPNKTEDTI
61	71	81	91	101	111
FLREYQTRQD	QCIYNTTYLN	VQRENGTISR	YVGGQEHFAH	LLILRDTKTY	MLAFDVNDEK
121	131	141	151	161	171
NWGLSVYADK	PETTKEQLGE	FYEALDCLRI	PKSDVVYTDW	KKDKCEPLEK	QHEKERKQEE
181					
GES					

Recombinant Human Alpha-1 Acid Glycoprotein

Glycosylated (Yeast)

CATALOG NO.: 2301	QUANTITY: 2mg

PRODUCTION SYSTEM:

- *Pichia pastoris*

PRODUCT CHARACTERISTICS:

- Derived from prototypical human alpha-1 acid glycoprotein sequence
- Glycosylated

BIOLOGICAL PROPERTIES:

- Various immunomodulating effects
- Binds to basic drugs and many other molecules

PHYSICOCHEMICAL PROPERTIES:

- Molecular Mass 41-43 kDa
- Isoelectric Point, PI 2.8 – 3.8
- Residues, number 183

PRODUCT APPLICATIONS:

- Drug binding and displacement studies
- basic research

PRESENTATION:

- Clear to light yellow solution

PURITY:

- > 95%

CONCENTRATION:

- 1mg/ml

FORMULATION:

- 20mM Tris-HCl, pH 7.0

LITERATURE REFERENCES:

1) Israili, Z.H. and Dayton, P.G.
Human Alpha-1 Glycoprotein And Its Interaction With Drugs.
Drug Metabolism Review, 33(2), 161 – 235 (2001)
Review.

2) Fournier, T, Medjoubi-N. and Porquet, D.
Alpha-1-Acid Glycoprotein.
Biochimica et Biophysica Acta 1482(2000) 157 - 171
Review.

Rabbit Anti-Human AGP

CATALOG NO.: 007	QUANTITY: 1ml

PRODUCTION SYSTEM:
- Rabbit

PRODUCT CHARACTERISTICS:
- Antiserum

IMMUNOGEN:
- AGP derived from human plasma

TITER:
- 1:1000

SPECIFICITY:
- Specific for human AGP
- No cross reactivity with other human proteins tested

PRODUCT APPLICATIONS:
- Immunoblotting and ELISA