

# Human Lipoproteins/Apolipoproteins

Item	Product	Catalog No.	Unit	Price	Remark
P01	Human Albumin	10P-AL101 10P-AL105	1.0 mg 5.0 mg		Purity $\geq$ 99% by SDS-PAGE.
P02	Human Lipoprotein (a) [LP(a)]	10P-LP101	0.1 mg		Isolated from Human Plasma. Preserved with 50% glycerol.
P03	Human Apolipoprotein AI ( Apo AI )	11P-101 11P-105	1.0 mg 5.0 mg		Purity $\geq$ 98% by SDS-PAGE.
P04	Ultra Pure Human Apolipoprotein AI ( Apo AI )	11P-UP205 11P-UP210	0.5 mg 1.0 mg		Purity $\geq$ 99% by SDS-PAGE.
P05	Human Apolipoprotein AII ( Apo AII )	12P-105 12P-110	0.5 mg 1.0 mg		Purity $\geq$ 98% by SDS-PAGE.
P06	Ultra Pure Human Apolipoprotein AII ( Apo AII )	12P-UP205 12P-UP210	0.5 mg 1.0 mg		Purity $\geq$ 99% by SDS-PAGE.
P07	Water-Soluble Human Apolipoprotein B-100	20P-B105 20P-B110	0.5 mg 1.0 mg		Purity $\geq$ 99% by SDS-PAGE. Preserved with 50% glycerol.
P08	Human Low Density Lipoprotein (LDL)	20P-L101 20P-L105	1.0 mg 5.0 mg		Density 1.03 - 1.063. Purity $\geq$ 99% by SDS-PAGE. Preserved with 50% glycerol.
P09	Human Very Low Density Lipoprotein (VLDL)	22P-VL101 22P-VL105	1.0 mg 5.0 mg		Density 1.006. Preserved with 50% glycerol.
P10	Human C-Reactive Protein (CRP)	30P-CRP-105 30P-CRP-110	0.5 mg 1.0 mg		Purity $\geq$ 99% by SDS-PAGE
P11	Human Apolipoprotein CI ( Apo CI )	31P-102 31P-105 31P-110	0.2 mg 0.5 mg 1.0 mg		Purity $\geq$ 98% by SDS-PAGE.
P12	Ultra Pure Human Apolipoprotein CI ( Apo CI )	31P-UP201 31P-UP202	0.1 mg 0.2 mg		Purity $\geq$ 99% by SDS-PAGE.
P13	Human Apolipoprotein CII ( Apo CII )	32P-101	0.1 mg		Purity $\geq$ 98% by SDS-PAGE.

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# Human Lipoproteins/Apolipoproteins

Item	Product	Catalog No.	Unit	Price	Remark
P14	Human Apolipoprotein CIII ( Apo CIII )	33P-102	0.2 mg		Purity $\geq$ 98% by SDS-PAGE.
		33P-105	0.5 mg		
		33P-110	1.0 mg		
P15	Ultra Pure Human Apolipoprotein CIII ( Apo CIII )	33P-UP202	0.2 mg		Purity $\geq$ 99% by SDS-PAGE.
		33P-UP205	0.5 mg		
		33P-UP210	1.0 mg		
P16	Human Apolipoprotein E ( Apo E )	50P-101	0.1 mg		Purity $\geq$ 98% by SDS-PAGE.
P17	Human Plasminogen	60P-PG101	1.0 mg		Purity $\geq$ 98% by SDS-PAGE. Preserved with 50% glycerol.
P18A	Human High Density Lipoprotein ( HDL )	80P-HD-101	1.0 mg		Density 1.063 - 1.210. Preserved with 50% glycerol.
		80P-HD-105	5.0 mg		
P18B	Human High Density Lipoprotein 2 (HDL-2)	80P-HD2-101	1.0 mg		Density 1.063 - 1.120 Preserved with 50% glycerol.
P18C	Human High Density Lipoprotein 3 (HDL-3)	80P-HD3-101	1.0 mg		Density 1.120 - 1.210 Preserved with 50% glycerol.

## Applications in the study:

\* Chunyu Zheng, Christina Khoo, Jeremy Furtado, Katsunori Ikewaki, and Frank M Sacks, Dietary monounsaturated fat activates metabolic pathways for triglyceride-rich lipoproteins that involve apolipoproteins E and C-III, *Am J Clin Nutr* 2008; 88:272– 81.

\* Dobrin Nedelkov, Urban A. Kiernan, Eric E. Niederkofler, Kemmons A. Tubbs, and Randall W. Nelson. Investigating diversity in human plasma proteins. *PNAS*, 2005, August 2, 102:10852-10857.

\* Lindgren, Mikko P.S. Ares, Prediman K. Shah, Roland Carlsson, Jan Nilsson and Alexandru Schiopu, Jenny. Bengtsson, Ingrid Söderberg, Sabina Janciauskiene, Stefan; B-100 Peptide Sequences Inhibit Atherosclerosis Recombinant Human Antibodies Against Aldehyde-Modified Apolipoprotein; *Circulation* 2004;110;2047-2052.

\* Dobrin Nedelkov, Urban A. Kiernan, Eric E. Niederkofler, Kemmons A. Tubbs, and Randall W. Nelson. Investigating diversity in human plasma proteins. *PNAS*, 2005, August 2, 102:10852-10857.

\* Antonina Kolmakova, Peter Kwiterovich, Donna Virgil, Petar Alaupovic, Carolyn Knight-Gibson, Sergio F. Martin, Subroto Chatterjee. Apolipoprotein C-I Induces Apoptosis in Human Aortic Smooth Muscle Cells via Recruiting Neutral Sphingomyelinase. *Arterioscler Thromb Vasc Biol.* 2004; 24:264-269

\* Zheng C, Khoo C, Ikewaki K, Sacks FM. Rapid turnover of apolipoprotein C-III-containing triglyceride-rich lipoproteins contributing to the formation of LDL subfractions. *J Lipid Res.* 2007 May;48(5):1190-203.

\* Eric E. Niederkofler, Kemmons A. Tubbs, Urban A. Kiernan, Dobrin Nedelkov, and Randall W. Nelson. Novel mass spectrometric immunoassays for the rapid structural characterization of plasma apolipoproteins. *J. Lipid Res.* 2003. 44: 630–639.

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# Oxidized/Modified Proteins

Item	Product	Catalog No.	Unit	Price	Remark
P19	Malondialdehyde-modified Human Albumin (MDA - Albumin)	10P-MD-AL102	0.2 mg		Albumin purity $\geq$ 99% by SDS-PAGE. Preserved with 50% glycerol.
		10P-MD-AL105	0.5 mg		
		10P-MD-AL110	1.0 mg		
P20	Malondialdehyde modified Human LDL (MDA - LDL)	20P-MD-L102	0.2 mg		LDL Purity $\geq$ 99% by SDS-PAGE. Preserved with 50% glycerol.
		20P-MD-L105	0.5 mg		
		20P-MD-L110	1.0 mg		
P21	Malondialdehyde modified Human ApoB-100 (MDA - ApoB-100)	20P-MD-B102	0.2 mg		Apo B-100/48 purity $\geq$ 99% by SDS-PAGE. Preserved with 50% glycerol.
		20P-MD-B105	0.5 mg		
		20P-MD-B110	1.0 mg		
P22	Nitrated Human Low Density Lipoproteins (Nitrated LDL)	20P-NY-L102	0.2 mg		LDL Purity $\geq$ 99% by SDS-PAGE. Preserved with 50% glycerol.
		20P-NY-L105	0.5 mg		
		20P-NY-L110	1.0 mg		
P23	Copper Oxidized Human Low Density Lipoproteins (Oxidized LDL)	20P-OX-L102	0.2 mg		LDL purity $\geq$ 99% by SDS-PAGE.
		20P-OX-L105	0.5 mg		
		20P-OX-L110	1.0 mg		
P24	Malondialdehyde-modified Bovine Serum Albumin (MDA - BSA)	20P-MD-BS102	0.2 mg		Preserved with 50% glycerol.
		20P-MD-BS105	0.5 mg		
		20P-MD-BS110	1.0 mg		
P25	Nitrated Bovine Serum Albumin (Nitrated BSA)	20P-NY-BS102	0.2 mg		Preserved with 50% glycerol.
		20P-NY-BS105	0.5 mg		
		20P-NY-BS110	1.0 mg		
P26	Carboxymethyl-lysine-modified Bovine Serum Albumin (CML-BSA)	30P-CML-BS102	0.2 mg		Preserved with 50% glycerol.
		30P-CML-BS105	0.5 mg		
		30P-CML-BS110	1.0 mg		
P27	Hydroxynonenal-modified Bovine Serum Albumin (HNE-BSA)	40P-HNE-BS102	0.2 mg		Preserved with 50% glycerol.
		40P-HNE-BS105	0.5 mg		
		40P-HNE-BS110	1.0 mg		
P28	Carbamylated Bovine Serum Albumin (CBL-BSA)	30P-CBL-BS102	0.2 mg		Preserved with 50% glycerol.
		30P-CBL-BS105	0.5 mg		
		30P-CBL-BS110	1.0 mg		

## Applications in the study:

\* Jan Nilsson, Gunilla Nordin Fredrikson, Alexandru Schiopu, Prediman K. Shah, Bo Jansson and Roland Carlsson; Oxidized LDL Antibodies in Treatment and Risk Assessment of Atherosclerosis and Associated Cardiovascular Disease; Current Pharmaceutical Design, 2007, 13, 1021-1030.

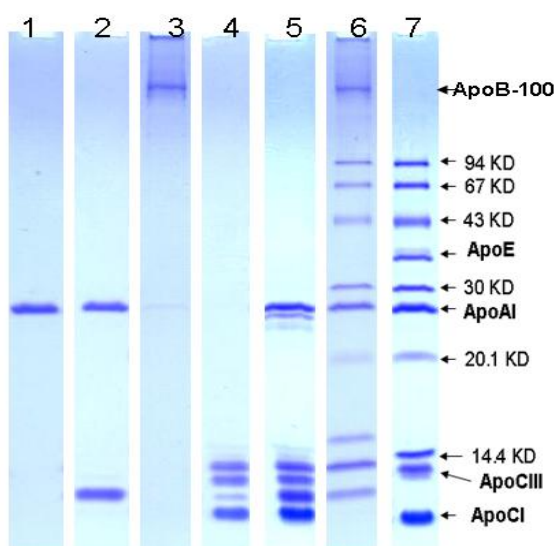
\* Alexandru Schiopu, Björn Frenéus, Bo Jansson, Ingrid Söderberg, Irena Ljungcrantz, Zufan Araya, Prediman K. Shah, Roland Carlsson, Jan Nilsson, Gunilla Nordin Fredrikson; Recombinant Antibodies to an Oxidized Low Density Lipoprotein Epitope Induce Rapid Regression of Atherosclerosis in Apobec-1-/- Low-Density Lipoprotein Receptor-/- Mice; Journal of the American College of Cardiology Vol. 50, No. 24, 2007.

\* Chao-yuh Yang, Joe L. Raya, Hsin-Hung Chen, Chu-Hung Chen, Yasunori Abe, Henry Pownall, Addison A. Taylor and Charles V. Smith. Isolation, Characterization and Cytotoxic Effects of Circulating Oxidatively Modified Low-Density Lipoproteins, Arterioscler Thromb Vasc Biol. 2003; 23 (6), 1083-1090 (Goat anti-human apoAI, apoB-100, ApoCIII, apoE antibodies were used to study human low density lipoproteins subfractions. L5 is modified with MDA).

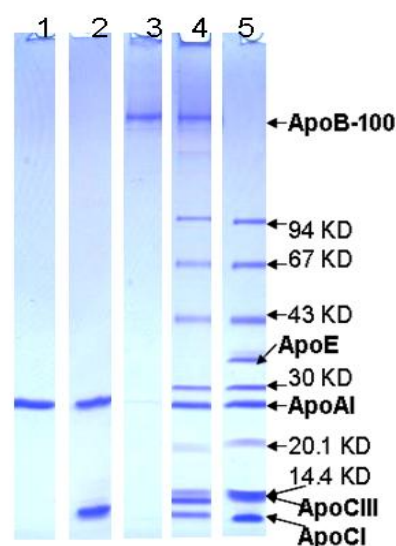
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# Human Apolipoproteins SDS-PAGE Standards

Item	Product	Catalog No.	Unit	Price	Remark
SP1	Human Apo AI SDS-PAGE Standard	SDS-AI-STD	0.1 ml		Apo AI Standard for SDS-PAGE, 0.2 mg/ml, preserved in loading buffer.
SP2	Human Apo AI/All SDS-PAGE Standard	SDS-As-STD	0.1 ml		Apo AI and All Standard for SDS-PAGE, 0.2 mg/ml, preserved in loading buffer.
SP3	Human Apo B-100 SDS-PAGE Standard	SDS-B100-STD	0.1 ml		Apo B-100 Standard for SDS-PAGE, 0.2 mg/ml, preserved in loading buffer.
SP4	Human ApoCs SDS-PAGE Standard	SDS-Cs-STD	0.1 ml		Apo CI, CII, and CIII Standard for SDS-PAGE, 0.2 mg/ml, preserved in loading buffer.
SP5	Human Apo As/Cs SDS-PAGE Standard	SDS-As/Cs-STD	0.1 ml		Apo AI, AII, CI, CII, and CIII Standard for SDS-PAGE, 0.2 mg/ml, preserved in loading buffer.
SP6	Human Apolipoprotein Mix1 SDS-PAGE Standard	SDS-Mix1-STD	0.1 ml		Apo AI, AII, B-100, and CIII Standard for SDS-PAGE, 0.2 mg/ml, preserved in loading buffer.
SP7	Human Apolipoprotein Mix2 SDS-PAGE Standard	SDS-Mix2-STD	0.1 ml		Apo AI, CI, CIII and E Standard for SDS-PAGE, 0.2 mg/ml, preserved in loading buffer.



**Figure 1:** SDS PAGE of Apoprotein Standard on a 18% gel (12 wells, Invitrogen) with 30 mA and 65 minutes; Lane 1 to lane 7 represents Item SP1 to Sp7, respectively.



**Figure 2:** SDS PAGE of Apoprotein Standard on a 4-20% gel (10 wells, Invitrogen) with 30 mA and 60 minutes; Lane 1, 2, 3, 4, and 5 represents Item SP1, SP2, SP3, SP6, and SP7, respectively.

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# Polyclonal Neat Antisera

## From Human Apolipoproteins

Item	Product	Catalog No.	Unit	Price	Remark
S01	Goat Anti-Human Albumin Neat Antiserum	AL10S-G1 AL10S-G1	1.5 ml 5.0 ml		Dilution for Immunoblot & ELISA range: 1,000 to 320,000.
S02	Sheep Anti-Human Apolipoprotein (a) Neat Antiserum	10S-SP1b	1.0 ml		No cross-reaction to apoB-100; minor to plasminogen. Dilution for Immunoblot & ELISA range: 1,000 to 200,000.
S03	Goat Anti-Human Apolipoprotein AI Neat Antiserum	11S-G2 11S-G2	1.5 ml 5.0 ml		Dilution for Immunoblot & ELISA range: 1,000 to 400,000.
S04	Goat Anti-Human Apolipoprotein AII Neat Antiserum	12S-G3b 12S-G3	1.0 ml 5.0 ml		Dilution for Immunoblot & ELISA range: 1,000 to 160,000.
S05	Sheep Anti-Human Apolipoprotein AII Neat Antiserum	12S-S1b 12S-S1	1.0 ml 5.0 ml		Dilution for Immunoblot & ELISA range: 1,000 to 320,000.
S06	Rabbit Anti-Human Apolipoprotein AII Neat Antiserum	12S-R1a 12S-R1b	0.5 ml 1.0 ml		Dilution for Immunoblot & ELISA range: 1,000 to 80,000.
S07	Goat Anti-Human Apolipoprotein B-100 Neat Antiserum	20S-G2 20S-G2	1.5 ml 5.0 ml		Dilution for Immunoblot & ELISA range: 1,000 to 200,000.
S08	Goat Anti-Human Apolipoprotein CI Neat Antiserum	31S-G1b 31S-G1	1.0 ml 5.0 ml		Dilution for Immunoblot & ELISA range: 1,000 to 80,000.
S09	Rabbit Anti-Human Apolipoprotein CI Neat Antiserum	31S-R1a 31S-R1b	0.5 ml 1.0 ml		Dilution for Immunoblot & ELISA range: 1,000 to 80,000.
S10	Goat Anti-Recombinant- Human Apolipoprotein CII Neat Antiserum	32GS-G2b 32GS-G2	1.0 ml 5.0 ml		Dilution for Immunoblot & ELISA range: 1,000 to 80,000.
S11	Goat Anti-Human Apolipoprotein CII Neat Antiserum	32S-G4b 32S-G4	1.0 ml 5.0 ml		Dilution for Immunoblot & ELISA range: 1,000 to 80,000.

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# Polyclonal Neat Antisera

## From Human Apolipoproteins

Item	Product	Catalog No.	Unit	Price	Remark
S12	Rabbit Anti-Human Apolipoprotein CII Neat Antiserum	32S-R1a	0.5 ml		Dilution for Immunoblot & ELISA range: 1,000 to 160,000.
		32S-R1b	1.0 ml		
S13	Goat Anti-Human Apolipoprotein CIII Neat Antiserum	33S-G2b	1.0 ml		Dilution for Immunoblot & ELISA range: 1,000 to 160,000.
		33S-G2	5.0 ml		
S14	Rabbit Anti-Human Apolipoprotein CIII Neat Antiserum	33S-R1a	0.5 ml		Dilution for Immunoblot & ELISA range: 1,000 to 160,000.
		33S-R1b	1.0 ml		
S15	Goat Anti-Human Apolipoprotein E Neat Antiserum	50S-G1b	1.0 ml		Dilution for Immunoblot & ELISA range: 1,000 to 800,000.
		50S-G1	5.0 ml		
S24	Goat Anti-Human CRP (C-Reactive Protein) Neat Antiserum	CRP30S-G1b	1.0 ml		Dilution for Immunoblot & ELISA range: 1,000 to 80,000.
		CRP30S-G1	5.0 ml		
S25	Rabbit Anti-Human CRP (C-Reactive Protein) Neat Antiserum	CRP30S-R1a	0.5 ml		Dilution for Immunoblot & ELISA range: 1,000 to 160,000.
		CRP30S-R1b	1.0 ml		
S26	Goat Anti-Human Plasminogen Neat Antiserum	PG60S-G1b	1.0 ml		Dilution for Immunoblot & ELISA range: 1,000 to 800,000.
		PG60S-G1	5.0 ml		

**\* Information of C-Reactive Protein (CRP), a biomarker associated with cardiovascular events**

Human C-Reactive Protein (CRP) is an important biomarker for predicting of future cardiovascular events, such as heart attack and stroke.

CRP is an acute phase protein produced by the liver. It is a member of the pentraxin family of proteins with five identical nonglycosylated subunits of 206 amino acids each (m.w. 24 kDa). Among other markers of inflammation, CRP has shown the strongest association with cardiovascular events. Clinical studies demonstrated that coronary mortality among patients with unstable angina and elevated CRP is significantly higher comparing with the patients without elevated CRP. It is an important biomarker for detecting individuals at high risk of plaque rupture.

Our series of CRP products including Human C-Reactive Protein (CRP), Rabbit Anti-Human-CRP, Goat ant-Human CRP, and its modified conjugated antibodies, such as HRP, Biotin, and FITC products can be used for detecting CRP levels to evaluate the risk of heart attack.

**Applications in the study:**

\*Jeremy D Furtado, Hannia Campos, Anne E Sumner, Lawrence J Appel, Vincent J Carey, and Frank M Sacks. Dietary interventions that lower lipoproteins containing apolipoprotein C-III are more effective in whites than in blacks: results of the OmniHeart trial. *Am J Clin Nutr* 2010;92:714–22.

\*Carlos O. Mendivil; Chunyu Zheng; Jeremy Furtado; Julian Lel; Frank M. Sacks. Metabolism of Very-Low-Density Lipoprotein and Low-Density Lipoprotein Containing Apolipoprotein C-III and Not Other Small Apolipoproteins. *Arterioscler Thromb Vasc Biol.* 2010; 30:239-245.

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# Polyclonal Neat Antisera

## From Oxidized/Modified Proteins

Item	Product	Catalog No.	Unit	Price	Remark
S16	Goat Anti-MDA (Malondialdehyde) Neat Antiserum	MD20S-G1a MD20S-G1b	0.5 ml 1.0 ml		Dilution for Immunoblot & ELISA range: 1,000 to 80,000.
S17	Rabbit Anti-MDA (Malondialdehyde) Neat Antiserum	MD20S-R1a MD20S-R1b	0.5 ml 1.0 ml		Dilution for Immunoblot & ELISA range: 1,000 to 80,000.
S18	Goat Anti-Nitrotyrosine Neat Antiserum	NY20S-G1a NY20S-G1b	0.5 ml 1.0 ml		Dilution for Immunoblot & ELISA range: 1,000 to 80,000.
S19	Rabbit Anti-Nitrotyrosine Neat Antiserum	NY20S-R1a NY20S-R1b	0.5 ml 1.0 ml		Dilution for Immunoblot & ELISA range: 1,000 to 40,000.
S20	Goat anti-CML (Carboxymethyl-lysine) Neat Antiserum	CML30S-G1a CML30S-G1b	0.5 ml 1.0 ml		Dilution for Immunoblot & ELISA range: 1,000 to 80,000.
S21	Rabbit anti-CML (Carboxymethyl-lysine) Neat Antiserum	CML30S-R1a CML30S-R1b	0.5 ml 1.0 ml		Dilution for Immunoblot & ELISA range: 1,000 to 80,000.
S22	Goat Anti-HNE (Hydroxynonenal) Neat Antiserum	HNE40S-G1a HNE40S-G1b	0.5 ml 1.0 ml		Dilution for Immunoblot & ELISA range: 1,000 to 20,000.
S23	Rabbit Anti-HNE (Hydroxynonenal) Neat Antiserum	HNE40S-R1a HNE40S-R1b	0.5 ml 1.0 ml		Dilution for Immunoblot & ELISA range: 1,000 to 20,000.
S27	Goat Anti-CBL (Carbamyl-lysine) Neat Antiserum	CBL30S-G1a CBL30S-G1b	0.5 ml 1.0 ml		Dilution for Immunoblot & ELISA range: 1,000 to 40,000.
S28	Rabbit Anti-CBL (Carbamyl-lysine) Neat Antiserum	CBL30S-R1a CBL30S-R1b	0.5 ml 1.0 ml		Dilution for Immunoblot & ELISA range: 1,000 to 40,000.

### Applications in the study:

\* G. Muntane, E. Dalfo, A. Martinez, M. J. Rey, J. Avila, M. Perez, M. Portero, R. Pamplona, V. Ayala, and I. Ferrer; Glial fibrillary acidic protein is a major target of glycooxidative and lipoxidative damage in Pick's disease; *J. Neurochem.* (2006) 99, 177-185.

\* Reinald Pamplona, Esther Dalfo, Victoria Ayala, Maria Josep Bellmunt, Joan Prat, Isidre Ferrer, Manuel Portero-Otin. Proteins in Human Brain Cortex Are Modified by Oxidation, Glycooxidation, and Lipoxidation. *JBC*, (2005) 280(22); 21522-21530.

\* Esther Dalfo, PhD; Manuel Portero-Otin, MD, PhD; Victoria Ayala, PhD; Anna Martinez; Reinald Pamplona, MD, PhD; Isidre Ferrer, MD, PhD.; Evidence of Oxidative Stress in the Neocortex in Incidental Lewy Body Disease *J Neuropathol Exp Neurol.* (2005); 64 (9): 816-830.

\* Lindgren, Mikko P.S. Ares, Prediman K. Shah, Roland Carlsson, Jan Nilsson and Alexandru Schiopu, Jenny Bengtsson, Ingrid Söderberg, Sabina Janciauskiene, Stefan; B-100 Peptide Sequences Inhibit Atherosclerosis Recombinant Human Antibodies Against Aldehyde-Modified Apolipoprotein; *Circulation* 2004;110;2047-2052.

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# Affinity Pure Polyclonal Antibodies

## From Oxidized/Modified Proteins

Item	Product	Catalog No.	Unit	Price	Remark
A16	Goat Anti-MDA (Malondialdehyde) Affinity Pure	MD20A-G1a MD20A-G1b	0.5 mg 1.0 mg		Dilution for Immunoblot & ELISA range: 1,000 to 20,000.
A17	Rabbit Anti-MDA ( Malondialdehyde ) Affinity Pure	MD20A-R1a MD20A-R1b	0.5 mg 1.0 mg		Dilution for Immunoblot & ELISA range: 1,000 to 20,000.
A18	Goat Anti-Nitrotyrosine Affinity Pure	NY20A-G1a NY20A-G1b	0.5 mg 1.0 mg		Dilution for Immunoblot & ELISA range: 1,000 to 40,000.
A19	Rabbit Anti-Nitrotyrosine Affinity Pure	NY20A-R1a NY20A-R1b	0.5 mg 1.0 mg		Dilution for Immunoblot & ELISA range: 1,000 to 8,000.
A20	Goat anti-CML (Carboxymethyl-lysine) Affinity Pure	CML30A-G1a CML30A-G1b	0.5 mg 1.0 mg		Dilution for Immunoblot & ELISA range: 1,000 to 20,000.
A21	Rabbit anti-CML (Carboxymethyl-lysine) Affinity Pure	CML30A-R1a CML30A-R1b	0.5 mg 1.0 mg		Dilution for Immunoblot & ELISA range: 1,000 to 20,000.
A22	Goat Anti-HNE (Hydroxynonenal) Affinity Pure	HNE40A-G1c HNE40A-G1a HNE40A-G1b	0.2 mg 0.5 mg 1.0 mg		Dilution for Immunoblot & ELISA range: 1,000 to 8,000.
A23	Rabbit Anti-HNE (Hydroxynonenal) Affinity Pure	HNE40A-R1d HNE40A-R1c HNE40A-R1a	0.1 mg 0.2 mg 0.5 mg		Dilution for Immunoblot & ELISA range: 1,000 to 8,000.
A26	Goat Anti-CBL (Carbamyl-lysine) Affinity Pure	CBL30A-G1c CBL30A-G1a CBL30A-G1b	0.2 mg 0.5 mg 1.0 mg		Dilution for Immunoblot & ELISA range: 1,000 to 8,000.
A27	Rabbit Anti-CBL (Carbamyl-lysine) Affinity Pure	CBL30A-R1d CBL30A-R1c CBL30A-R1a	0.1 mg 0.2 mg 0.5 mg		Dilution for Immunoblot & ELISA range: 1,000 to 8,000.

### Applications in the study:

\* Corina Rosales, Baiba K. Gillard, Harry S. Courtney, Francisco Blanco-Vaca, and Henry J. Pownall. Apolipoprotein Modulation of Streptococcal Serum Opacity Factor Activity against Human Plasma High-Density Lipoproteins. *Biochemistry* 2009, 48, 8070–8076.

\* M. Freixes, A. Rodr'iguez, E. Dalfo, I. Ferrer; Oxidation, glycooxidation, lipoxidation, nitration, and responses to oxidative stress in the cerebral cortex in Creutzfeldt–Jakob disease. *Neurobiology of Aging*; 27 (2006) 1807–1815 (MDA antibody was used in this study).

\* G. Muntane, E. Dalfo, A. Martinez, M. J. Rey, J. Avila, M. Perez, M. Portero, R. Pamplona, V. Ayala, and I. Ferrer. Glial fibrillary acidic protein is a major target of glycooxidative and lipoxidative damage in Pick's disease; *J. Neurochem.* (2006) 99, 177-185 (MDA antibody was used in this study).

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# Affinity Pure Polyclonal Antibodies

## From Human Apolipoproteins

Item	Product	Catalog No.	Unit	Price	Remark
A01	Goat Anti-Human Albumin Affinity Pure	AL10A-G1b AL10A-G1	1.0 mg 5.0 mg		Dilution for Immunoblot & ELISA range: 1,000 to 80,000.
A02	Sheep Anti-Human Apolipoprotein (a) Affinity Pure	10A-S1a 10A-S1b	0.5 mg 1.0 mg		Dilution for Immunoblot & ELISA range: 1,000 to 80,000.
A03	Goat Anti-Human Apolipoprotein AI Affinity Pure	11A-G2b 11A-G2	1.0 mg 5.0 mg		Dilution for Immunoblot & ELISA range: 1,000 to 80,000.
A04	Goat Anti-Human Apolipoprotein AII Affinity Pure	12A-G1a 12A-G1b	0.5 mg 1.0 mg		Dilution for Immunoblot & ELISA range: 1,000 to 40,000.
A05	Sheep Anti-Human Apolipoprotein AII Affinity Pure	12A-S1a 12A-S1b	0.5 mg 1.0 mg		Dilution for Immunoblot & ELISA range: 1,000 to 80,000.
A06	Rabbit Anti-Human Apolipoprotein AII Affinity Pure	12A-R1a 12A-R1b	0.5 mg 1.0 mg		Dilution for Immunoblot & ELISA range: 1,000 to 20,000.
A07	Goat Anti-Human Apolipoprotein B-100 Affinity Pure	20A-G1b 20A-G1	1.0 mg 5.0 mg		Dilution for Immunoblot & ELISA range: 1,000 to 80,000.
A08	Goat Anti-Human Apolipoprotein CI Affinity Pure	31A-G1a 31A-G1b	0.5 mg 1.0 mg		Dilution for Immunoblot & ELISA range: 1,000 to 20,000.
A09	Rabbit Anti-Human Apolipoprotein CI Affinity Pure	31A-R1a 31A-R1b	0.5 mg 1.0 mg		Dilution for Immunoblot & ELISA range: 1,000 to 8,000.
A10	Goat Anti-Human Apolipoprotein CII Affinity Pure	32A-G2a 32A-G2b	0.5 mg 1.0 mg		Dilution for Immunoblot & ELISA range: 1,000 to 8,000.
A11	Rabbit Anti-Human Apolipoprotein CII Affinity Pure	32A-R1a 32A-R1b	0.5 mg 1.0 mg		Dilution for Immunoblot & ELISA range: 1,000 to 8,000.

The products are for in vitro research use only, not for use in human therapeutic or diagnostic applications.

# Affinity Pure Polyclonal Antibodies

## From Human Apolipoproteins

Item	Product	Catalog No.	Unit	Price	Remark
A12	Goat Anti-Human	33A-G2a	0.5 mg		Dilution for Immunoblot & ELISA range: 1,000 to 40,000.
	Apolipoprotein CIII	33A-G2b	1.0 mg		
	Affinity Pure	33A-G2	5.0 mg		
A13	Rabbit Anti-Human	33A-R1a	0.5 mg		Dilution for Immunoblot & ELISA range: 1,000 to 40,000.
	Apolipoprotein CIII	33A-R1b	1.0 mg		
A14	Goat Anti-Human	50A-G1a	0.5 mg		Dilution for Immunoblot & ELISA range: 1,000 to 80,000.
	Apolipoprotein E	50A-G1b	1.0 mg		
	Affinity Pure	50A-G1	5.0 mg		
A15	Goat Anti-Human	PG60A-G1b	1.0 mg		Dilution for Immunoblot & ELISA range: 1,000 to 8,000.
	Plasminogen	PG60A-G1	5.0 mg		
A24	Goat Anti-Human CRP	CRP30A-G1a	0.5 mg		Dilution for Immunoblot & ELISA range: 1,000 to 80,000.
	(C-Reactive Protein)	CRP30A-G1b	1.0 mg		
	Affinity Pure				
A25	Rabbit Anti-Human CRP	CRP30A-R1a	0.5 mg		Dilution for Immunoblot & ELISA range: 1,000 to 160,000.
	(C-Reactive Protein)	CRP30A-R1b	1.0 mg		

### Affinity purification of antibodies using specific affinity agarose gel:

A gel matrix conjugated with specific antigen is used to recover affinity-purifying antibody from antiserum.

CNBr-activated Sepharose 4B from Pharmacia, Amersham Biosciences containing 4% agarose was chosen for immobilizing specific antigen by coupling them to the matrix.

### Applications in the study:

\* Chunyu Zheng, ScD; Christina Khoo, PhD; Jeremy Furtado, ScD; Frank M. Sacks, MD. Apolipoprotein C-III and the Metabolic Basis for Hypertriglyceridemia and the Dense Low-Density Lipoprotein Phenotype. *Circulation*. 2010;121:1722-1734.

\* Yasuko Abe, Akio Kawakami, Mizuko Osaka, Satoshi Uematsu, Shizuo Akira, Kentaro Shimokado, Frank M. Sacks, Masayuki Yoshida. Apolipoprotein CIII Induces Monocyte Chemoattractant Protein-1 and Interleukin 6 Expression Via Toll-Like Receptor 2 Pathway in Mouse Adipocytes. *Arterioscler Thromb Vasc Biol*. 2010;30:2242-2248.

\* Chunyu Zheng, Christina Khoo, Jeremy Furtado, Katsunori Ikewaki, and Frank M Sacks, Dietary monounsaturated fat activates metabolic pathways for triglyceride-rich lipoproteins that involve apolipoproteins E and C-III, *Am J Clin Nutr* 2008;88:272– 81.

\* Akio Kawakami, MD; Mizuko Osaka, BS; Mariko Tani, PhD; Hiroshi Azuma, PhD; Frank M. Sacks, MD; Kentaro Shimokado, MD; Masayuki Yoshida, MD Apolipoprotein CIII Links Hyperlipidemia With Vascular Endothelial Cell Dysfunction, *Circulation*. 2008;118:731-742.

\* Zheng C, Khoo C, Ikewaki K, Sacks FM. Rapid turnover of apolipoprotein C-III-containing triglyceride-rich lipoproteins contributing to the formation of LDL subfractions. *J Lipid Res*. 2007 May;48(5):1190-203. Epub 2007 Feb 21.

\* Jeremy D Furtado, Hannia Campos, Lawrence J Appel, Edgar R Miller, Nancy Laranjo, Vincent J Carey, and Frank M Sacks; Effect of protein, unsaturated fat, and carbohydrate intakes on plasma apolipoprotein B and VLDL and LDL containing apolipoprotein C-III: results from the OmniHeart Trial; *Am J Clin Nutr* 2008;87:1623-30.

**The products are for in vitro research use only, not for use in human therapeutic or diagnostic applications.**

# Biotinylated Polyclonal Antibodies

## From Human Apolipoproteins

Item	Product	Catalog No.	Unit	Price	Remark
B01	Biotinylated Goat Anti-Human Albumin	AL10B-G1a AL10B-G1b	0.5 ml 1.0 ml		Freeze-dried powder. Dilution for Immunoblot & ELISA range: 1,000 to 20,000.
B02	Biotinylated Sheep Anti-Human Apolipoprotein (a)	10B-S1a 10B-S1b	0.5 ml 1.0 ml		Freeze-dried powder. Dilution for Immunoblot & ELISA range: 1,000 to 20,000.
B03	Biotinylated Goat Anti-Human Apolipoprotein AI	11B-G2a 11B-G2b	0.5 ml 1.0 ml		Freeze-dried powder. Dilution for Immunoblot & ELISA range: 1,000 to 20,000.
B04	Biotinylated Goat Anti-Human Apolipoprotein AII	12B-G1a 12B-G1b	0.5 ml 1.0 ml		Freeze-dried powder. Dilution for Immunoblot & ELISA range: 1,000 to 8,000.
B05	Biotinylated Sheep Anti-Human Apolipoprotein AIII	12B-S1a 12B-S1b	0.5 ml 1.0 ml		Freeze-dried powder. Dilution for Immunoblot & ELISA range: 1,000 to 10,000.
B06	Biotinylated Goat Anti-Human ApoB-100	20B-G1a 20B-G1b	0.5 ml 1.0 ml		Freeze-dried powder. Dilution for Immunoblot & ELISA range: 1,000 to 40,000.
B07	Biotinylated Goat Anti-Human Apolipoprotein CI	31B-G1a 31B-G1b	0.5 ml 1.0 ml		Freeze-dried powder. Dilution for Immunoblot & ELISA range: 1,000 to 8,000.
B08	Biotinylated Goat Anti-Human Apolipoprotein CII	32B-G1a 32B-G1b	0.5 ml 1.0 ml		Freeze-dried powder. Dilution for Immunoblot & ELISA range: 1,000 to 5,000.
B09	Biotinylated Goat Anti-Human Apolipoprotein CIII	33B-G1a 33B-G1b	0.5 ml 1.0 ml		Freeze-dried powder. Dilution for Immunoblot & ELISA range: 1,000 to 20,000.
B10	Biotinylated Goat Anti-Human Apolipoprotein E	50B-G1a 50B-G1b	0.5 ml 1.0 ml		Freeze-dried powder. Dilution for Immunoblot & ELISA range: 1,000 to 20,000.

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# Biotinylated Polyclonal Antibodies

## From Human Apolipoproteins

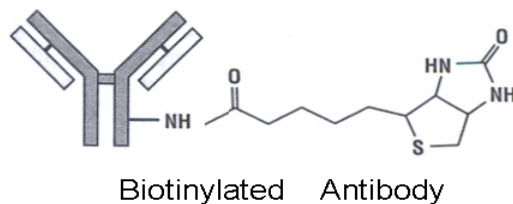
Item	Product	Catalog No.	Unit	Price	Remark
B11	Biotinylated Goat Anti-Human Plasminogen	PG60B-G1a PG60B-G1b	0.5 ml 1.0 ml		Freeze-dried powder. Dilution for Immunoblot & ELISA range: 1,000 to 8,000.
B16	Biotinylated Goat Anti-Human CRP (C-Reactive Protein)	CRP30B-G1a CRP30B-G1b	0.5 ml 1.0 ml		Freeze-dried powder. Dilution for Immunoblot & ELISA range: 1,000 to 8,000.

To increase the application of our antibodies in the field of cardiovascular research, we labeled antibodies with Biotin, fluorescein isothiocyanate (FITC), or horseradish peroxidase (HRP), for bio-chemical assays. Covalently attaching such a label to an antibody combines the unique specificity of the antibody with a sensitive means for detection.

Biotin, a 244 Da vitamin found in tissue and blood, binds with high affinity to avidin and streptavidin protein. Biotin-labeled antibodies (1) can be used as excellent analytical tools to detect specific epitopes in tissue sections or sample of interest. The avidin-biotin interaction has been found to be useful in immunochemical analysis that increased the sensitivity of protein detection and the interacting molecules in these assays can usually be biotinylated without loss of biological or binding activity (2, 3).

#### References:

1. Hofmann K, Titus G, Montibeller JA, Finn FM. Avidin binding of carboxyl-substituted biotin and analogues *Biochemistry*. 1982 Mar 2;21(5):978-84.
2. Korpela J. Avidin, a high affinity biotin-binding protein, as a tool and subject of biological research. *Med Biol*. 1984;62(1):5-26.
3. Bayer EA, Wilchek M. The use of the avidin-biotin complex as a tool in molecular biology. *Methods Biochem Anal*. 1980;26:1-45.



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# HRP-conjugated Polyclonal Antibodies

## From Human Apolipoproteins

Item	Product	Catalog No.	Unit	Price	Remark
H01	HRP-conjugated Goat Anti-Human Albumin	AL10H-G1a AL10H-G1b	0.5 ml 1.0 ml		Freeze-dried powder. Dilution for Immunoblot & ELISA range: 1,000 to 8,000.
H02	HRP-conjugated Sheep Anti-Human Apolipoprotein (a)	10H-S1a	0.5 ml		Freeze-dried powder. Dilution for Immunoblot & ELISA range: 1,000 to 8,000.
H03	HRP-conjugated Goat Anti-Human Apolipoprotein AI	11H-G1a 11H-G1b	0.5 ml 1.0 ml		Freeze-dried powder. Dilution for Immunoblot & ELISA range: 1,000 to 8,000.
H04	HRP-conjugated Goat Anti-Human Apolipoprotein AII	12H-G2a 12H-G2b	0.5 ml 1.0 ml		Freeze-dried powder. Dilution for Immunoblot & ELISA range: 1,000 to 6,000.
H05	HRP-conjugated Sheep Anti-Human Apolipoprotein AIII	12H-S1a 12H-S1b	0.5 ml 1.0 ml		Freeze-dried powder. Dilution for Immunoblot & ELISA range: 1,000 to 6,000.
H06	HRP-conjugated Goat Anti-Human Apolipoprotein B-100	20H-G1a 20H-G1b	0.5 ml 1.0 ml		Freeze-dried powder. Dilution for Immunoblot & ELISA range: 1,000 to 8,000.
H07	HRP-conjugated Goat Anti-Human Apolipoprotein CI	31H-G1a 31H-G1b	0.5 ml 1.0 ml		Freeze-dried powder. Dilution for Immunoblot & ELISA range: 1,000 to 4,000.
H08	HRP-conjugated Goat Anti-Human Apolipoprotein CII	32H-G4a 32H-G4b	0.5 ml 1.0 ml		Freeze-dried powder. Dilution for Immunoblot & ELISA range: 1,000 to 4,000.
H09	HRP-conjugated Goat Anti-Human Apolipoprotein CIII	33H-G2a 33H-G2b	0.5 ml 1.0 ml		Freeze-dried powder. Dilution for Immunoblot & ELISA range: 1,000 to 6,000.
H10	HRP-conjugated Goat Anti-Human Apolipoprotein E	50H-G1a 50H-G1b	0.5 ml 1.0 ml		Freeze-dried powder. Dilution for Immunoblot & ELISA range: 1,000 to 8,000.

The products are for in vitro research use only, not for use in human therapeutic or diagnostic applications.

# HRP-conjugated Polyclonal Antibodies

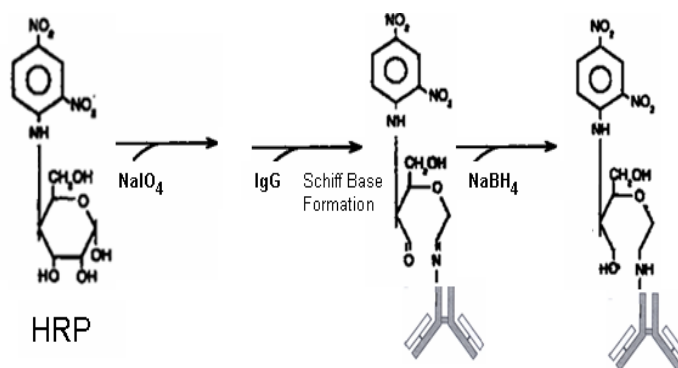
## From Human Apolipoproteins

Item	Product	Catalog No.	Unit	Price	Remark
H11	HRP-conjugated Goat Anti-Human Plasminogen	PG60H-G1a PG60H-G1b	0.5 ml 1.0 ml		Freeze-dried powder. Dilution for Immunoblot & ELISA range: 1,000 to 4,000.
H16	HRP-conjugated Goat Anti-Human CRP (C-Reactive Protein)	CRP30H-G1a CRP30H-G1b	0.5 ml 1.0 ml		Freeze-dried powder. Dilution for Immunoblot & ELISA range: 1,000 to 4,000.

HRP, 40 KD; catalyzes the oxidation of substrates by hydrogen peroxide, resulting in a colored product or the release of light as by a product. The optimally operation pH for HRP is ranged from 5 to 7 and can be inhibited by cyanides, sulfides and azides. It is ideal in ELISA (1), blotting, and histochemistry application. Periodate method was used to conjugate HRP to antibodies (2,3).

### References:

1. Valentinova, N.V., Gu, Z.W., Yang, M., Yanusheuskaya, E.V., Antonov, I.V., Guyton, J.R., Smith, C.V., Gotto, A.M. Jr., and Yang, C.Y. Immunoreactivity of Apolipoprotein B-100 in Oxidatively Modified Low Density Lipoprotein. *Biological Chemistry Hoppe-Seyler* (1994) 375:651-658.
2. Wilson MB, Nakane PK. The covalent coupling of proteins to periodate-oxidized sephadex: a new approach to immunoabsorbent preparation. *J Immunol Methods*. 1976;12(1-2):171-81.
3. Wolfe CA, Hage DS. Studies on the rate and control of antibody oxidation by periodate. *Anal Biochem*. 1995 Oct 10;231(1):123-30.



Conjugation of HRP to Antibody (IgG)

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# FITC-conjugated Polyclonal Antibodies

## From Human Apolipoproteins

Item	Product	Catalog No.	Unit	Price	Remark
F01	FITC-conjugated Goat Anti-Human Albumin	AL10F-G1a AL10F-G1b	0.5 ml 1.0 ml		Molar F/P Ratio: 4.9. Freeze-dried powder.
F02	FITC-conjugated Sheep Anti-Human Apolipoprotein (a)	10F-S1a	0.5 ml		Molar F/P Ratio: 5.7. Freeze-dried powder.
F03	FITC-conjugated Goat Anti-Human Apolipoprotein AI	11F-G2a 11F-G2b	0.5 ml 1.0 ml		Molar F/P Ratio: 3.3. Freeze-dried powder.
F04	FITC-conjugated Goat Anti-Human Apolipoprotein AII	12F-G3a	0.5 ml		Molar F/P Ratio: 4.7. Freeze-dried powder.
F05	FITC-conjugated Sheep Anti-Human Apolipoprotein AII	12F-S1a	0.5 ml		Molar F/P Ratio: 6.6. Freeze-dried powder.
F06	FITC-conjugated Goat Anti-Human ApolipoproteinB-100	20F-G1a 20F-G1b	0.5 ml 1.0 ml		Molar F/P Ratio: 6.1. Freeze-dried powder.
F07	FITC-conjugated Goat Anti-Human Apolipoprotein CI	31F-G1a 31F-G1b	0.5 ml 1.0 ml		Molar F/P Ratio: 3.0. Freeze-dried powder.
F08	FITC-conjugated Goat Anti-Human Apolipoprotein CII	32F-G2a 32F-G2b	0.5 ml 1.0 ml		Molar F/P Ratio: 5.0. Freeze-dried powder.
F09	FITC-conjugated Goat Anti-Human Apolipoprotein CIII	33F-G2a 33F-G2b	0.5 ml 1.0 ml		Molar F/P Ratio: 3.6. Freeze-dried powder.
F10	FITC-conjugated Goat Anti-Human Apolipoprotein E	50F-G1a	0.5 ml		Molar F/P Ratio: 4.6. Freeze-dried powder.

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# FITC-conjugated Polyclonal Antibodies

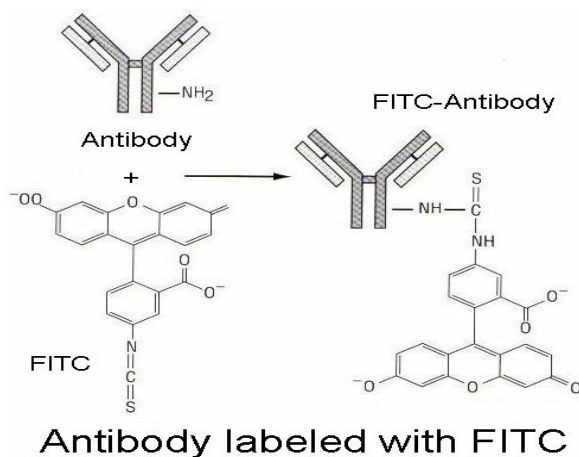
## From Human Apolipoproteins

Item	Product	Catalog No.	Unit	Price	Remark
F11	FITC-conjugated Goat Anti-Human Plasminogen	PG60F-G1a	0.5 ml		Molar F/P Ratio: 4.0. Freeze-dried powder.
F16	FITC-conjugated Goat Anti-CRP (C-Reactive Protein)	CRP30F-G1a CRP30F-G1b	0.5 ml 1.0 ml		Molar F/P Ratio: 4.6. Freeze-dried powder.

Fluorescein isothiocyanate (FITC), one of the most common fluorescent probes has been widely and successfully applied to antibody-based assays. Such fluorescently labeled antibodies can be used in immunohistochemical staining, in flow cytometry or cell sorting techniques, for tracking and localization of antigens, and in various double-staining methods (1-3).

### References:

1. Der-Balian GP, Kameda N, Rowley GL. Fluorescein labeling of Fab' while preserving single thiol. *Anal Biochem.* 1988 Aug 15;173(1):59-63.
2. Hebert GA, Pittman B, McKinney RM. Optimal fluorescein-to-protein ratios of bacterial direct fluorescent-antibody reagents. *J Clin Microbiol.* 1981 Mar;13(3):498-502.
3. Vera JC, Rivas CI, Cortes PA, Carcamo JO, Delgado J. Purification, amino terminal analysis, and peptide mapping of proteins after in situ postelectrophoretic fluorescent labeling. *Anal Biochem.* 1988 Oct;174(1):38-45.



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# Conjugated Polyclonal Antibodies

## From Oxidized/Modified Proteins

Item	Product	Catalog No.	Unit	Price	Remark
B12	Biotinylated Goat Anti-MDA (Malondialdehyde)	MD20B-G1a MD20B-G1b	0.5 ml 1.0 ml		Freeze-dried powder. Dilution for Immunoblot & ELISA range: 1,000 to 8,000.
B13	Biotinylated Goat Anti-Nitrotyrosine	NY20B-G1a NY20B-G1b	0.5 ml 1.0 ml		Freeze-dried powder. Dilution for Immunoblot & ELISA range: 1,000 to 20,000.
B14	Biotinylated Goat Anti-CML (Carboxymethyl-lysine)	CML30B-G1a CML30B-G1b	0.5 ml 1.0 ml		Freeze-dried powder. Dilution for Immunoblot & ELISA range: 1,000 to 8,000.
B15	Biotinylated Goat Anti-HNE (Hydroxynonenal)	HNE40B-G1c HNE40B-G1a	0.2 ml 0.5 ml		Freeze-dried powder. Dilution for Immunoblot & ELISA range: 1,000 to 4,000.
H12	HRP-conjugated Goat Anti-MDA ( Malondialdehyde )	MD20H-G1a MD20H-G1b	0.5 ml 1.0 ml		Freeze-dried powder. Dilution for Immunoblot & ELISA range: 1,000 to 6,000.
H13	HRP-conjugated Goat Anti-Nitrotyrosine	NY20H-G1a NY20H-G1b	0.5 ml 1.0 ml		Freeze-dried powder. Dilution for Immunoblot & ELISA range: 1,000 to 8,000.
H14	HRP-conjugated Goat Anti-CML (Carboxymethyl-lysine)	CML30H-G1a CML30H-G1b	0.5 ml 1.0 ml		Freeze-dried powder. Dilution for Immunoblot & ELISA range: 1,000 to 4,000.
H15	HRP-conjugated Goat Anti-HNE (Hydroxynonenal)	HNE40H-G1d HNE40H-G1c	0.1 ml 0.2 ml		Freeze-dried powder. Dilution for Immunoblot & ELISA range: 1,000 to 4,000.
F12	FITC-conjugated Goat Anti-MDA ( Malondialdehyde )	MD20F-G1a	0.5 ml		Freeze-dried powder. Molar F/P Ratio: 3.1.
F13	FITC-conjugated Goat Anti-Nitrotyrosine	NY20F-G1a	0.5 ml		Freeze-dried powder. Molar F/P Ratio: 4.6.
F14	FITC-conjugated Goat Anti-CML (Carboxymethyl-lysine)	CML30F-G1a CML30F-G1b	0.5 ml 1.0 ml		Freeze-dried powder. Molar F/P Ratio: 2.7.
F15	FITC-conjugated Goat Anti-HNE (Hydroxynonenal)	HNE40F-G1c HNE40F-G1a	0.2 ml 0.5 ml		Freeze-dried powder. Molar F/P Ratio: 4.7.

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# Customized Antibody Affinity Agarose Gel

We are offering antibody affinity agarose gel for immobilizing specific apolipoprotein. The concentration is about  $\geq 5$  mg/ml gel. Using our "Affinity Purified Antibodies", we also provide customized services for immobilizing antibody by coupling them to Sepharose 4B™ agarose gel; we guarantee over 90% yield. Inquire for price quote, please contact us.

Item	Product	Catalog No.	Unit	Price	Remark
G01	Goat Anti-Human Apolipoprotein	11A-G1 Resin	1.0 ml		Ready to use. Antibody concentration: 5.5 mg/ml.
	Al-Sepharose 4B™ Gel	11A-G1 Resin	2.0 ml		
G02	Sheep Anti-Human Apolipoprotein	12A-S1 Resin	1.0 ml		Ready to use. Antibody concentration: 5 mg/ml.
	All-Sepharose 4B™ Gel	12A-S1 Resin	2.0 ml		
G03	Goat Anti-Human Apolipoprotein	33A-G1 Resin	1.0 ml		Ready to use. Antibody concentration: 5.2 mg/ml.
	CIII-Sepharose 4B™ Gel	33A-G1 Resin	2.0 ml		
G04	Goat Anti-Human Apolipoprotein	50A-G1 Resin	1.0 ml		Ready to use. Antibody concentration: 5 mg/ml.
	E-Sepharose 4B™ Gel	50A-G1 Resin	2.0 ml		
G05	Goat Anti-MDA Sepharose 4B™ Gel	MD20A-G1 Resin	1.0 ml		<b>Upon Inquiry.</b> Antibody concentration: $\geq 5$ mg/ml.
		MD20A-G1 Resin	2.0 ml		

## Affinity purification of lipoprotein particles using specific affinity agarose gel:

A gel matrix conjugated with specific antibodies, such as anti-Al, -CIII, or -E is used to recover specific lipoprotein particles from plasma. CNBr-activated Sepharose 4B from Pharmacia, Amersham Biosciences containing 4% agarose was chosen for immobilizing specific antibodies by coupling them to the matrix.

## Citation for Anti-ApoCIII or ApoE Sepharose Affinity Column Application:

\*Jeremy D Furtado, Hannia Campos, Anne E Sumner, Lawrence J Appel, Vincent J Carey, and Frank M Sacks. Dietary interventions that lower lipoproteins containing apolipoprotein C-III are more effective in whites than in blacks: results of the OmniHeart trial. *Am J Clin Nutr* 2010;92:714–22.

\*Carlos O. Mendivil; Chunyu Zheng; Jeremy Furtado; Julian Lel; Frank M. Sacks. Metabolism of Very-Low-Density Lipoprotein and Low-Density Lipoprotein Containing Apolipoprotein C-III and Not Other Small Apolipoproteins. *Arterioscler Thromb Vasc Biol.* 2010; 30:239-245.

\*Chunyu Zheng, ScD; Christina Khoo, PhD; Jeremy Furtado, ScD; Frank M. Sacks, MD. Apolipoprotein C-III and the Metabolic Basis for Hypertriglyceridemia and the Dense Low-Density Lipoprotein Phenotype. *Circulation.* 2010;121:1722-1734.

\* Frank M. Sacks, Lawrence L. Rudel, Adam Conner, Hassibullah Akeefe, Gerhard Kostner, Talal Baki, George Rothblat, Margarita de la Llera-Moya, Bela Asztalos, Timothy Perlman, Chunyu Zheng, Petar Alaupovic, Jo-Ann B. Maltais, and H. Bryan Brewer. Selective delipidation of plasma HDL enhances reverse cholesterol transport in vivo. *J. Lipid Res.* 2009. 50: 894–907.

\* Chunyu Zheng, Christina Khoo, Jeremy Furtado, Katsunori Ikewaki, and Frank M Sacks, Dietary monounsaturated fat activates metabolic pathways for triglyceride-rich lipoproteins that involve apolipoproteins E and C-III, *Am J Clin Nutr* 2008;88:272– 81.

\* Akio Kawakami, MD; Mizuko Osaka, BS; Mariko Tani, PhD; Hiroshi Azuma, PhD; Frank M. Sacks, MD; Kentaro Shimokado, MD; Masayuki Yoshida, MD Apolipoprotein CIII Links Hyperlipidemia With Vascular Endothelial Cell Dysfunction, *Circulation.* 2008;118:731-742.

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