



Cardiovascular Antibodies

Highly-specific, sensitive cardio
antibodies from a leading
US manufacturer

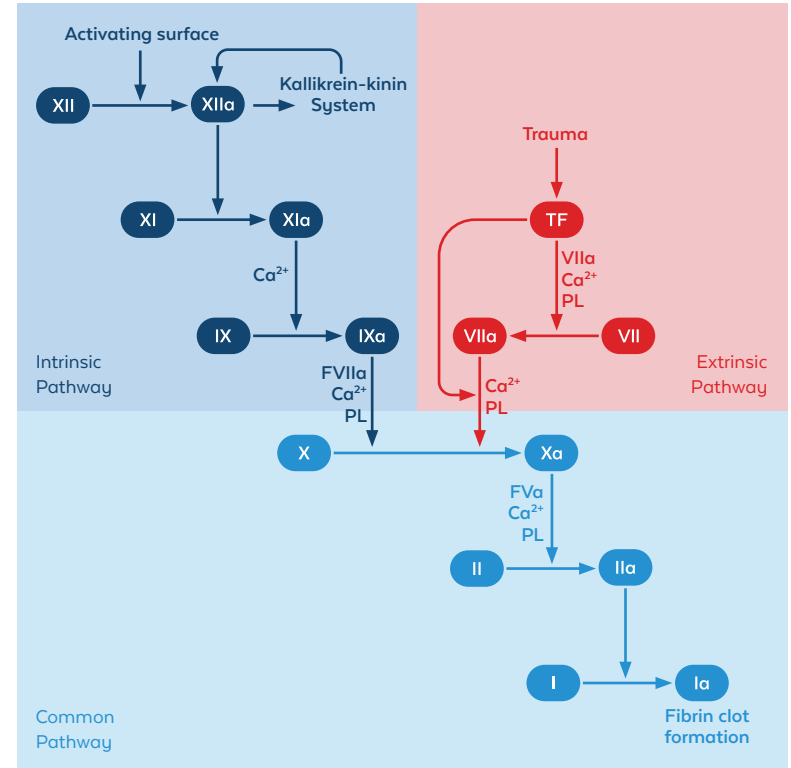
COAGULATION, INFLAMMATION, & CARDIOVASCULAR DISEASE

Blood coagulation is a multi-step process to stop hemorrhage as it occurs, e.g., after an injury. The coagulation cascade is tightly controlled by numerous coagulation factors and can be divided into the intrinsic, extrinsic, and common pathway (See figure on the right). The extrinsic or tissue factor pathway is initially triggered by exposure of the extravascularly expressed tissue factor (TF) to circulating factor VII after trauma. Whereas the intrinsic or contact activation pathway begins with the formation of the primary complex on endothelial collagen and the subsequent activation of factor XII by proteolytic cleavage, resulting in the two-chain factor XIIa. Lastly, the common pathway where fibrinogen (Factor I), a soluble glycoprotein from the liver, is converted to the insoluble fibrin by thrombin (Factor IIa).

An increasing amount of evidence supports the role of coagulation factors in inflammatory diseases. It was shown that factor XIIa contributes to inflammation through the activation of the kallikrein-kinin system, a metabolic cascade that is involved in many physiological processes including the control of arterial blood pressure. It is therefore not surprising that disturbances in this system are associated with arterial hypertension and myocardial ischemia. In-depth research on SARS-CoV-2 over the past three years has also been able to establish a link between COVID-19, inflammation, and the coagulation cascade. Research has shown that SARS-CoV-2 induces procoagulant factors and proinflammatory cytokines which can activate the coagulation cascade and lead to systematic thrombosis formation. Thus, thromboembolism prophylaxis and anticoagulation strategies play an important role in the treatment of severe COVID-19 cases and are among the standard measures for hospitalized patients.

With the rise of metabolic diseases in our society, the detection and treatment of cardiac disorders will grow in importance in the decades to come. Antibody-based tools will help to further advance research in this area and reveal new and more specific therapeutic strategies.

See 'Further Reading' on page 16 for more



Inflammation, Cytokines, & Growth Factors

Heart inflammation including endocarditis, myocarditis, and pericarditis can be caused by numerous factors, such as viral or bacterial infections, autoimmune diseases, or certain medications. Rockland offers individual antibodies and ELISA kits for selected biomarkers of heart inflammation, as well as some general inflammation and cytokine targets. For more infectious disease antibodies, find the full list at rockland.com.

■ = Sample size available * = Other antibodies available ** = Kits available

Product	Reactivity	Applications	Item No.
Caspase-1 Antibody*	Human	WB, IHC, IF, ELISA	600-401-AC5
CRP Antibody**	Human	WB, Dot Blot	209-1132
CX3CL1 Antibody**	Human, Mouse	WB, ELISA, IP	600-401-AR2
Fractalkine Antibody**	Human	WB	209-401-H49
IL-1 Beta Antibody**	Mouse	WB, IHC, IF	210-401-319
IL-17F Antibody	Human	WB	209-401-B31
IL-33 Antibody**	Human, Mouse	WB, IHC, ELISA	200-301-BX1
IL-33 EBI3 Antibody**	Mouse, Rat	WB	210-401-B66
IL-8 Antibody**	Human	WB, ELISA	109-401-311
LMP-1 (Epstein-Barr Virus) Antibody	Epstein-Barr Virus	IHC	MOB194-01
OspA Antibody	<i>Borrelia burgdorferi</i>	WB, ELISA	200-401-C13
OspC Antibody	<i>Borrelia burgdorferi</i>	WB, ELISA	200-401-C11
ST2 Antibody	Human, Mouse	WB, IHC, IF, ELISA	600-401-H20

Product	Reactivity	Applications	Item No.
TGF Beta Receptor 1 Antibody	Human, Mouse	WB, IHC, IF, ELISA, FC	600-401-MG6
TLR4 Antibody*	Human, Mouse, Rat	WB, IHC, IF, ELISA, FC, ChIP, Dot Blot, ISH, <i>In Vitro</i>	200-301-I25
TLR4 Antibody*	Human	WB, IHC, IF, ELISA	600-401-957
TNF Alpha Antibody**	Human	WB, IHC, IF	209-401-306
Troponin I (cardiac) Antibody	Mouse, Rat	WB	100-401-X31
Troponin I (cardiac) Phospho S150 Antibody	Mouse, Rat	WB	600-401-X33
Troponin I (cardiac) Phospho S23/24 Antibody	Mouse, Rat	WB	600-401-X32
Troponin I (cardiac) Phospho S43 Antibody	Mouse, Rat	WB	600-401-X34
TSLP Antibody*	Human	WB	209-401-H48

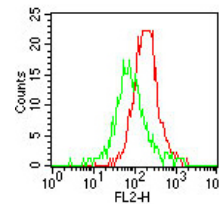


Fig 1. Flow cytometry of TLR4 Antibody in mouse peritoneal cells.

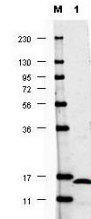


Fig 2. Western blot of IL-17F Antibody.

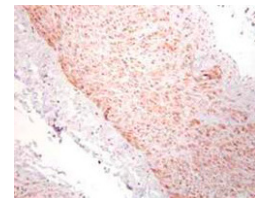


Fig 3. Immunohistochemistry of TNF Alpha Antibody in human artery tissue sections.

Clotting Pathway

As mentioned in the 'Coagulation Factors and Inflammation' section on page 1, blood coagulation is the process of forming a clot to stop hemorrhage as it occurs. Rockland and our partner, antibodies-online have joined efforts to offer antibodies and ELISA kits for research on the coagulation cascade.

■ = Sample size available * = Other antibodies available ** = Kits available

Product	Reactivity	Application	Item No.
Coagulation Factor II Antibody	Human, Mouse, Rat	WB, IHC, ELISA	ABIN3187675
Coagulation Factor IX Antibody	Human	IHC	ABIN2856927
Coagulation Factor VII Antibody	Human, Mouse	WB, IHC	ABIN2854983
Coagulation Factor X Antibody	Human	WB, IHC, IF	ABIN2856706
Coagulation Factor XI Antibody	Human	ELISA	ABIN1996321
Fibrin Beta-Chain Antibody	Human	BI, ELISA, <i>In Vivo</i>	ABIN7072406
Fibrinogen Antibody*	Human	WB, IHC	200-101-240
Human Tissue Factor - F3 ELISA Kit	Human	ELISA	KOA0564
Mouse Tissue Factor - F3 ELISA Kit	Mouse	ELISA	KOA0828
Plasminogen Antibody*	Human	WB, ELISA	100-101-208
PROC Antibody	Human	WB, IHC, ELISA	ABIN3187756
PROS1 Antibody	Human, Mouse, Rat	WB, IHC, IF, ELISA	ABIN6264441
Thrombin Heavy Chain Antibody	Human, Mouse, Rat	IHC, IF, ELISA	ABIN736298

Product	Reactivity	Application	Item No.
Tissue Factor Antibody	Human, Mouse, Rat, Pig	WB, IHC, IF, ELISA, FC	ABIN708086
VKORC1 Antibody	Human, Mouse	WB, IHC, IF, ELISA	600-401-FW9

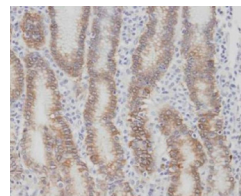


Fig 4. Immunohistochemistry of Coagulation Factor VII Antibody in human normal gastric epithelium.

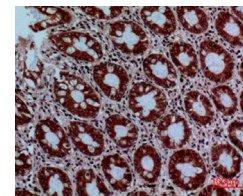


Fig 5. Immunohistochemistry of PROC Antibody in human colon.

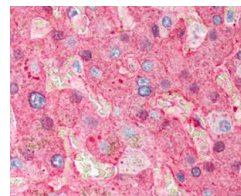


Fig 6. Immunohistochemistry of Fibrinogen Antibody in human liver tissue.

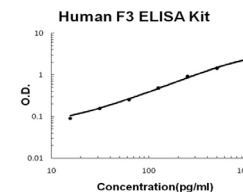


Fig 7. Standard curve of Human Tissue Factor - F3 ELISA Kit with <10pg/mL sensitivity.

Angiogenesis, Structure, & Hypertension

Angiogenesis is the development of new blood vessels and is regulated by various physiological stimulations. In addition to providing structural support, the extracellular matrix (ECM), which is composed of a variety of macromolecules including collagen, elastin, and various glycoproteins, is vital in the angiogenesis stimulus process (1,2) Blood vessels are essential to distribute blood, oxygen, and nutrients throughout your body via arteries, veins, and capillaries. When the pressure of blood against the arterial wall is higher than normal, this is referred to as hypertension, which can lead to heart disease, heart attack, or stroke. In this section, we list antibodies that relate to angiogenesis stimulators, ECM components, and hypertension biomarkers.

■ = Sample size available * = Other antibodies available ** = Kits available

Product	Reactivity	Applications	Item No.
ACE2 Antibody**	Human, Mouse, Rat	WB, IHC, IF, ELISA	600-401-X58
AGTR1 Antibody	Human, Mouse, Rat	WB, IHC, IF, ELISA	600-401-X81
AGTR2 Antibody	Human, Mouse, Rat	WB, IHC, IF, ELISA	600-401-X82
Angiopoietin 1 Antibody**	Human, Mouse	WB, IHC, IF, ELISA	100-401-403
Angiopoietin 2 Antibody**	Human, Mouse	WB, IHC	100-401-402
Beta 1 Adrenergic Receptor Antibody	Human	WB, ELISA, FC	600-401-MH1
Collagen Type I Antibody**	Human, Bovine	WB, IF, ELISA, FC, IP	600-401-103
Collagen Type II Antibody**	Human, Mouse, Bovine	IF	600-401-104
Collagen Type III Antibody**	Human, Bovine	IF, FC	600-401-105

Product	Reactivity	Applications	Item No.
Collagen Type IV Antibody**	Human, Bovine	WB, IF	600-401-106
Collagen Type V Antibody**	Human, Bovine	IF, ELISA	600-401-107
Collagen Type VI Antibody**	Human, Bovine	IF	600-401-108
CCL2 Antibody	Bovine	WB, ELISA	200-401-B60
Fibronectin Antibody **	Human	WB, IHC, ELISA	600-401-117
HDAC5 (internal) Antibody*	Human	WB, IHC, ELISA	600-401-J69
HDAC8 (C-terminus) Antibody	Human	WB, ELISA	600-401-J71
Human Serum Albumin Antibody	Human	WB, ELISA, Dot Blot, SDS-PAGE	600-401-033
Laminin Antibody**	Human	WB, ELISA	600-401-116
PCDH12 Antibody	Human, Mouse, Rat	WB, IHC, ELISA	600-401-DK0
RHAMM Antibody	Human, Mouse, Rat	WB, IHC, IF, ELISA	600-401-DY3
TGF Beta 1 Antibody	Human	IHC	600-401-432
VEGF-A Antibody	Bovine	WB, ELISA	200-401-B74

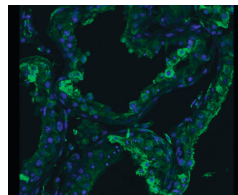


Fig 8. Immunofluorescence of ACE2 Antibody in human testis tissue.

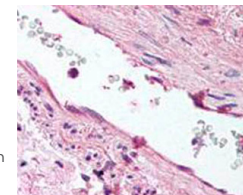


Fig 9. Immunohistochemistry of Angiopoietin 1 Antibody in human lung tissue.

Atherosclerosis

Atherosclerosis is an arterial disease characterized by artery hardening, typically due to plaque buildup, which can be caused by high blood pressure, high cholesterol, or high triglycerides. Recent research has also attributed more significance to the role inflammation (3,4) may play in the disease, as well as the importance of the microbiome and the influence of various environmental factors (5,6). Below are several antibodies to proteins involved in cholesterol homeostasis; HDL, LDL, and lipid biosynthesis and metabolism components; and selected inflammation markers. Additional inflammation markers can be found in the Inflammation, Cytokine & Growth Factors section on page 4.

■ = Sample size available * = Other antibodies available ** = Kits available

Product	Reactivity	Application	Item No.
5-Lipoxygenase Phospho S523 Antibody	Human, Rat	WB	600-401-D03
ABCA7 Antibody	Human	WB, IHC, IF, ELISA	600-401-X56
Alpha-1-Anti-Trypsin Antibody Biotin Conjugated*	Human	WB, ELISA	200-106-147
Apolipoprotein A-I Antibody**	Human, Mouse, Rat	WB, IF, ELISA	200-901-Y41
Apolipoprotein A-IV Antibody*	Human, Chicken	WB, ELISA	600-401-Y43
Apolipoprotein B Antibody	Human	WB, IHC, IF, ELISA, IP	600-101-111
Apolipoprotein C-II Antibody	Human	IHC	600-101-113
Apolipoprotein C-III Antibody	Human	WB, IHC, IP	600-101-114
Apolipoprotein E Antibody**	Human, Rat	WB	600-101-197
Apolipoprotein J Antibody	Human	WB	600-101-198

Product	Reactivity	Application	Item No.
Glycerol-3-Phosphate Dehydrogenase Antibody Biotin Conjugated*	Rabbit	ELISA	200-106-210
IL-6 Antibody**	Human	WB, ELISA, FC	209-301-310
LAMTOR1 Antibody	Human, Mouse, Rat	WB, IHC, IF, ELISA	600-401-CH3
LDL-R Antibody	Human, Mouse, Rat	WB, IHC, IF, ELISA	200-901-CJ1
MCP-1 Antibody**	Human	WB	209-401-B60
NPC1 Antibody	Human	WB, IHC, IF, ELISA	600-401-DE4
PTCHD2 Antibody*	Human, Mouse, Rat	WB, IHC, IF, ELISA	600-401-DU3
SCARB1 Antibody	Human, Mouse, Rat	WB, IHC, IF, ELISA	600-401-EE0

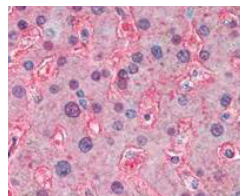


Fig 10. Immunohistochemistry of Apolipoprotein A-I Antibody in human liver tissue.

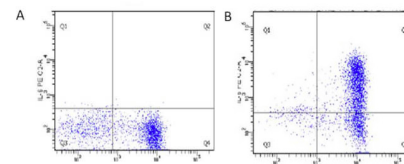


Fig 11. Flow cytometry of IL-6 Antibody in human PBMC.

Cardiac Function

The below list consists of targets associated with general cardiac function including regulation of cardiac muscle contraction and Ca²⁺ fluxes. Additional targets for various cardiovascular diseases such as myocardial ischemia, myocardial infarction, heart failure, and cardiomyopathy are also included.

■ = Sample size available * = Other antibodies available ** = Kits available

Product Name	Reactivity	Application	Item No.
ASAH2 Antibody	Human, Mouse, Rat	WB, ELISA	600-401-Y66
B-raf Antibody*	Human, Mouse	WB, IHC, IF, ELISA	600-401-Z87
Calmodulin Antibody	Rat, Chicken	WB	200-301-P25
Calponin Antibody*	Human, Chicken, Turkey	WB, IHC	200-301-P26
Calreticulin Precursor Antibody	Human	WB, ELISA	600-401-J41
CAV1.2 Antibody	Human, Mouse, Rat	WB, IHC, IF, IP, Microarray	200-301-F08
CCL2 Antibody	Bovine	WB, ELISA	200-401-B60
Connexin 43 Antibody*	Human, Mouse, Rat	WB, IHC, IF, ELISA	600-401-MJ2
Desmoplakin Phospho S2849 Antibody	Human	WB, ELISA	600-401-J65
eEF1A2 Phospho S358 Antibody*	Mouse	WB	600-401-X05
HDAC2 Phospho S394 Antibody*	Mouse, Rat	WB	600-401-X11
Hemoglobin A (beta chain) Antibody	Human	WB, ELISA, Biochemical Assay	200-301-GS4

Product Name	Reactivity	Application	Item No.
Hemoglobin Beta A-2 Antibody	Human	WB, ELISA	200-301-GS8
Hemoglobin Beta C Antibody	Human	WB, ELISA	200-301-GS7
Hemoglobin Beta F Antibody	Human	WB, ELISA	200-301-GS6
Hemoglobin Beta S Antibody	Human	WB, ELISA, Biochemical Assay	200-301-GS5
NOX2 Antibody*	Human, Mouse, Rat	WB, IHC	600-401-R16
PI3K type III Antibody	Human	WB, ELISA	600-401-J90
PI4K Beta Antibody	Human	WB, IHC, ELISA	600-401-J92
PI4KII Alpha Antibody	Human	WB, ELISA	600-401-J93
Potassium Channel, Voltage Gated, Kv2.2 Antibody	Rat	WB, IHC	612-401-E13
PPAR Gamma Phospho pS273 Antibody	Human	Dot Blot, ELISA	600-401-J94
Xin Actin-binding Repeat-containing Protein 1 Phospho S295 (XIRP1)*	Mouse	WB	600-401-X37

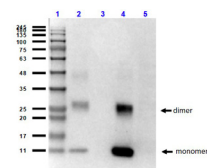


Fig 12. Western blot of Hemaglobin A (beta chain) Antibody in human HeLa whole cell lysate.

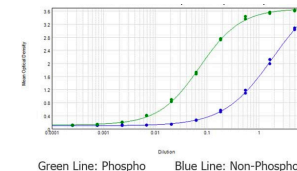





Fig 13. ELISA results of purified PPAR Gamma Phospho pS273 Antibody.

Blood Products

Blood is an important component of the cardiovascular system. It is composed of platelets, plasma, Red Blood Cells (RBCs), and White Blood Cells (WBCs). In addition to nutrients, oxygenated blood is pumped from the heart throughout the body via arteries and deoxygenated blood is returned to the heart via veins. Both blood and serum (a clear portion of blood devoid of blood cells and platelets) play a pivotal role in the testing of biomarkers for cardiovascular diseases. Below we show select cardiovascular biomarkers, our new proprietary-developed ghost red blood cells, as well as animal blood products produced by Rockland. Additional host species are available for a variety of RBCs and serums. For a complete list, visit rockand.com.

 = Sample size available  = Other antibodies available  = Kits available

Product Name	Reactivity	Application	Item No.
Ghost Red Blood Cells (Goat)	-	-	R704-005
Ghost Red Blood Cells (Bovine)	-	-	R700-005
Human Corin ELISA Kit	Human	ELISA	KOA0759
Human Red Blood Cells 10% Washed Pooled Cells	-	-	R407-0100
Human Red Blood Cell Antibody	Human	IHC, Agglutination	209-4139
Human Serum (lyophilized)	-	WB	D314-05
Rabbit Red Blood Cells 10% Washed Pooled Cells	-	FC	R403-0100
Mouse Red Blood Cell Antibody	Mouse	Agglutination	210-4139
Mouse Serum (sterile) (heat activated)	-	WB	D108-10-0500

Product Name	Reactivity	Application	Item No.
Myeloperoxidase Antibody ⁺	Human	WB	200-4181
Procalcitonin (6C12.A12.H4.A3.F9) Antibody ⁺	Human	WB, ELISA	200-301-143
Sterile Human Serum	-	WB	D119-00-0500
Transferrin Antibody	Human	ELISA	600-401-034

Companion Products

Product Name	Reactivity	Application	Item No.
Beta Galactosidase	-	WB	0000-17
Blocking Buffer for Fluorescent Western Blotting	-	WB	MB-070
Blotto Immunoanalytical Grade (non-fat dry milk)	-	WB	B501-0500
Collagenase Type 1	-	WB	MB-122-0050
Collagenase Type 2	-	WB	MB-123-0050
Collagenase Type 3	-	WB	MB-124-0050
Collagenase Type 4	-	WB	MB-125-0050
Collagenase/Elactase	-	WB	MB-126-0001
Goat IgG (H&L) Antibody Peroxidase Conjugated	Goat	ELISA	605-4302
Human Albumin	-	SDS-PAGE	009-0133
Human IgG (H&L) Antibody Dylight™ 488 Conjugated	Human	Dot Blot	609-141-002

Product Name	Reactivity	Application	Item No.
Human IgG (H&L) Antibody Dylight™ 549 Conjugated	Human	WB	609-142-002
Human IgG (H&L) Antibody Peroxidase Conjugated*	Human	ELISA, Dot Blot	609-1302
Human IgG F(c) Antibody Pre-Adsorbed	Human	ELISA, Dot Blot	609-101-017
Mouse Heart, Adult, Whole Cell Lysate	-	WB	W10-000-T014
Mouse IgG (H&L) Antibody Dylight™ 488 Conjugated	Mouse	Dot Blot	610-141-002
Mouse IgG (H&L) Antibody Dylight™ 549 Conjugated	Mouse	WB, Dot Blot	610-142-002
Mouse IgG (H&L) Antibody Peroxidase Conjugated	Mouse	WB, ELISA	610-1302
Rabbit IgG (H&L) Antibody Dylight™ 488 Conjugated	Rabbit	Dot Blot	611-141-002
Rabbit IgG (H&L) Antibody Dylight™ 549 Conjugated	Rabbit	Dot Blot	611-142-002
Rabbit IgG (H&L) Antibody Peroxidase Conjugated	Rabbit	WB, ELISA	611-1302
Rat Heart, Adult, Whole Cell Lysate	-	WB	W12-000-T087



Further Reading




















1. Foley, J. H., & Conway, E. M. (2016). Cross Talk Pathways Between Coagulation and Inflammation. *Circulation Research* 118(9), 1392-1408. <https://doi.org/10.1161/CIRCRESAHA.116.306853>
2. Nickel, K. F., Long, A. T., Fuchs, T. A., Butler, L. M., & Renné, T. (2017). Factor XII as a Therapeutic Target in Thromboembolic and Inflammatory Diseases. *Arteriosclerosis, Thrombosis, and Vascular Biology* 37(1), 13-20. <https://doi.org/10.1161/ATVBAHA.116.308595>
3. Lamers, M. M., & Haagmans, B. L. (2022). SARS-CoV-2 pathogenesis. *Nat Rev Microbiol* 20(5), 270-284. <https://doi.org/10.1038/s41579-022-00713-0>

References

1. Neve, A., Cantatore, F.P., Maruotti, N., Corrado, A., & Ribatti, D. (2014). Extracellular matrix modulates angiogenesis in physiological and pathological conditions. *BioMed Research International*, 756078. <https://doi.org/10.1155/2014/756078>
2. Hosseinabadi, M., Abdolmaleki, Z. & Beheshtiha, S.H.S. (2021). Cardiac aorta-derived extracellular matrix scaffold enhances critical mediators of angiogenesis in isoproterenol-induced myocardial infarction mice. *J Mater Sci: Mater Med* 32, 134. <https://doi.org/10.1007/s10856-021-06611-w>
3. Libby P. (2012). Inflammation in Atherosclerosis—No Longer a Theory. *Clinical Chemistry*, Volume 67, Issue 1, Pages 131-142, <https://doi.org/10.1093/clinchem/hvaa275>
4. Björkegren, J.L.M., Lusi, A.J. (2022). Atherosclerosis: Recent developments, *Cell*, Volume 185, Issue 10, Pages 1630-1645, ISSN 0092-8674, <https://doi.org/10.1016/j.cell.2022.04.004>
5. Chen, P.B., Black, A.S., Sobel, A.L. et al. (2020). Directed remodeling of the mouse gut microbiome inhibits the development of atherosclerosis. *Nat Biotechnol* 38, 1288-1297. <https://doi.org/10.1038/s41587-020-0549-5>
6. Ji, L., Chen, S., Gu, G., Zhou, J., Wang, W., Ren, J., Wu, J., Yang, D., & Zheng, Y. (2021). Exploration of Crucial Mediators for Carotid Atherosclerosis Pathogenesis Through Integration of Microbiome, Metabolome, and Transcriptome. *Front Physiol*, 645212. <https://doi.org/10.3389/fphys.2021.645212>

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+1 484.791.3823
P.O. Box 5199
Limerick, PA 19468, USA
sales@rockland.com
rockland.com
M22-0001-A

