



Chondrex, Inc.

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Ordering Information

Orders and Support

Orders are accepted by web, email, fax, or phone between 8:30 AM and 5 PM, Pacific Standard Time, Monday through Friday.

Email: support@chondrex.com

Web: www.chondrex.com

Phone: 425.702.6365

Toll-Free: 888.246.6373

Fax: 425.882.3094

Please provide the following information to expedite your order:

1. Customer name and telephone number
2. Shipping address
3. Billing address
4. Catalog number and product description
5. Quantity of product
6. Purchase order number or credit card information (card holder name, credit card number, and expiration date). Visa, Mastercard, and American Express are accepted.



7. Custom broker's name and telephone number (if applicable)
8. VAT number (if applicable)

Discounted pricing is available for bulk orders. Please inquire about the specifics when requesting a quotation.

Shipping

Continental USA Orders are generally shipped within 1-2 working days by FedEx standard overnight delivery.

International Orders are normally shipped within 2-5 working days.

Shipping and Handling Charges are prepaid and added to the invoice. Products are shipped FCA Redmond, WA 98052, USA.

Pricing and Terms

We reserve the right to discontinue or change product specifications, including price, at any time without notice. For the most up-to-date pricing information on products, please visit www.chondrex.com.

Our payment terms are net 30 days from the date of shipment on pre-approved purchase order accounts, payable in US dollars, and subject to a 1.5% monthly late fee if payment is not received within 30 days after shipping.

Remit Payments to: Chondrex, Inc.
2607 151st Place NE
Redmond, WA 98052
USA

International Customers, please make payments in US dollars by check drawn from a US bank, by money order or by wire transfer. The customer is responsible for all bank service charges.

Support

For customer and technical support, please email support@chondrex.com or call 425.702.6365 or 888.246.6373 during normal business hours. We are happy to discuss any questions you may have regarding our products and protocols.

Returns

Please call Customer Service for a Return Material Authorization number and shipping instructions. A 30% restocking fee may apply depending on the circumstances of the return.

Warranty

Chondrex warrants that its Products will conform to their applicable published specifications at the time of delivery, or until the specified expiration date, whichever first occurs, when used and stored in accordance with applicable instructions. This warranty is exclusive. Chondrex makes no other warranty, express or implied, including any implied warranty of merchantability or fitness for any particular purpose. The warranty provided herein and the data, specifications and descriptions of Chondrex Products appearing in Chondrex's published Product literature may not be altered except by express written agreement signed by an officer of Chondrex.

In the event of a breach of the foregoing warranty, Chondrex's sole obligation shall be to replace the applicable Product, provided Buyer notifies Chondrex promptly of any such breach. If after exercising reasonable efforts, Chondrex is unable to replace the Product, then Chondrex shall refund to Buyer all monies paid for such Product. Chondrex's sole and exclusive liability and Buyer's exclusive remedy with respect to Products proved to Chondrex's satisfaction to be defective or nonconforming shall be replacement of such Products without charge or refund of the purchase price, in Chondrex's sole discretion, upon the return of such non-conforming Products to Chondrex in accordance with Chondrex's instructions. All warranty claims must be brought within six (6) months of shipment, regardless of their nature.

Please refer to Chondrex's "Terms and Conditions" for more information.

Product Usage

In general, all products listed are for "Research Use Only" and are not intended for diagnostic use in humans or animals.

Animal Models

Allergy

The type I hypersensitivity reaction mediated by IgE is a typical clinical feature of allergic diseases, such as asthma, eczema, hay fever, and urticaria. Ovalbumin (OVA) is widely used as an antigen for studying the IgE-mediated allergic reaction in mice. Chondrex provides allergenic and non-allergenic mouse anti-OVA IgE and IgG monoclonal antibodies for studying allergic diseases, such as *in vivo* hyper-sensitivity reactions, and related kits for *in vitro* and *in vivo* experiments.

Mouse Anti-OVA IgE and IgG Monoclonal Antibodies

Clone	Application		Quantity	Catalog #
	In Vitro	In Vivo		
E-C1 (IgE)	Mast cell activation	Hyper-sensitivity reaction	1 mg, lyophilized	3006
E-G5 (IgE)	No	No	1 mg, lyophilized	3007
L-71 (IgG)	No	No	1 mg, lyophilized	3008

Adjuvant-Induced Arthritis

Adjuvant-Induced Arthritis (AIA) was used as a model for rheumatoid arthritis (RA) and is currently considered as a model for reactive arthritis. Chondrex provides various types of Complete Freund's Adjuvant (CFA) for inducing AIA. AIA can be easily induced in susceptible strains of rats by a single subcutaneous injection of adjuvant (0.05-0.1 ml) into a footpad or at the base of the tail.

High *M. Tuberculosis* Content Complete Freund's Adjuvant

Description	Content of <i>M. Tuberculosis</i> H-37 RA	Quantity	Catalog #
CFA	5 mg/ml	5 ml	7023
	10 mg/ml	5 ml	7027
	20 mg/ml	5 ml	7024

Animal Models

Collagen Antibody-Induced Arthritis

Collagen Antibody-Induced Arthritis (CAIA) has been widely used since 1998 when Chondrex started distributing 4-clone cocktail (Arthrogen-CIA® arthritogenic monoclonal antibodies) kits. In order to induce consistent arthritis more effectively in various mouse strains including CAIA low responder C57BL/6 mice, and a variety of unpredictable knockout and transgenic mice with C57BL/6 (H-2^b) or 129/Sv (H-2^b) backgrounds, Chondrex developed new 5-clone cocktail kits by adding a new clone to the 4-clone cocktail.

Arthritogenic Monoclonal Antibody 5-Clone Cocktails

Description	Quantity	Catalog #
Arthrogen-CIA® 5-Clone Cocktail Kit	10 mg (5+ mice*)	53010
	40 mg (25 mice*)	53040
	100 mg (65 mice*)	53100
Lipopolysaccharide from <i>E. coli</i> 0111:B4	0.5 mg/ml x 5 ml	9028

*Based on DBA/1 and Balb/c mice

Collagen-Induced Arthritis

Collagen-induced arthritis (CIA) can be induced in certain strains of mice, rats, and non-human primates by immunization with type II collagen emulsified with adjuvant. To effectively induce CIA in animals, the type of adjuvant used for emulsifying collagen is a key element. Chondrex provides six types of Incomplete Freund's Adjuvant (IFA) and Complete Freund's Adjuvant (CFA) containing various amounts of *M. tuberculosis* to optimize the immunization condition for inducing CIA.

Incomplete and Complete Freund's Adjuvant for CIA

Description	Content of <i>M. Tuberculosis</i> H-37 RA	Quantity	Catalog #
IFA	-----	5 ml	7002
CFA	1 mg/ml	5 ml	7008
	2 mg/ml	5 ml	7009
	3 mg/ml	5 ml	7015
	4 mg/ml	5 ml	7001
	5 mg/ml	5 ml	7023

Animal Models

Collagen-Induced Arthritis

Chondrex provides various species and types of highly purified cartilage collagen, type II, IX, and XI collagen, which are suitable for the induction of Collagen-Induced Arthritis (CIA) and various applications such as bioengineering of artificial cartilage and cell cultures. CIA can be induced in rodents and non-human primates by immunization with type II collagen, but it has been reported that type XI is also capable of inducing arthritis in mice and rats, since the alpha 3(XI) chain of type XI collagen is identical with the alpha 1(II) chain of type II collagen. Furthermore, it has been suggested that autoantibodies to type IX collagen may contribute to polychondritis development in mice. Choose the appropriate species and types of collagen for individual experimental purposes.

Type II Collagen for CIA

Species	Quantity	Catalog #
Bovine	10 mg, lyophilized	20021
	2 mg/ml x 5 ml	20022
Chick	10 mg, lyophilized	20011
	2 mg/ml x 5 ml	20012
Goat	5 mg, lyophilized	20071
Human	1 mg, lyophilized	20051
	2 mg x 0.5 ml	20052
Mouse	1 mg, lyophilized	20061
	2 mg/ml x 0.5 ml	20062
Porcine	10 mg, lyophilized	20031
	2 mg/ml x 5 ml	20032
Rat	5 mg, lyophilized	20041
	2 mg/ml x 2.5 ml	20042
Sheep	5 mg, lyophilized	20081

Type IX Collagen for CIA

Species	Quantity	Catalog #
Bovine	5 mg, lyophilized	1072
Chick	5 mg, lyophilized	1071
Human	1 mg, lyophilized	1075
Porcine	5 mg, lyophilized	1073

Type XI Collagen for CIA

Species	Quantity	Catalog #
Bovine	5 mg, lyophilized	1082
Chick	5 mg, lyophilized	1081
Human	1 mg, lyophilized	1085
Porcine	5 mg, lyophilized	1083

Animal Models

Mouse Nephritis

To effectively study the pathogenesis of nephritis caused by granular subepithelial deposition of IgG immune complexes, a well-characterized nephritis mouse model is required. A new nephritis model induced by immunization with a chemically modified cationic bovine serum albumin (cBSA) may provide an ideal tool for nephritis studies. Chondrex provides cBSA and offers an optimized immunization schedule for effectively inducing nephritis in Balb/c and ICR mice. Chondrex also provides a mouse urinary albumin detection kit (3012).

Cationic Bovine Serum Albumin (cBSA) for Mouse Nephritis

Description	Quantity	Catalog #
cBSA	2 mg/ml x 10 ml	9058

Rat Nephritis

Goodpasture's syndrome is a severe renal disease associated with pulmonary hemorrhage mediated by autoantibodies against the glomerular basement membrane (GBM). Chondrex provides unique rat monoclonal antibodies against the non-collagenous domain (NC1) of the alpha 4 chain of type IV collagen of GBM, which induces nephritis similar to Goodpasture's syndrome in Wistar Kyoto (WKY) and the sub-strains of rats.

Rat Nephritogenic Monoclonal Antibodies

Clone	Quantity	Catalog #
114	1 mg/ml x 1 ml	70201
	1 mg/ml x 5 ml	70205
a84	1 mg/ml x 1 ml	70211
	1 mg/ml x 5 ml	70215
b35	1 mg/ml x 1 ml	70221
	1 mg/ml x 5 ml	70225

Animal Models

Rat Nephritis

Glomerulonephritis can be induced in WKY rats by immunization with the non-collagenous domain (NC1) of type IV collagen, which is the major component of glomerular basement membranes (GBM), as well as by a single injection of monoclonal antibodies against alpha 4 (IV) NC1. Chondrex provides the NC1 fraction of type IV collagen isolated from bovine GBM for inducing nephritis in rats. In addition, NC1 fragments purified from mouse and rat renal type IV collagen are supplied for studying autoantibodies to GBM in mice and rats.

NC1 Fragment of Type IV Collagen

Source	Composition	Quantity	Catalog #
Bovine GBM	Mixture of α 2-5 (IV) NC1	1 mg, lyophilized	1102
Mouse Renal	Mixture of α 2-5 (IV) NC1	0.1 mg, lyophilized	1106
Rat Renal	Mixture of α 2-5 (IV) NC1	0.1 mg, lyophilized	1104

Adjuvant

Incomplete and Complete Freund's Adjuvant

Chondrex provides Incomplete Freund's Adjuvant (IFA) and Complete Freund's Adjuvant (CFA) containing various amounts of *M. tuberculosis* to optimize the immunization condition for variety of purposes such as CIA or antibody preparation. Chondrex's CFA is carefully prepared for effective stimulation of host's immune responses.

Incomplete and Complete Freund's Adjuvant

Description	Content of <i>M. Tuberculosis</i> H-37 RA	Quantity	Catalog #
IFA	-----	5 ml	7002
CFA	1 mg/ml	5 ml	7008
	2 mg/ml	5 ml	7009
	3 mg/ml	5 ml	7015
	4 mg/ml	5 ml	7001
	5 mg/ml	5 ml	7023
	10 mg/ml	5 ml	7027
	20 mg/ml	5 ml	7024

Antibodies

Anti-Collagen Antibodies

Chondrex provides monoclonal antibodies to various species and types of collagen. These monoclonal antibodies can be used for immunostaining of tissues, western blot, ELISA, and other purposes. Most of the anti-type II collagen antibodies recognize the conserved epitopes of type II collagen from different species and cross-react to all species of type II collagen tested.

Antibodies

Anti-Collagen Antibodies

Anti-Type I Collagen Monoclonal Antibodies (Rat and Mouse)

Description	Ig Subtype	Cross-Reactivity	Quantity	Catalog #
Anti-Human Type I Collagen Antibody, Clone 42r	Rat IgM	H	1 mg/ml, 100 µl	7025 7026 (Biotinylated)
Anti-Mouse Type I Collagen Antibody, Clone 8D4A1	Rat IgG2a	Ms	1 mg/ml, 100 µl	7041 7042 (Biotinylated)
Anti-Mouse Type I Collagen Antibody, Clone 7G5D2	Rat IgG2	B, Ms, P, R	1 mg/ml, 100 µl	7045 7046 (Biotinylated)
Anti-Rat Type I Collagen Antibody, Clone 1F10C2	Mouse IgG2a	C, R	1 mg/ml, 100 µl	7043 7044 (Biotinylated)
Anti-Rat Type I Collagen Antibody, Clone 2H12B4	Mouse IgG1	B, P, R, Rb	1 mg/ml, 100 µl	7066 7067 (Biotinylated)

Anti-Type II Collagen Monoclonal Antibodies (Mouse)

Description	Ig Subtype	Cross-Reactivity	Quantity	Catalog #
Anti-Type II Collagen (CB11) Antibody Cocktail (A2-10, D1-2G, D8-6, F10-21)	Mouse IgG2a, IgG2b	B, C, H, Mk, Ms, P, R	1 mg/ml, 100 µl	7005 7006 (Biotinylated)
Anti-Type II Collagen (CB11) Antibody, Clone 35	Mouse IgG1	B, C, H, Ms, P, R	1 mg/ml, 100 µl	7048 7049 (Biotinylated)
Anti-Type II Collagen (CB11) Antibody, Clone A2-10	Mouse IgG2a	B, C, H, Mk, Ms, P, R	1 mg/ml, 100 µl	7050 7051 (Biotinylated)
Anti-Type II Collagen (CB11) Antibody, Clone D1-2G	Mouse IgG2b	B, C, H, Ms, P, R	1 mg/ml, 100 µl	7052 7053 (Biotinylated)
Anti-Type II Collagen (CB11) Antibody, Clone K4-5C	Mouse IgG3	B, C, H, Ms, P, R	1 mg/ml, 100 µl	7054 7055 (Biotinylated)
Anti-Type II Collagen (CB8) Antibody, Clone 5A4B11	Mouse IgG2a	B, C, Ms	1 mg/ml, 100 µl	7065 70651 (Biotinylated)

Anti-Type IV Collagen Monoclonal Antibodies (Rat and Mouse)

Description	Ig Subtype	Cross-Reactivity	Quantity	Catalog #
Anti-Bovine NC1 of Type IV Collagen Antibody, Clone 4-37-1	Mouse IgG1	B	1 mg/ml, 100 µl	7068 7069 (Biotinylated)
Anti-Mouse NC1 of Type IV Collagen Antibody, Clone 3-1-1	Mouse IgG2a	B, Ms	1 mg/ml, 100 µl	7056 7057 (Biotinylated)
Anti-Mouse NC1 of Type IV Collagen Antibody, Clone CB243	Mouse IgG1	B, Ms	1 mg/ml, 100 µl	7058 7059 (Biotinylated)
Anti-Rat Alpha 4 (IV) NC1 Antibody, Clone a84	Rat IG2a	R	1 mg/ml, 100 µl	7060 7061 (Biotinylated)
Anti-Rat Alpha 4 (IV) NC1 Antibody, Clone b35	Rat IgG2b	R	1 mg/ml, 100 µl	7062 7063 (Biotinylated)

Anti-Type IX Collagen Monoclonal Antibodies (Mouse)

Description	Ig Subtype	Cross-Reactivity	Quantity	Catalog #
Anti-Type IX Collagen Antibody Cocktail (D1-9, B3-1)	Mouse IgG1, IgG2b	B, C, H, Ms, P, R	1 mg/ml, 100 µl	7018 7019 (Biotinylated)

Abbreviations: B: Bovine, C: Chick, H: Human, Mk: Monkey, Ms: Mouse, P: Porcine, R: Rat, Rb: Rabbit
CB: Cyanogen bromide digested peptide, NC1: Non-collagenous domain 1

Antibodies

Anti-Herp Antibody

Homocysteine-induced endoplasmic reticulum protein (Herp) was discovered as a potential mimic antigen for eliciting anti-DNA antibodies in patients with lupus nephritis by screening cDNA libraries from peripheral lymphocytes of patients with active lupus nephritis. Herp is located within the endoplasmic reticulum (ER) membrane in various cell types and its production is up-regulated by stress such as viral infection, hypoxia, or Ca²⁺ imbalance. Chondrex provides mouse monoclonal antibody, Clone HT2, for detecting Herp by western blot or ELISA.

Anti-Herp Mouse Monoclonal Antibody

Description	Ig Subtype	Cross-Reactivity	Quantity	Catalog #
Anti-Human Herp, Clone HT2	Mouse IgG1	H*	1 mg/ml, 100 µl	7039 7040 (Biotinylated)

*May cross-react with mouse dsDNA

Herp: Homocysteine-induced endoplasmic reticulum protein

Anti-HMGB1 Antibodies

HMGB1 (high mobility group box 1 protein), also known as amphoterin, was recently identified as a late stage lethal mediator of endotoxin, and considered as a pro-inflammatory cytokine. Chondrex provides several monoclonal and polyclonal antibodies against synthetic peptides of HMGB1 and intact bovine HMGB1. These antibodies can be used for detecting HMGB1 by ELISA and western blot, or can be used to study the biological effects of HMGB1 in experiments *in vitro* and *in vivo*.

Anti-HMGB1 Monoclonal Antibody

Description	Ig Subtype	Cross-Reactivity	Quantity	Catalog #
Anti-HMGB1 Peptide (2-11) Antibody, Clone 1-1.2BP1	Mouse IgG1	B, H, Ms, R	1 mg/ml, 100 µl	7032 70321 (Biotinylated)
Anti-HMGB1 Peptide (2-11) Antibody, Clone 1-2.5AP	Mouse IgG1	B, H, Ms, R	1 mg/ml, 100 µl	7033 70331 (Biotinylated)
Anti-HMGB1 Peptide (2-11) Antibody, Clone 1-3.10EP1	Mouse IgG1	B, H, Ms, R	1 mg/ml, 100 µl	7034 70341 (Biotinylated)
Anti-HMGB1 Peptide (166-176) Antibody, Clone 1-1.2.11.P2	Mouse IgG1	B, H, Ms, R	1 mg/ml, 100 µl	7037 70371 (Biotinylated)
Anti-Bovine HMGB1 Antibody, Clone 1-37.10FH	Mouse IgG2a	B, H, Ms, R	1 mg/ml, 100 µl	7047 70471 (Biotinylated)

Abbreviations: B: Bovine, H: Human, Ms: Mouse, R: Rat

Antibodies

Anti-HMGB1 Antibodies

Anti-HMGB1 Polyclonal Antibody

Description	Ig Subtype	Cross-Reactivity	Quantity	Catalog #
Anti-HMGB1 Peptide (2-11) Antibodies	Rabbit IgG	B, H, Ms, R	1 mg/ml, 100 µl	7029
Anti-HMGB1 Peptide (166-176) Antibodies	Rabbit IgG	B, H, Ms, R	1 mg/ml, 100 µl	7030
Anti-Bovine HMGB1 Antibodies	Rabbit IgG	B, H, Ms, R	1 mg/ml, 100 µl	7028
Anti-Bovine HMGB-1 Antibodies	Chick IgY	B, H, Ms, R	1 mg/ml, 100 µl	7064

Abbreviations: B: Bovine, H: Human, Ms: Mouse, R: Rat

Anti-OVA Antibodies

The type I hypersensitivity reaction mediated by IgE is a typical clinical feature of allergic diseases, such as asthma, eczema, hay fever, and urticaria. Ovalbumin (OVA) is widely used as an antigen for studying the IgE-mediated allergic reaction in mice. Chondrex provides allergenic and non-allergenic mouse anti-OVA IgE and IgG monoclonal antibodies for studying allergic diseases, such as *in vivo* hyper-sensitivity reactions, and related kits for *in vitro* and *in vivo* experiments.

Mouse Anti-OVA IgE and IgG Monoclonal Antibodies

Clone	Application		Quantity	Catalog #
	In Vitro	In Viro		
E-C1 (IgE)	Mast cell activation	Hyper-sensitivity reaction	1 mg, lyophilized	3006
E-G5 (IgE)	No	No	1 mg, lyophilized	3007
L-71 (IgG)	No	No	1 mg, lyophilized	3008

Collagenases

Collagenases, members of the matrix metalloproteinase (MMP) family, are involved in the physiological and pathological turnover of connective tissues. Collagenase production is significantly increased at the sites of inflammation due to the stimulation of pro-inflammatory cytokines. Chondrex provides recombinant human MMP-8 and MMP-13, in addition to collagenase assay kits using FITC-labeled type I collagen and type II collagen, or a fluorogenic peptide as substrates.

Collagenase Assay Kits

Description	Collagen Substrate	Catalog #
Rapid Collagenase Assay Kit	FITC-Labeled Bovine Type I Collagen	3001
	FITC-Labeled Bovine Type II Collagen	3002
MMP-13 Inhibitor Assay Kit	-----	3003

Collagenase Substrates

Description	Quantity	Catalog #
FITC-Labeled Bovine Type I Collagen	2 mg/ml, 5 ml	4001
FITC-Labeled Bovine Type II Collagen	2 mg/ml, 5 ml	4002

Note: Fluorogenic peptide substrate is available.

Collagenases (MMPs)

Description	Quantity	Catalog #
Recombinant Human MMP-8 (Full length, Latent Form)	10 units	5001
Recombinant Human MMP-13 (Truncated)	10 µg	5002

Collagen

CB-Peptide Fragments of Type II Collagen

Cyanogen bromide digested peptide (CB-peptide) fragments of type II collagen are available for studying B-cell and T-cell epitopes of type II collagen. These peptides are pepsin-free and ideal for studying epitope specificity of T-cells by proliferation assay. These peptides are renatured into triple-helical conformation by a step-wise cooling method*, and can be used as an antigen for analyzing epitope specificity of antibodies by ELISA.

*See Reference: Collagen Rel Res. 5: 469-480 (1985)

CB-Peptides of Type II Collagen

CB-Peptides of Type II Collagen	Quantity	Catalog #
Bovine CB8	0.5 mg, lyophilized	9020
Bovine CB9.7	0.5 mg, lyophilized	9059
Bovine CB10	0.5 mg, lyophilized	9021
Bovine CB11	0.5 mg, lyophilized	9007
Bovine CB12	0.5 mg, lyophilized	9022
Chick CB7	0.5 mg, lyophilized	9037
Chick CB8	0.5 mg, lyophilized	9063
Chick CB9	0.5 mg, lyophilized	9017
Chick CB10	0.5 mg, lyophilized	9018
Chick CB11	0.5 mg, lyophilized	9004
Chick CB12	0.5 mg, lyophilized	9019
Human CB8	0.5 mg, lyophilized	9047
Human CB9.7	0.5 mg, lyophilized	9048
Human CB10	0.5 mg, lyophilized	9023
Human CB11	0.5 mg, lyophilized	9006
Human CB12	0.5 mg, lyophilized	9049
Mouse CB8	0.5 mg, lyophilized	9060
Mouse CB10	0.5 mg, lyophilized	9061
Mouse CB11	0.5 mg, lyophilized	9057

Collagen

Collagen for ELISA

Chondrex provides type I and type II collagen specially purified for antibody assay by ELISA. Each vial of ELISA grade collagen contains enough collagen to coat ten 96-well plates. A 10X dilution buffer is also supplied as a coating buffer, which prevents fibril formation of collagen. Each vial of ELISA grade collagen contains 0.5 mg collagen in 1 ml of 0.05M acetic acid.

ELISA Grade Type I Collagen

Species	Quantity	Catalog #
Bovine	0.5 mg/ml x 1 ml	1002
Chick	0.5 mg/ml x 1 ml	1001
Human	0.5 mg/ml x 1 ml	1005
Mouse	0.5 mg/ml x 1 ml	1006
Porcine	0.5 mg/ml x 1 ml	1003
Rat	0.5 mg/ml x 1 ml	1004

ELISA Grade Type II Collagen

Species	Quantity	Catalog #
Bovine	0.5 mg/ml x 1 ml	2012
Chick	0.5 mg/ml x 1 ml	2011
Human	0.5 mg/ml x 1 ml	2015
Monkey	0.5 mg/ml x 1 ml	2017
Mouse	0.5 mg/ml x 1 ml	2016
Porcine	0.5 mg/ml x 1 ml	2013
Rat	0.5 mg/ml x 1 ml	2014

Collagen

Collagen for Immunization, Tissue Culture, and Engineering

Chondrex provides various types and species of collagen for general use such as for immunizing animals, tissue engineering, cell culture, and antibody assays. These collagen products are highly purified by repetitive salt precipitation and DEAE-cellulose chromatography to remove contaminants such as proteoglycans and pepsin, which are more antigenic than collagen.

Immunization Grade Type I Collagen

Species	Quantity	Catalog #
Bovine	10 mg, lyophilized	1062
Chick	10 mg, lyophilized	1061
Human	1 mg, lyophilized	1065
Mouse	5 mg, lyophilized	1066
Porcine	10 mg, lyophilized	1063
Rat	5 mg, lyophilized	1064

Immunization Grade Type II Collagen

Species	Quantity	Catalog #
Bovine	10 mg, lyophilized	20021
	2 mg/ml x 5 ml	20022
Chick	10 mg, lyophilized	20011
	2 mg/ml x 5 ml	20012
Goat	5 mg, lyophilized	20071
Human	1 mg, lyophilized	20051
	2 mg x 0.5 ml	20052
Mouse	1 mg, lyophilized	20061
	2 mg/ml x 0.5 ml	20062
Porcine	10 mg, lyophilized	20031
	2 mg/ml x 5 ml	20032
Rat	5 mg, lyophilized	20041
	2 mg/ml x 2.5 ml	20042
Sheep	5 mg, lyophilized	20081

Collagen

Collagen for Immunization, Tissue Culture, and Engineering

Immunization Grade Type IV Collagen

Description	Quantity	Catalog #
Bovine NC1 Fragment	1 mg, lyophilized	1102
Mouse NC1 Fragment	0.1 mg, lyophilized	1106
Rat NC1 Fragment	0.1 mg, lyophilized	1104

Immunization Grade Type V Collagen

Source	Quantity	Catalog #
Bovine Amnion	1 mg, lyophilized	1092
Human Amnion	1 mg, lyophilized	1095
Human Placenta	1 mg, lyophilized	10951

Immunization Grade Type IX Collagen

Species	Quantity	Catalog #
Bovine	5 mg, lyophilized	1072
Chick	5 mg, lyophilized	1071
Human	1 mg, lyophilized	1075
Porcine	5 mg, lyophilized	1073

Immunization Grade Type XI Collagen

Species	Quantity	Catalog #
Bovine	5 mg, lyophilized	1082
Chick	5 mg, lyophilized	1081
Human	1 mg, lyophilized	1085
Porcine	5 mg, lyophilized	1083

Collagen for Organ Allograft Rejection

Recently, a concern has been raised that type V collagen may play a role in graft rejection following lung transplants. Chondrex provides bovine and human type V collagen for studying the possible involvement of type V collagen immunity in organ allograft rejection in both *in vitro* and *in vivo* experiments.

Bovine and Human Type V Collagen

Source	Components	Quantity	Catalog #
Bovine Amnion	$[\alpha 1(V)]_2\alpha 2(V)$	1 mg, lyophilized	1092
Human Amnion	$[\alpha 1(V)]_2\alpha 2(V)$	1 mg, lyophilized	1095
Human Placenta	$\alpha 1(V)\alpha 2(V)\alpha 3(V) + [\alpha 1(V)]_2\alpha 2(V)$	1 mg, lyophilized	10951

Collagen

Collagen for T-Cell Proliferation Assay

Minor contaminants in collagen preparations, such as pepsin and proteoglycans, are highly immunogenic, and may stimulate undesired T-cells with *in vitro* and *in vivo* experiments. Furthermore, antigen presentation cells cannot process native collagen in an *in vitro* culture system, since these cells generally lack collagenolytic enzymes. In addition, collagen forms a gel at 37°C during cell culture, which is fatal to these cells. Therefore, it is critical to use heat-denatured collagen instead of native collagen for *in vitro* T-cell stimulation. Chondrex provides ultra-pure, pepsin-free, denatured collagen for T-cell proliferation assays, establishing T-cell lines, or for assaying cytokines released by activated T-cells.

T-Cell Proliferation Grade Type I Collagen

Species	Quantity	Catalog #
Bovine	0.5 mg, lyophilized	1052
Chick	0.5 mg, lyophilized	1051
Human	0.5 mg, lyophilized	1055
Mouse	0.5 mg, lyophilized	1056
Porcine	0.5 mg, lyophilized	1053
Rat	0.5 mg, lyophilized	1054

T-Cell Proliferation Grade Type II Collagen

Species	Quantity	Catalog #
Bovine	0.5 mg, lyophilized	2022
Chick	0.5 mg, lyophilized	2021
Human	0.5 mg, lyophilized	2025
Monkey	0.5 mg, lyophilized	2027
Mouse	0.5 mg, lyophilized	2026
Porcine	0.5 mg, lyophilized	2023
Rat	0.5 mg, lyophilized	2024

ELISA/Assay Kits

Anti-Collagen Antibody Assay - Human

Chondrex provides human IgA and IgG antibody assay kits (can be used for monkey sera) to determine the diversity of human antibodies using various species of type I and type II collagen coated wells in addition to uncoated wells for use as a blank. These kits employ effective blocking agents to minimize non-specific reactions caused by serum components. Generally, it is impossible to accurately determine antibodies in human sera by ELISA and RIA using BSA and BSA-Tween as blocking agents.

Human/Monkey Anti-Type I Collagen IgA Antibody Assay Kits

Description	Chromogen	Catalog #
Anti-Bovine Type I Collagen Antibody Assay Kit	OPD/TMB	1042/1042T
Anti-Chick Type I Collagen Antibody Assay Kit	OPD/TMB	1041/1041T
Anti-Human Type I Collagen Antibody Assay Kit	OPD/TMB	1045/1045T
Anti-Porcine Type I Collagen Antibody Assay Kit	OPD/TMB	1043/1043T

Human/Monkey Anti-Type II Collagen IgA Antibody Assay Kits

Description	Chromogen	Catalog #
Anti-Bovine Type II Collagen Antibody Assay Kit	OPD/TMB	2062/2062T
Anti-Chick Type II Collagen Antibody Assay Kit	OPD/TMB	2061/2061T
Anti-Human Type II Collagen Antibody Assay Kit	OPD/TMB	2065/2065T
Anti-Porcine Type II Collagen Antibody Assay Kit	OPD/TMB	2063/2063T

Human/Monkey Anti-Type I Collagen IgG Antibody Assay Kits

Description	Chromogen	Catalog #
Anti-Bovine Type I Collagen Antibody Assay Kit	OPD/TMB	1032/1032T
Anti-Chick Type I Collagen Antibody Assay Kit	OPD/TMB	1031/1031T
Anti-Human Type I Collagen Antibody Assay Kit	OPD/TMB	1035/1035T
Anti-Porcine Type I Collagen Antibody Assay Kit	OPD/TMB	1033/1033T

Human/Monkey Anti-Type II Collagen IgG Antibody Assay Kits

Description	Chromogen	Catalog #
Anti-Bovine Type II Collagen Antibody Assay Kit	OPD/TMB	2052/2052T
Anti-Chick Type II Collagen Antibody Assay Kit	OPD/TMB	2051/2051T
Anti-Human Type II Collagen Antibody Assay Kit	OPD/TMB	2055/2055T
Anti-Porcine Type II Collagen Antibody Assay Kit	OPD/TMB	2053/2053T

ELISA/Assay Kits

Anti-Collagen Antibody Assay - Mouse

In CIA-susceptible mice, the serum antibody levels to the type II collagen used for immunization are remarkably high, and importantly, these antibodies cross-react to autologous type II collagen, due to the conserved amino acid sequences of type II collagen. Therefore, it is important to determine antibody levels to the heterologous type II collagen used for immunization, but it is more important to determine antibody levels to autologous collagen to accurately correlate antibody levels with the development and severity of arthritis in the CIA model. Chondrex provides complete ELISA kits for assaying mouse IgG antibodies to various species and types of collagen.

Mouse Anti-Type I Collagen IgG Antibody Assay Kits

Description	Chromogen	Catalog #
Anti-Bovine Type I Collagen Antibody Assay Kit	OPD/TMB	1012/1012T
Anti-Chick Type I Collagen Antibody Assay Kit	OPD/TMB	1011/1011T
Anti-Human Type I Collagen Antibody Assay Kit	OPD/TMB	1015/1015T
Anti-Mouse Type I Collagen Antibody Assay Kit	OPD/TMB	1016/1016T
Anti-Porcine Type I Collagen Antibody Assay Kit	OPD/TMB	1013/1013T

Mouse Anti-Type II Collagen IgG Antibody Assay Kits

Description	Chromogen	Catalog #
Anti-Bovine Type II Collagen Antibody Assay Kit	OPD/TMB	2032/2032T
Anti-Chick Type II Collagen Antibody Assay Kit	OPD/TMB	2031/2031T
Anti-Human Type II Collagen Antibody Assay Kit	OPD/TMB	2035/2035T
Anti-Mouse Type II Collagen Antibody Assay Kit	OPD/TMB	2036/2036T
Anti-Porcine Type II Collagen Antibody Assay Kit	OPD/TMB	2033/2033T

ELISA/Assay Kits

Anti-Collagen Antibody Subtype Assay - Mouse

Autoantibodies to type II collagen play a primary role in inducing autoimmune-mediated inflammatory arthritis in the CIA model, but autoantibodies are not always capable of inducing arthritis. In mice, complement fixable IgG2a and IgG2b subtype autoantibody levels are pertinent in the induction of arthritis, as well as their epitope specificity. In order to adequately study the pathological roles of antibodies to type II collagen, Chondrex provides mouse anti-collagen IgG subtype (IgG1, IgG2a, IgG2b, IgG2c, and IgG3) antibody assay kits for further detailed analysis of antibodies in the mouse CIA model.

Anti-Collagen IgG Antibody Subtype Assay Kits

Description	Subtype	Chromogen	Catalog #
Anti-Bovine Type II Collagen Antibody Assay Kit	IgG1	OPD/TMB	20321/20321T
	IgG2a	OPD/TMB	20322/20322T
	IgG2b	OPD/TMB	20323/20323T
	IgG2c	OPD/TMB	20325/20325T
	IgG3	OPD/TMB	20324/20324T
Anti-Chick Type II Collagen Antibody Assay Kit	IgG1	OPD/TMB	20311/20311T
	IgG2a	OPD/TMB	20312/20312T
	IgG2b	OPD/TMB	20313/20313T
	IgG2c	OPD/TMB	20315/20315T
	IgG3	OPD/TMB	20314/20314T
Anti-Human Type II Collagen Antibody Assay Kit	IgG1	OPD/TMB	20351/20351T
	IgG2a	OPD/TMB	20352/20352T
	IgG2b	OPD/TMB	20353/20353T
	IgG2c	OPD/TMB	20355/20355T
	IgG3	OPD/TMB	20354/20354T
Anti-Mouse Type II Collagen Antibody Assay Kit	IgG1	OPD/TMB	20361/20361T
	IgG2a	OPD/TMB	20362/20362T
	IgG2b	OPD/TMB	20363/20363T
	IgG2c	OPD/TMB	20365/20365T
	IgG3	OPD/TMB	20364/20364T
Anti-Porcine Type II Collagen Antibody Assay Kit	IgG1	OPD/TMB	20331/20331T
	IgG2a	OPD/TMB	20332/20332T
	IgG2b	OPD/TMB	20333/20333T
	IgG2c	OPD/TMB	20335/20335T
	IgG3	OPD/TMB	20334/20334T

ELISA/Assay Kits

Anti-Collagen Antibody Assay - Rat

Collagen-induced arthritis (CIA) can be induced in various strains of rats by immunization with heterologous type II collagen. In general, 50-60% of antibodies against the collagen used for immunization cross-react to autologous rat type II collagen. It is important to determine antibody levels to the heterologous type II collagen used for immunization and to autologous collagen to correlate antibody levels with the development and severity of arthritis in the rat CIA model.

Rat Anti-Type I Collagen IgG Antibody Assay Kits

Description	Chromogen	Catalog #
Anti-Bovine Type I Collagen Antibody Assay Kit	OPD/TMB	1022/1022T
Anti-Chick Type I Collagen Antibody Assay Kit	OPD/TMB	1021/2021T
Anti-Human Type I Collagen Antibody Assay Kit	OPD/TMB	1025/1025T
Anti-Porcine Type I Collagen Antibody Assay Kit	OPD/TMB	1023/1023T
Anti-Rat Type I Collagen Antibody Assay Kit	OPD/TMB	1024/1024T

Rat Anti-Type II Collagen IgG Antibody Assay Kits

Description	Chromogen	Catalog #
Anti-Bovine Type II Collagen Antibody Assay Kit	OPD/TMB	2042/2042T
Anti-Chick Type II Collagen Antibody Assay Kit	OPD/TMB	2041/2041T
Anti-Human Type II Collagen Antibody Assay Kit	OPD/TMB	2045/2045T
Anti-Porcine Type II Collagen Antibody Assay Kit	OPD/TMB	2043/2043T
Anti-Rat Type II Collagen Antibody Assay Kit	OPD/TMB	2044/2044T

Anti-Type V Collagen Antibody Assay - Human

Human anti-type V collagen IgG antibody assay kits are available for studying the possible involvement of type V collagen immunity in organ allograft rejection in both *in vitro* and *in vivo* experiments. In order to determine human serum antibodies which exhibit a significant diversity in antigen specificity, Chondrex provides various species of type V collagen-coated ELISA plates (wells) in addition to uncoated wells for use as a blank.

Human Anti-Type V Collagen IgG Antibody Assay Kit

Description	Chromogen	Catalog #
Anti-Bovine Amnion Type V Collagen Antibody Assay Kit	OPD/TMB	2082/2082T
Anti-Human Amnion Type V Collagen Antibody Assay Kit	OPD/TMB	2085/2085T
Anti-Human Placenta Type V Collagen Antibody Assay Kit	OPD/TMB	20851/20851T

Amnion type V collagen: $[\alpha 1(V)]_2\alpha 2(V)$

Placenta type V collagen: mixture of $[\alpha 1(V)]_2\alpha 2(V)$ and $\alpha 1(V)\alpha 2(V)\alpha 3(V)$

ELISA/Assay Kits

Collagen Detection

Collagen is the most abundant protein family that forms connective tissues and plays critical roles in the inflammatory process. In order to study the physiological and pathological turnover of connective tissues and for various research purposes, Chondrex provides unique kits and reagents for determining various species of type I and type II collagen. Each kit is designed to quantify the amount of native collagen in cultured tissues or tissue specimens by ELISA.

Type I Collagen Detection Kits

Species	Chromogen	Catalog #
Bovine	OPD	6014
Human	OPD	6008
Mouse	OPD	6012
Porcine	OPD	6015
Rabbit	OPD	6016
Rat	OPD	6013

Type II Collagen Detection Kit

Species	Chromogen	Catalog #
Multi-Species	OPD	6009

Proteinases for Collagen Solubilization

Description	Catalog #
Elastase from Porcine Pancreas, 1 mg	30047
Pepsin, 1 mg	6011

Semi-Quantitative Total Tissue Collagen Detection Kit

Description	Catalog #
Sirius Red/Fast Green Collagen Staining Kit	9046

Sirius Red Collagen Detection Kit

Description	Catalog #
Sirius Red Collagen Detection Kit	9062

ELISA/Assay Kits

IgE Assay

Ovalbumin (OVA) is widely used as an antigen for studying allergic diseases in mice. Chondrex provides three types of mouse IgE and one type of IgG anti-OVA antibody assay kit. These IgE assay kits employ an identical IgE standard (Clone E-C1), which allows for easy determination of total IgE and OVA specific IgE ratios in individual samples.

In addition, rat anti-mouse IgE monoclonal antibodies (Clone 345-2 and 77-1) used in these kits react to both IgE^a and IgE^b allotypes. Therefore, separate assays for IgE^a and IgE^b allotypes are not required.

Mouse Anti-OVA Antibody Assay Kits

Description	Chromogen	Catalog #
Anti-OVA IgE Antibody Assay Kit	TMB	3004
Total IgE (IgE ^a and IgE ^b) Detection Kit	TMB	3005
Serum Anti-OVA IgE Antibody Assay Kit	TMB	3010
Anti-OVA IgG Antibody Assay Kit	TMB	3011

Mouse Urinary Albumin Detection Kit

Mouse kidneys leak serum components such as bilirubin, resulting in overestimated urinary protein levels when assaying by the turbidity method, thus proteinuria is not a suitable marker for the evaluation of nephritis severity. On the other hand, albumin is the first protein observed in the urine when kidney dysfunction begins to develop, thus it is a more suitable marker to evaluate the severity of nephritis in mouse models. This kit employs a sandwich assay method, which requires only 4 hours to complete. In the mouse nephritis model, a mouse is deemed nephritic if the total albumin content in a 16-hour urine collection is greater than 1 mg. It is important to note that urinary albumin levels can reach up to 50-200 mg in a 16-hour urine collection, depending on the severity of nephritis.

Mouse Urinary Albumin Detection Kit

Description	Chromogen	Catalog #
Mouse Urinary Albumin Detection Kit	OPD	3012

Rat Urinary Protein Assay Kit

The rat urinary protein assay kit uses the turbidity method in a 96-well flat bottom plate, which offers a solution for assaying a large number of rat urine samples within a short time. This kit requires a minimal volume (less than 10 µl) of urine samples, and is ideal for studying nephritis in various strains of rats that do not secrete enough volume of urine during a 16-hour collection period.

Rat Urinary Protein Assay Kit and Standard

Description	Catalog #
Rat Urinary Protein Assay Kit	9040
Rat Urinary Protein Assay Standard	90401

HMGB1

HMGB1, also known as amphoterin, was recently rediscovered as a late stage lethal mediator of endotoxin, and is now considered as a pro-inflammatory cytokine with crucial roles in a variety of acute and chronic inflammatory diseases. Chondrex provides native HMGB1 purified from bovine thymus, and a HMGB1 detection kit, which is designed to assay HMGB1 levels in cell culture media and mouse sera.

HMGB1 from Bovine Thymus

Description	Quantity	Catalog #
Bovine HMGB1	1 mg/ml x 100 μ l	9050

HMGB1 Detection Kit

Description	Chromogen	Catalog #
HMGB1 Detection Kit	TMB	6010

Tissue Staining Kits

Chondrex provides immunostaining kits and a series of monoclonal antibodies for staining various types and species of collagen. Our immunostaining kits contain all necessary reagents, such as biotinylated monoclonal or monoclonal antibody cocktail, streptavidin-peroxidase, blocking buffer, and antibody dilution buffer.

Collagen Staining Kits

Description	Catalog #
Human Type I Collagen	9044
Multi-Species Type II Collagen	9001
Multi-Species Type IX Collagen	9012

Monoclonal Antibodies for Immunostaining

Description	Catalog #
Anti-Human Type I Collagen Rat IgM Monoclonal Antibody, Clone 42r	7025 7026 (Biotinylated)
Anti-Type II Collagen (Multi-Species) Mouse IgG Monoclonal Antibody Cocktail	7005 7006 (Biotinylated)
Anti-Rat α 4 (IV) NC1 Rat IgG Monoclonal Antibody, Clone a84	7060 7061 (Biotinylated)
Anti-Type IX Collagen (Multi-Species) Mouse IgG Monoclonal Antibody Cocktail	7018 7019 (Biotinylated)

Miscellaneous

Individual Kit Components

Fluorescent Assay Plates, 3-Way Stop Cocks, etc...

As a part of our custom services, Chondrex provides individual reagents or components used in our kit products (i.e. standard solutions, 96-well black plates for fluorescent assays, 3-way stop cocks, etc).

Please contact us for more information at support@chondrex.com.

Custom Services

Anti-Collagen Antibody Assay

Collagen Assay

Collagenase Assay

Chondrex provides various custom services to assist our clients.

Please contact us for more information at support@chondrex.com.

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