



Cardiac & Metabolic Markers

Reagents for Assay Development

ISO Certified 13485:2016

meridian BIOSCIENCE®
LIFE DISCOVERED. LIFE DIAGNOSED.

www.MeridianLifeScience.com



Company Overview



Extensive Capabilities & Services

Molecular Reagents

qPCR | RT-qPCR | LAMP

ENZYMES

- Hot-Start Taq technologies - chemical, antibody, aptamer
- Lyo & Air-Dryable enzymes (glycerol free) Taq, Bst, RTase
- Thermostable MMLV RT

MASTER MIXES

- Lyo & Air-Dryable formats
- Inhibitor-tolerant mixes for stool, sputum, saliva, blood, plant, water.
- For multiplexing, GC-rich templates

NUCLEOTIDES

- dNTPs, Na or Li salts
- Ultra high purity, >99%

Immuno Reagents

Antigens | Antibodies | Blockers

VIRUS MANUFACTURING

- Live or inactivated
- Proprietary Ag purification

RECOMBINANT PROTEINS

- *E. coli*, *P. pastoris*, *S. cerevisiae*, Sf9, Mammalian (CHO, HEK293)
- 10L- 130L fermentation

ANTIBODIES - MAbs/PABs

- 500+ MAbs produced in grams
- Multi-Kilograms of MIgG / year
- Hundreds of liters of GxhIgG
- Ascites production (55,000 Mice)





Commercial scale manufacturing of antigens and antibodies with protein purification expertise.

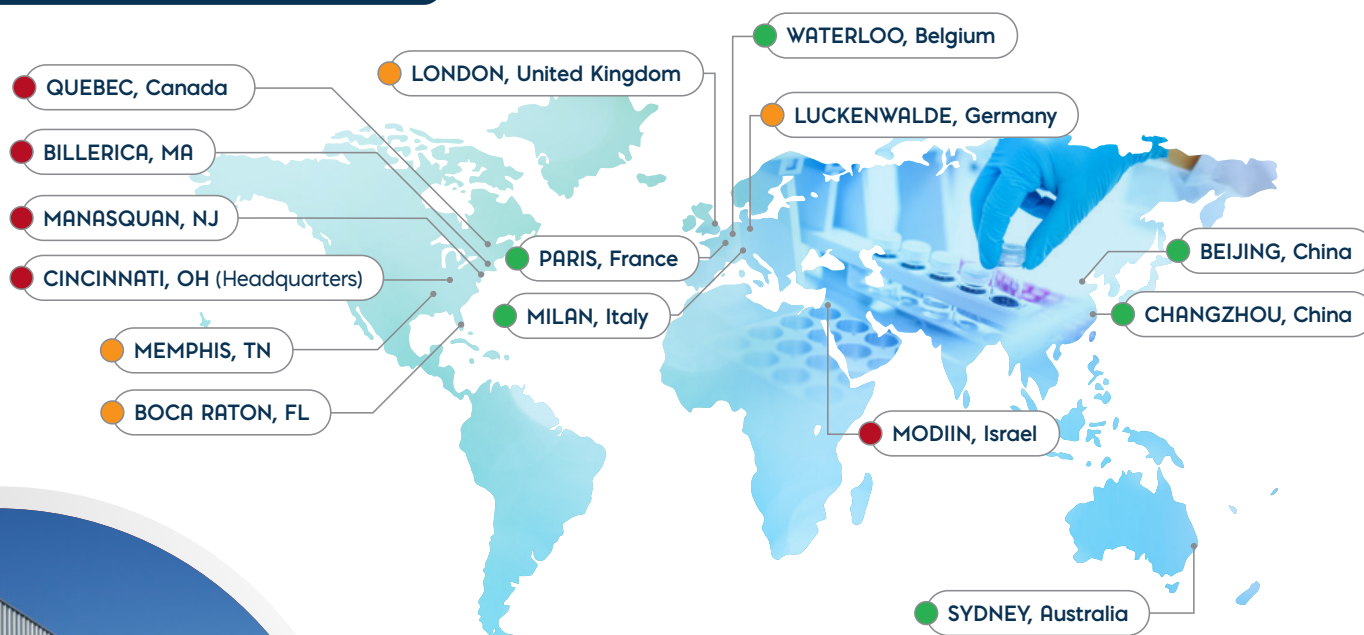
Meridian has been providing innovative life science solutions and building trusted partnerships for over 43 years. Meridian's focus is to offer complete solutions for the development of molecular and immunological assays.

- Full line of immunoassay reagents, including antigens, antibodies and blockers
- Large scale production of reagents for molecular assays
- Technical support with assay development experience
- Dedicated R&D and manufacturing teams
- Robust and mature Quality System



ISO Certified 13485:2016

Global presence



● Diagnostic Manufacturing | ● Life Science Manufacturing | ● Sales & Warehouse

MERIDIAN BIOSCIENCE, INC.

Parent Company | Founded in 1977 | Nasdaq: VIVO | 750+ Employees
Headquartered in Cincinnati, OH | Presence in 70+ Countries.



Company Overview

Antigens & Antibodies

INFECTIOUS DISEASE EXPERTISE



Tropical

- Zika
- Dengue 1, 2, 3, 4
- Chikungunya
- Malaria
- Chagas
- Leishmaniasis
- Leptospirosis
- Newcastle Disease
- Yellow Fever
- Nipah Virus
- JEV



ToRCH & Childhood

- Toxo
- Rubella
- CMV
- HSV-1,2
- Rubeola
- EBV
- Mumps
- Coxsackie
- Rotavirus
- RSV
- Parvo B19
- VZV



Viral Hepatitis

- HAV
- HBV
- HCV
- HDV
- HEV



STD

- HSV-1, 2
- HIV-1, 2
- HPV
- Syphilis
- Chlamydia
- Neisseria



Gastro

- *H. Pylori*
- *C. Difficile*
- Norovirus
- Adenovirus
- Rotavirus
- Cryptosporidium
- Campylobacter
- *E. Coli*
- Salmonella
- *G. Lambia*
- Astrovirus



Respiratory

- SARS-CoV-2
- *M. Pneumoniae*
- *C. Pneumoniae*
- Influenza A, B
- Parainfluenza
- *L. Pneumophila*
- RSV
- *M. Tuberculosis*
- Streptococcus
- Staphylococcus
- Adenovirus





Cardiac

- Troponin I, T
- Myoglobin
- BNP
- NT-proBNP
- CRP
- PCT
- CK-MB
- D-Dimer
- Cystatin-C
- Galectin-3
- Vitamin D
- Apo A, B, E
- NSE
- FABP
- SAH
- MPO
- Fibrinogen
- EGF
- Lp-PLA2
- PAPP-A



Hormones

- LH, FSH, hCG,
- hGH, AMH
- Cortisol
- Estradiol
- Insulin, C-peptide
- Prolactin
- Progesterone
- PTH
- PAPP-A
- TSH, T3, T4, ACTH
- Thyroglobulin



Allergens

- Cat & Dog Allergen
- Horse Allergen
- Dust Mite
- *Alternaria alternata*
- Timothy Grass
- *Platanus acerifolia*
- Mugwort



Cancer

- CA125
- CA15-3
- CA19-9
- CA72-4
- CA50
- CA242
- Cyfra 21-1
- CEA
- Thyroglobulin
- erbB-2/HER2
- AFP
- EGFR
- HE4
- NSE
- PMA
- PAP
- PSA
- PSMA
- S-100
- PIVKA II
- B2M



Autoimmune

- Jo-1
- PCNA
- pANCA
- cANCA
- Sm Ag
- dsDNA
- La(SSA)
- Ro(SSA)
- Histone
- GMB
- C1q
- Scl-70
- SS-A
- BS-Gly-1
- Cathepsin G
- Calprotectin



Veterinary

- ASFV
- Avian Influenza
- Borrelia
- *Brucella abortus*
- Canine Distemper
- Feline Immunodeficiency
- Feline Leukemia
- Foot-and-Mouth
- Canine Heartworm
- Infectious Bursal Disease
- Marek Disease
- Newcastle Disease
- Canine Parvovirus
- Rabies Virus
- Serum Amyloid A (SAA)
- *Trichomonas foetus*
- Nipah
- Transmissible Gastroenteritis



Microbial Detection

- Legionella
- Salmonella
- Cryptosporidium
- *G. Lambia*
- *C. Jejuni*
- *E. Coli*
- *B. Anthracis*
- Clostridium
- Listeria
- Streptococcus
- Staphylococcus



Drug of Abuse

- Amphetamine
- Barbitol
- Benzodiazepine
- Buprenorphine
- Cocaine
- Cotinine
- EDDP
- Fentanyl
- Ketamine
- K2
- MDMA (Ecstasy)
- Methadone
- Methamphetamine
- Morphine
- Norketamine
- Opium
- Oxycodone
- PCP
- Phenobarbital
- Propoxyphene
- THC



Immunoglobulins/Blockers

- TRU Block™ & IgM Diluent
- Animal IgGs – Bovine, Chicken, Goat, Mouse, Rabbit, Sheep
- Human IgA, IgG, IgM, IgE
- Kappa Light chain
- Lambda Light chain
- Goat Anti-Human IgG, IgM, IgA
- Goat Anti-Mouse IgG

Cardiac & Metabolic Diagnostics

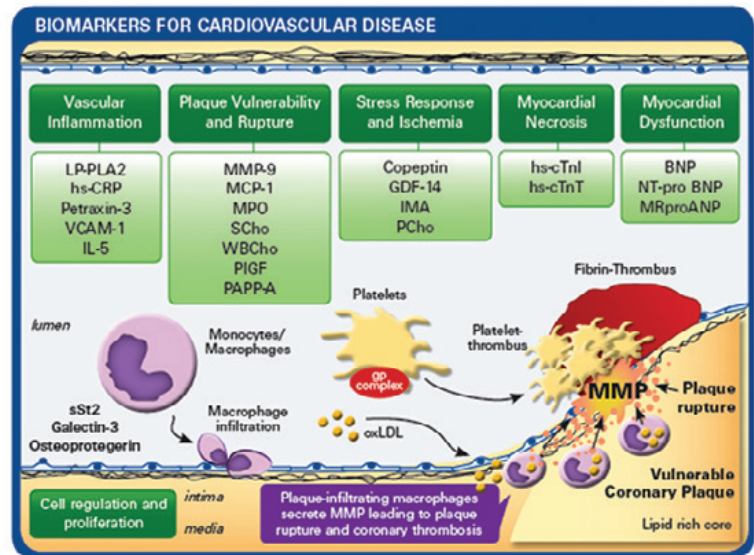
Cardiovascular and metabolic diseases are the leading cause of death globally. An aggressive approach to their diagnosis and treatment can substantially reduce the risk of mortality and life-threatening complications.

Cardiovascular disease (CVD) is a major health problem across the world, accounting for a third of all deaths worldwide. It is often grouped with metabolic disorders because it is frequently a consequence of diabetes and dyslipidemia. However the group of disorders specifically related to CVD include coronary heart disease, cerebrovascular disease, and peripheral arterial disease.

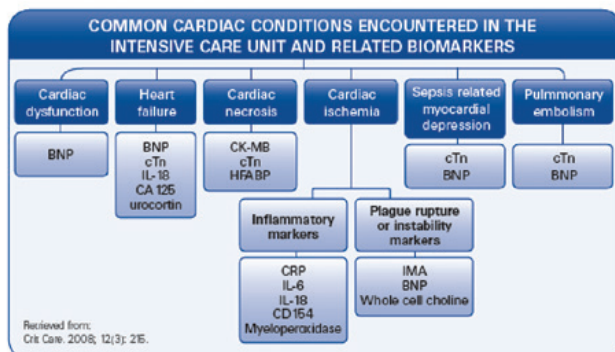
Cardiac biomarker assays have proven to be particularly useful in providing a rapid diagnosis and assessing risk in people with acute coronary syndrome (ACS). Cardiac markers are proteins, hormones, enzymes or other substances expressed by myocardial cells and they are released into the circulating blood upon cell necrosis. Several biomarkers that have become routinely used in the clinic include creatine kinase (CK), creatine kinase-MB (CK-MB), myoglobin, cardiac troponin T (cTnT), and cardiac troponin I (cTnI).

To date, the troponins have proven to be the most sensitive and specific indicators of cardiac injury. Other useful biomarkers include NT-proBNP which can help predict an increased risk of recurrent events after a heart arrhythmia. New potential cardiac biomarkers are continually being researched, and advances in functional genomics, proteomics, metabolomics, and bioinformatics have revolutionized the discovery process. In general, using more than one biomarker increases the early predictive value compared to using on a single marker and technological advances will increase the use of multi-marker profiling to improve and possibly individualize treatment of CVD in the future.

Metabolic diseases include disorders that disrupt normal metabolism such as diabetes and dyslipidemia (abnormal lipid metabolism). These diseases can be brought on by primary (genetic) factors or secondary factors related to lifestyle, environment, or medication. Metabolic syndrome is a specific collection of conditions that can increase the risk of diabetes, stroke and heart disease and it affects 25% of the adult world population. In the past few years, several expert groups have attempted to set forth simple diagnostic criteria to be used in clinical practice to identify patients with metabolic syndrome. These risk factors include elevated waist circumference, elevated triglycerides, reduced high-density lipoprotein cholesterol, elevated blood pressure and elevated fasting glucose. The magnitude of the increased risk can vary according to which components of the syndrome are present plus the other, non-metabolic syndrome risk factors in a particular person.



Retrieved 2013: www.cardiac-biomarkers.com



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Leading Cardiac Markers

Antibodies & Matched Pairs

Brain Natriuretic Peptide (BNP), ProBNP + NT-ProBNP

- H86451M** MAb to NT-proBNP a.a. 61-76 (*Capture*), ELISA & WB
- H86912M** MAb to NT-proBNP a.a. 1-12 (*Detection*), ELISA & WB
- * Recognizes BNP, proBNP and NT-proBNP.
- K4A660R** PAb to BNP (Rabbit) ELISA, RIA, & IHC, lyophilized
- H01420M** MAb to NT-proBNP a.a. 61-76 (*Capture*), ELISA & WB
- H01419M** MAb to NT-proBNP a.a. 15-20 (*Detection*), ELISA & WB
- H01423M** MAb to NT-proBNP a.a. 15-20 (*Alternate Detection*), ELISA & WB
- * Detects NT-proBNP and proBNP.
- H01422M** MAb to NT-proBNP a.a. 5-12 (*Capture*), ELISA & WB
- H01424M** MAb to NT-proBNP a.a. 22-36 (*Detection*), ELISA & WB
- * Detects NT-proBNP regardless of glycosylation.

C-Reactive Protein (CRP)

- M86005M** MAb (*Capture*), ELISA
- M01239M** MAb (*Detection*), ELISA
- * Recognizes antigen in the presence and in the absence of Ca²⁺.

Creatine Kinase (CK)

- MAC01-288** MAb to CK-BB, ELISA
- H31795M** MAb to CK-MB (*Capture/Detection*), ELISA & LF
- K31315G** PAb (Goat) to CK-MM (*Capture/Detection*), ELISA & LF
- * Abs can be used as capture or detection in a sandwich assay.
- MAC02-186** MAb to CK-MM, ELISA
- * 50% cross reactivity with CK-MB and < 1% cross reactivity with CK-BB.
- MAC02-512** MAb to CK-MM, ELISA
- * 52% cross reactivity with CK-MB, and no cross reactivity with CK-BB.

Cystatin C

- H86023M** MAb (*Capture*), ELISA
- H86218M** MAb (*Detection*), ELISA
- H86013M** MAb (*Alternate Detection*)

D-dimer

- N01273M** MAb (*Capture*), ELISA & WB
- N01274M** MAb (*Detection*), ELISA & WB
- N01270M** MAb (*Capture*), ELISA, LF & WB
- N01269H** MAb (*Detection*), ELISA, LF & WB
- * Highly specific for D-dimer and other cross linked fibrin degradation products containing D-dimer, but no reactivity with Fragment D or E. No cross-reaction was found with purified intact fibrinogen or fibrinogen degradation products.
- N86304M** MAb (*Capture*), ELISA & WB
- N86352M** MAb (*Detection*), ELISA & WB
- * Reacts with high molecular weight fibrin degradation products. Does not cross react with fibrinogen or D-monomer.

Fatty Acid Binding Protein (FABP)

- H01324M** MAb (*Capture*), ELISA & LF
- H01323M** MAb (*Detection*), ELISA & LF

Fibrinogen

- N86413M** MAb, ELISA & WB

Galectin-3

- K01381M** MAb, ELISA
- * Reacts with human and mouse Galectin-3.

Glycogen Phosphorylase Isoenzyme BB (GPBB)

- H86807M** MAb, ELISA & WB

Lipoprotein-Associated Phospholipase A2 (Lp-PLA2)

- H01390M** MAb (*Capture*), ELISA
- H01393M** MAb (*Detection*), ELISA
- H01389M** MAb (*Alternate Detection*), ELISA
- H01392M** MAb (*Capture*), ELISA
- H01393M** MAb (*Detection*), ELISA

Myeloperoxidase (MPO)

- H87207M** MAb, ELISA & IHC
- * Recognizes both native and recombinant human MPO.

Myoglobin (MYO)

- H01328M** MAb (*Capture*), ELISA & LF
- H01327M** MAb (*Detection*), ELISA & LF



Procalcitonin (PCT)

- E86561M** MAb (*Capture*), ELISA & WB
E86420M MAb (*Detection*), ELISA & WB
 * Specific to procalcitonin and calcitonin.
E86412M MAb (*Capture*), ELISA
E86813M MAb (*Detection*), ELISA
 * Specific for procalcitonin and calcitonin.

Pregnancy Associated Plasma Protein A (PAPP-A)

- E86141M** MAb (*Capture*), ELISA & WB
E86910M MAb (*Detection*), ELISA & WB
 * Detects both heterotetrameric (found in placental blood) and homodimeric (found in atherosclerotic plaques) PAPP-A.
E86114M MAb, ELISA & WB

S-Adenosyl-Homocysteine (SAH)

- K01395C** PAb (Chicken), ELISA
 * Affinity purified, treated with Adenine-9-D-Ribofuranoside to remove cross reaction to Adenosine.

Soluble CD40 Ligand (sCD40L)

- P86106M** MAb, ELISA
P42374M MAb, FC & IFA

Troponin I-Cardiac (cTnI)

- H86285M** MAb to a.a. 86-90 (*Capture*), ELISA & WB
H01347M MAb to a.a. 24-40 (*Detection*), ELISA & WB
 * Reacts equally with free cTnI and complexed cTnI, does not cross react with sTn.
H01340M MAb to a.a. 41-49, ELISA
H86241M MAb to a.a. 87-91, ELISA & WB
H86596M MAb to a.a. 169-178, ELISA & WB
K31015M MAb (*Capture*), ELISA
K31341G PAb to a.a. 27-39 (*Goat, Detection*), ELISA, WB & IHC
K31342G PAb to a.a. 69-86 (*Goat, Alternate Detection*), ELISA & IHC
 * Cross reactivity with sTn is < 0.1% (ELISA).

Troponin T-Cardiac (cTnT)

- H86429M** MAb to a.a. 60-70 (*Capture*), ELISA & WB
H86111M MAb to a.a. 95-181 (*Detection*), ELISA & WB
 * Does not cross react with sTn.

Vitamin D

- K01214M** MAb to Vitamin D (25 OH), ELISA, LF, CLIA & ELISA
 * Pairs with antigens A01697B & A01698B.
K01213M MAb to Vitamin D (25 OH), ELISA & RIA
 * Pairs with antigens A01697B & A01698B.
K24124M-LQ MAb to 25-OH Vitamin D3, ELISA
K24124M MAb to 25-OH Vitamin D3, ELISA
K24123M MAb to 1,25 (OH)² Vitamin D3, ELISA
 * Recognizes Native Human 25 OH Vitamin D2 and 25 OH Vitamin D3.

Leading Cardiac Markers

Human Antigens (for use as standards, controls & calibrators)

Brain Natriuretic Peptide (BNP), ProBNP + NT-ProBNP

- A24760H** ProBNP, recombinant protein (*E. coli*) of N-terminal (a.a. 1-76, MW 8.39 kDa)
- A01261H** NT-proBNP, recombinant protein (*E. coli*) of N-terminal (MW 8.589 kDa). Contains an additional methionine residue at the N-terminus (in comparison with native NT-proBNP)
- N86583H** BNP and NT-proBNP Free Plasma, from normal human plasma, used for preparation of any proBNP-related standards and calibrators
- A97201H** From human fluids and reactive with monospecific goat anti-CRP, $\geq 95\%$ pure (SDS-PAGE)

Creatine Kinase (CK)

- VTI830** CK-BB, produced in cell culture (yeast), represents native full length protein and is enzymatically active
- VTI840** CK-MB Isoenzyme Type I, produced in cell culture (yeast), enzymatically active
- VTI810** CK-MB Isoenzyme Type II, produced in cell culture (yeast), represents native full length protein and is enzymatically active
- VTI850** CK-MM Isoenzyme Type I, produced in cell culture (yeast), represents full length protein without the C-terminal lysine on both subunits and is enzymatically active
- VTI820** CK-MM Isoenzyme Type III, produced in cell culture (yeast), represents full length protein and is enzymatically active

D-Dimer

- A01408H** From human plasma, $> 90\%$ pure
- A01463H** From human plasma, $> 95\%$ pure (SDS-PAGE)

Fatty Acid Binding Protein (FABP)

- A86865H** From human heart, $> 95\%$ pure (SDS-PAGE)

Lp-PLA2

- A01413H** Recombinant (*E. coli*), $> 95\%$ pure (SDS-PAGE)

Myeloperoxidase (MPO)

- A38104H** From human neutrophils, $> 96\%$ pure (SDS-PAGE), approximate activity of 1,100 Units/mg Protein

Myoglobin

- A38131H** From human heart, $\geq 99\%$ pure (SDS-PAGE)

Pregnancy Associated Plasma Protein A (PAPP-A)

- A86864H** From human retroplacental blood. Heterotetrameric complex consisting of PAPP-A and pro-MBP subunits, $> 85\%$ pure (SDS-PAGE), lyophilized

Procalcitonin (PCT)

- A01367H** Recombinant protein (*E. coli*) representing a.a. 3-116 which corresponds to the unprocessed human protein, contains a 6-His tag at N-terminal

Troponin (cTnT & cTnI)

- A86813H** cTnT, from human heart, $> 98\%$ pure (SDS-PAGE)
- A38150H** cTnI, from human heart, $> 98\%$ pure (SDS-PAGE), single band ~ 24 kDa

Vitamin D

- A01694D** 25-OH Vitamin D3 BSA Conjugate, $\geq 99\%$ Pure (HPLC)
- A01698B** Vitamin D Biotin Conjugate, $> 95.7\%$ Pure (HPLC)
- A01697B** Vitamin D BSA Conjugate
- A50674H** Vitamin D Binding Protein (Gc-Globulin), $> 95\%$ Pure (SDS-PAGE)
- A01409H** 1,25 Dihydroxy Vitamin D3, $> 99\%$ Pure (HPLC)

Product list

Abbreviations

- 6-His** – Polyhistidine-tag
Aff.Pur. – Affinity Purified, analyte-specific column
Alk.Phos. – Alkaline Phosphatase conjugated product
C. Eggs – Chicken Eggs
CLIA – Chemiluminescence Immunoassay
CVD – Cardiovascular Disease
DB – Dot Blot
DFA – Direct Immunofluorescence Assay
FC – Flow Cytometry
FITC – Fluorescein conjugated product
GST – Glutathione S-transferase
HRP – Horseradish peroxidase conjugated product
IB – Immunoblot
ICC – Immunocytochemistry
IEP – Immunoelectrophoresis
IFA – Immunofluorescence Assay
IgG – Immunoglobulin G
IgM – Immunoglobulin M
IHC – Immunohistochemistry
IP – Immunoprecipitation
LF – Lateral Flow
Lysate – Cells which have been lysed
MAB – Monoclonal antibody
Monospecific – Single band when tested by immunoelectrophoresis
Neat – Whole, unpurified, undiluted antisera
Neph – Product has been quality controlled by Nephelometry
PAb – Polyclonal antibody
Purified/IgG – Refer to the Certificate of Analysis regarding the extent of purification and the purification process used.
RIA – Radioimmunoassay
RID – Radial Immunodiffusion
SDS-PAGE – Sodium Dodecyl Sulfate Polyacrylamide Gel Electrophoresis
TIA – Product has been quality controlled by Turbidimetry
WB – Western blot

Adiponectin

A protein hormone that modulates a number of metabolic processes including glucose regulation and fatty acid oxidation. Low levels of adiponectin are associated with the increased prevalence of obesity-linked cardiovascular disease, including ischemic heart disease and peripheral arterial disease.

Antibody Pairs

- Suitable for use in ELISA
- MAbs produced *in vivo*

CAPTURE	DETECTION	
H01263M	H01262M	* Detects total Adiponectin
H01286M	H01285M	* Detects total Adiponectin
H01296M	H01297M	* Detects total Adiponectin
H01297M	H01296M	* Detects total Adiponectin

Antigens

- | | |
|---------|---|
| A01260H | <ul style="list-style-type: none">• Native antigen from pooled human plasma• Affinity purified, > 95% pure (SDS-PAGE) |
|---------|---|

Albumin

Hypoalbuminemia is a medical condition in which blood levels of albumin are abnormally low. It is a common condition in patients with heart failure and becomes more prevalent with increasing age and illness. It can be used as an independent predictor of incident heart failure in end-stage renal disease and elderly patients.

Monoclonals

- Recognizes human serum albumin in ELISA
- Produced *in vivo*

H86424M

Antibody Pairs

- Suitable for use in ELISA, WB and the quantitative detection of human serum albumin in serum and urine
- Does not react with bovine serum albumin or egg white albumin
- MAbs produced *in vivo*

CAPTURE	DETECTION
H86157M	H86910M
H86157M	H86611M

Antigens

- | | |
|-----------|---|
| H8P01-767 | <ul style="list-style-type: none">• Native antigen from aphoresis plasma• Low B12 and low folate |
|-----------|---|

Product list | Continued

Angiotensin

Angiotensin is a peptide hormone that causes vasoconstriction leading to high blood pressure. It is part of the renin-angiotensin system, which is a major target for drugs that lower blood pressure. Angiotensin I is converted to Angiotensin II through the enzyme angiotensin-converting enzyme (ACE). ACE inhibitors are widely used in the treatment of arterial hypertension and cardiovascular diseases.

Monoclonals

- Suitable for use in ELISA
 - Produced *in vivo*
- E01296M (Angiotensin I) * Does not cross-react with II and III
E01297M (Angiotensin II) * Cross-reacts with I and III

Apolipoprotein A-I (Apo A-I)

Apo A-I is the major protein component of high density lipoprotein (HDL) in plasma and plays a role in lipid metabolism.

Monoclonals

- Does not cross-react with Apo A-II or Apo B
- Suitable for use in RIA and ELISA
- Produced *in vivo*

MAC20-001

MAC20-029

H45402M

H45404M

H45625M

Polyclonals

CATALOG	SOURCE	FORMAT	APPLICATION
K45252G	Goat	Aff.Pur.	EIA,WB
K45252P	Goat	HRP	EIA,WB
K01234G	Goat	Monospecific	IEP
K23600G	Goat	Neat	RID
K04329G	Goat	Monospecific	IEP

* K97110S is specific for ApoA only (not ApoA II)

Apolipoprotein A-II (Apo A-II)

Apo A-II is the second most abundant protein of HDL particles and plays an important role in reverse cholesterol transport and lipid metabolism. Apo A-II is mainly produced in the liver and modulates lipoprotein lipase and hepatic triglyceride lipase. The Apo A-II test can be used as an aid in assessing the risk of CVD.

Polyclonals

CATALOG	SOURCE	FORMAT	APPLICATION
K45890G	Goat	Neat	EIA,WB
K97211R	Rabbit	Aff.Pur.	EIA,IB
G5C21-766	Goat	Aff.Pur.	IEP
K34001G	Goat	Aff.Pur.	EIA,WB
K34004G	Goat	Biotin	EIA,WB
K74001P	Goat	HRP	EIA,IB

Apolipoprotein B (Apo B)

Apo B is the primary apolipoprotein in LDL particles and high levels of Apo B and occurs in the plasma in two main isoforms, Apo B48 and Apo B100. Apo B48 is a unique protein to chylomicrons from the small intestine and Apo B100 is found in lipoproteins originating from the liver. It is well established that Apo B100 levels are associated with coronary heart disease, and serve as a better predictor of LDL levels.

Monoclonals

- Suitable for use in ELISA and RIA
- Produced *in vivo*

MAC23-031

MAC23-035

H45160M

H45161M

H45640M

Polyclonals

CATALOG	SOURCE	FORMAT	APPLICATION
Apo B			
G5C23-766	Goat	Aff.Pur.	N/A
K01235G	Goat	Monospecific	IEP
K04323G	Goat	Monospecific	IEP
K62200G	Goat	Monospecific	EIA,IEP,TIA

Apolipoprotein B (Apo B) *continued*

CATALOG	SOURCE	FORMAT	APPLICATION
Apo B-48/100			
K45253G	Goat	Aff.Pur.	EIA,WB
K34003G	Goat	Biotin	EIA,WB
K34005G	Goat	HRP	EIA,WB

Antigens

- | | |
|---------|---|
| A34300H | <ul style="list-style-type: none"> • Native Apo B100 from human plasma LDL • Cross-reacts with anti-LDL |
|---------|---|

Apolipoprotein AI/B (Apo AI/B) Calibrator

Antigens

- | | |
|---------|---|
| A62934H | <ul style="list-style-type: none"> • Native antigen from human plasma • Apo AI: 313.0 mg/dL (lot dependent) • Apo B: 307.0 mg/dL (lot dependent) |
|---------|---|

Apolipoprotein CII (Apo CII)

Apo CII acts as a co-factor for lipoprotein lipase, an enzyme that hydrolyses triglycerides in chylomicrons and VLDL. Can be used as an aid in assessing the risk of cardiovascular disease.

Polyclonals

CATALOG	SOURCE	FORMAT	APPLICATION
K74322G	Goat	Neat	EIA,IB
K97112R	Rabbit	Aff.Pur.	EIA,IB

Antigens

- | | |
|---------|--|
| A50302H | <ul style="list-style-type: none"> • Native antigen from human plasma VLDL • ≥ 95% pure (SDS-PAGE) |
|---------|--|

Apolipoprotein CIII

A protein that regulates both lipoprotein lipase and lecithin-cholesterol acyltransferase and may cause hypertriglyceridemia. Plasma levels of lipoprotein Apo CIII predict coronary heart disease and are associated with metabolic syndrome.

Polyclonals

CATALOG	SOURCE	FORMAT	APPLICATION
K74130G	Goat	Neat	EIA,IB
K74140G	Goat	Aff.Pur.	EIA,IB
K74140P	Goat	HRP	EIA,IB
K74170B	Goat	Biotin	EIA,IB
K97113R	Rabbit	Aff.Pur.	EIA,IB

Antigens

- | | |
|---------|--|
| A34129H | <ul style="list-style-type: none"> • Native antigen from human plasma (VLDL) • ≥ 95% pure (SDS PAGE) |
|---------|--|

Apolipoprotein E (Apo E)

A major component of very low-density lipoproteins (VLDLs) and binds to a specific receptor on liver and peripheral cells. There are 3 major alleles: E3, E4, and E2. E3 is the normal form with normal function, the E2 variant has a reduced ability bind receptors and is associated with a high risk of CVD and the E4 variant is associated with increased levels of LDL- cholesterol and decreased levels of HDL-cholesterol, which is associated with a higher risk of developing coronary artery disease.

Monoclonals

- Reacts with VLDL of human plasma
 - Suitable for use in ELISA and IHC
 - Produced *in vivo*, lyophilized
- H61529M

Polyclonals

CATALOG	SOURCE	FORMAT	APPLICATION
G5C27-766	Goat	Aff.Pur.	N/A
K34002G	Goat	HRP	EIA,WB
K74190G	Goat	Aff.Pur.	EIA,WB
K74180B	Goat	Biotin	EIA,WB

Antigens

- | | |
|---------|---|
| A50120H | <ul style="list-style-type: none"> • Native antigen from human plasma (VLDL) • > 95% pure (SDS-PAGE) |
|---------|---|

Product list | Continued

BNP, ProBNP & NT-ProBNP

BNP (B type natriuretic peptide) is a hormone and important biomarker with an established role in the diagnosis of congestive heart failure. Its utility has also been explored in myocardial ischemia and infarction, and in acute pulmonary embolism. When BNP is secreted it is attached to a 76-amino acid N-terminal fragment called NT-proBNP which is biologically inactive. Once released, BNP binds to and activates the atrial natriuretic factor (ANP) receptors.

Monoclonals

- Reacts with proBNP, N-terminal
- Suitable for proBNP and NT-proBNP immunoassay

H86705M	a.a. 13-27	
H86010M	a.a. 28-45	*Also works in WB
H86916M	a.a. 46-60	*Also works in WB
H86288M	a.a. 61-76	

Antibody Pairs

- Suitable for use in ELISA and WB
- Specific for Human BNP unless otherwise specified

CAPTURE	DETECTION	
H86051M	H86262M	
H86051M	H01365M	
H01365M	H86507M	
H01365M	H86573M	
H01365M	H01366M	*Recognizes BNP & pro-BNP
H86051M	H86915M	*Recognizes pro-BNP
H86451M	H86132M	*Recognizes proBNP & NT-proBNP
H86451M	H86912M	*Recognizes proBNP & NT-proBNP
H86451M	H86915M	*Recognizes proBNP & NT-proBNP
H86511M	H86214M	*Recognizes proBNP & NT-proBNP
H01420M	H01422M	*Detects NT-proBNP and proBNP
H01420M	H01419M	*Detects NT-proBNP and proBNP
H01420M	H01423M	*Detects NT-proBNP and proBNP

Polyclonals

CATALOG	SOURCE	FORMAT	APPLICATION
K4A660R	Rabbit	Neat	EIA, IFA, IHC, RIA
K4A670R	Rabbit	Purified	EIA, IHC, RIA
K24410R	Rabbit	Neat	RIA

Antigens

R01614	<ul style="list-style-type: none"> • proBNP recombinant (<i>E. coli</i>) • Suitable for enzyme linked fluorescent assay • ≥ 95% pure (Silver Staining SDS-PAGE)
A24108H	<ul style="list-style-type: none"> • proBNP recombinant (<i>E. coli</i>) • > 95% pure (SDS-PAGE)
A01455H	<ul style="list-style-type: none"> • proBNP recombinant (<i>E. coli</i>) • Suitable for use in ELISA as a calibrator, standard or an immunogen for antibody development • Contains one additional Methionine residue at the N-Terminus (in comparison with native proBNP) • > 95% pure (Tricine SDS-PAGE)
A24810H	<ul style="list-style-type: none"> • proBNP, C-terminal (synthetic) • Represents amino acids 1-32 • > 95% pure (HPLC), lyophilized
R01616	<ul style="list-style-type: none"> • NT-proBNP recombinant (<i>E. coli</i>) • > 95% pure (Silver Staining SDS-PAGE) • Suitable for enzyme linked fluorescent assay
A01261H	<ul style="list-style-type: none"> • NT-proBNP recombinant (<i>E. coli</i>) • Suitable for use in ELISA • > 95% pure (Tricine SDS-PAGE)
A24607H	<ul style="list-style-type: none"> • proBNP, N-terminal recombinant (synthetic) • Represents a.a. 1-76 • > 95% pure (HPLC), lyophilized
A24760H	<ul style="list-style-type: none"> • proBNP, N-terminal recombinant (<i>E. coli</i>) • Represents the N-terminal a.a. 1-76 • > 95% pure (SDS-PAGE), lyophilized

Carboxy Methyl Lysine (CML)

A well-characterized glycoxidation product, formed from the oxidation of both carbohydrates and lipids, which accumulates in tissues with age. CML is a biomarker of general oxidative stress which is involved in the pathogenesis of atherosclerosis.

Polyclonals

CATALOG	SOURCE	FORMAT	APPLICATION
K97135G	Goat	Aff. Pur.	EIA, WB

sCD40 Ligand (sCD40L)

A member of the TNF superfamily primarily expressed on activated T cells. Studies suggest that sCD40L may be at the heart of the atherosclerotic process, specifically playing a role in the inflammatory aspects of atherosclerotic lesion progression, thrombosis and restenosis.

Monoclonals

- Suitable for use in ELISA and WB
- Can be used for detection of human sCD40L in serum
P86210M

Collagen Type I & III

Increased myocardial collagen accumulation is present in almost every cardiac disease and plays an important role in the reduced heart function. N-terminal and C-terminal propeptides of Collagen Type I and III are the two major collagen types in the heart and reflect collagen synthesis and degradation. Their role as serum biomarkers for the diagnosis of cardiac fibrosis is being studied.

Monoclonals

- Specific for both native and heat denatured human Collagen Type I
- Suitable for ELISA and IHC
M1A340M

Polyclonals

CATALOG	SOURCE	FORMAT	APPLICATION
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Collagen Type III

T40233R	Rabbit	Purified	EIA, IFA, IHC
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Antigens

- | | |
|---------|--|
| A33123H | <ul style="list-style-type: none"> • Native Human Collagen Type III • Sourced from placental villi, > 90% pure (SDS-PAGE) • Suitable as a immunoassay standard and for antibody production |
|---------|--|

C-peptide & Proinsulin

C-peptide is a combination of amino acids that are a by-product of insulin and the level of this protein indicates how much insulin the pancreas is producing. Studies have shown an association between serum C-peptide levels and risk of cardiovascular-related disease and coronary artery-related mortality among adults without diabetes.

Monoclonals

- Reacts with human free C-peptide and Proinsulin
- Suitable for use in ELISA and RIA
- Produced *in vivo*
E86588M

- Reacts with C-peptide
- Suitable for use in ELISA and RIA
E86710M
MHP18-601
MHP18-6014 * Biotin conjugated

C-Reactive Protein (CRP)

CRP is mainly used as a maker of inflammation. High-sensitivity CRP assays can be used for determining the risk of cardiovascular disease, heart attacks, and stroke.

Antibody Pairs

- Suitable for use in ELISA, high sensitivity
- MAbs produced *in vivo*

CAPTURE DETECTION

M86005M	M01239M	* Recognizes CRP with or without Ca ²⁺ .
M01243M	M01239M	* Recognizes CRP with or without Ca ²⁺ .
M01331M	M01330M	

Monoclonals

- Recognizes CRP with or without the presence of Ca²⁺
- Suitable for use in ELISA
- Produced *in vivo*

M01238M * Can also be used in IHC and WB

M66112M

M66113M

M86007M

* Can also be used in IHC

M86842B

* Biotin conjugated

M86842M

- Recognizes CRP
- Suitable for use in ELISA (Unless otherwise specified)
- Produced *in vivo*

M01319B * Biotin conjugated

M01319M

M01295M * No applications have been tested

Product list | Continued

C-Reactive Protein (CRP) *continued*

Polyclonals

CATALOG	SOURCE	FORMAT	APPLICATION
L01237G	Goat	Purified	IEP
M01333C	C. Egg	Aff. Pur.	N/A

Antigens

A01430H	<ul style="list-style-type: none"> Native antigen from human fluids ≥ 98% pure (SDS-PAGE)
A01250H	<ul style="list-style-type: none"> Recombinant (<i>E. coli</i>) Pentamer structure

Creatine Kinase BB (CK-BB)

CK-BB is found mostly in the brain and increases in response to brain injury, meningitis, abnormal cell growth, severe shock, stroke, hypothermia, or restricted blood flow to the bowel. It is used in creatine kinase test which determines what percentage of the total creatine kinase is due to the type produced by damaged heart muscles (CK-MB).

Monoclonals

- Produced *in vivo*
- MAC01-288

Antigens

VTI830	<ul style="list-style-type: none"> Recombinant (<i>P. pastoris</i>) Full length protein with amino acid sequence identical to the native enzyme > 95% pure (SDS-PAGE) Suitable for use in ELISA
H6C01-323	<ul style="list-style-type: none"> Native antigen from human brain Activity: 730 Units/mL at 37°C (lot dependent)

Creatine Kinase MB (CK-MB)

CK-MB is expressed in heart muscle and it is used in the diagnosis of acute myocardial infarction and possible reinfarction. The half-life of CK-MB in the circulation is relatively short (approximately 12 hours). CK-MB is relatively cardiac-specific, even healthy people may have low concentrations of this isoenzyme in their blood.

Antibody Pairs

- Suitable for use in ELISA and LF
- MAbs produced *in vivo*

CAPTURE DETECTION

H31795M	K31315G	* K31315G is a polyclonal Goat anti-CK-MM
K31315G	H31795M	* K31315G is a polyclonal Goat anti-CK-MM
H01330M	H01329M	

Antigens

VTI840	<ul style="list-style-type: none"> Recombinant (<i>P. pastoris</i>), Isoenzyme Type I Suitable for use in ELISA
VTI810	<ul style="list-style-type: none"> Recombinant (<i>P. pastoris</i>), Isoenzyme Type I Suitable for use in ELISA

Creatine Kinase MM (CK-MM)

Found in your skeletal muscle and heart. CK-MM generally rises if you have muscle damage in your heart, brain, or skeleton after a crush injury, seizures, muscular dystrophy, muscle inflammation, or another skeletal muscle disorder. It is used in creatine kinase test which determines what percentage of the total creatine kinase is due to the type produced by damaged heart muscles (CK-MB).

Monoclonals

- Suitable for use in ELISA
- Produced *in vivo*
- 52% cross-reactivity to CK-MB
- 0% Cross-reactivity to CK-BB

MAC02-186

MAC02-512

Polyclonals

CATALOG	SOURCE	FORMAT	APPLICATION
G5C02-766	Goat	Aff.Pur.	N/A
H01310G	Goat	Purified	N/A
K31315G	Goat	Aff.Pur.	EIA,LF

* K31315G pairs with MAb to CK-MB H31795M

Creatine Kinase MM (CK-MM) *continued*

Antigens

VTI850	<ul style="list-style-type: none"> Recombinant (<i>P. pastoris</i>), Isoenzyme Type I Full length protein without the C-terminal lysine on both subunits Suitable for use in WB and ELISA
VTI820	<ul style="list-style-type: none"> Recombinant (<i>P. pastoris</i>), Isoenzyme Type I Identical amino acid sequence to native protein Suitable for use in ELISA
A38925H	<ul style="list-style-type: none"> Native antigen from human heart, lyophilized

Cystatin C

Traditionally used as a biomarker of kidney function, it has recently been studied for its role in predicting new onset or deteriorating CVD. In different cardiovascular conditions, Cystatin C is a sensitive marker for renal dysfunction, a predictor of the development of heart failure, and is independently associated with subsequent CVD and outcome.

Antibody Pairs

- Suitable for use in ELISA
- MAbs produced *in vivo*

CAPTURE	DETECTION
H86023M	H86013M

Antigens

A01419H	<ul style="list-style-type: none"> Native antigen from human urine
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D-Dimer

D-dimer is a marker of fibrin turnover and elevated levels are indicative of the presence of a clot and have been reported in deep vein thrombosis, pulmonary embolism, disseminated intravascular coagulation, acute aortic dissection, myocardial infarction, malignant diseases, obstetrical complications, third trimester of pregnancy, and surgery. It is a marker for the early diagnosis of acute coronary syndromes and can be used in addition to traditional assessment for myocardial infarction.

Monoclonals

- Does not cross-react with fibrinogen and D-monomer (unless noted otherwise)
 - Suitable for use in ELISA and WB
- | | |
|---------|---|
| N86925M | * Reacts with high molecular weight fibrin degradation products |
| N86925B | * Biotin conjugated |

Antibody Pairs

- Suitable for use in ELISA and WB
- Reactive with D-Dimer and other fibrin degradation products
- MAbs produced *in vivo*

CAPTURE	DETECTION
N01270M	N01269H
N01273M	N01274M
N86304M	N86925M
N86304M	N86043M

- * Does not cross-react Fragment D or E, also suitable for LF
- * Does not cross-react with Fibrinogen

Antigens

A01408H	<ul style="list-style-type: none"> Native antigen from human plasma > 90% pure (SDS-PAGE and gel-scanning)
A01463H	<ul style="list-style-type: none"> Native antigen from human plasma Suitable for ELFA ≥ 95% pure (SDS-PAGE)
A86870H	<ul style="list-style-type: none"> Native antigen from human plasma > 90% pure (SDS-PAGE and gel-scanning), lyophilized

Epidermal Growth Factor (EGF)

EGF is a growth factor with potential use as cardiac biomarker due to its role in the proliferation of cardiac stem cells. Research suggests that the human heart has an endogenous reserve of cardiac stem cells (CSCs) which can be activated by various growth factors to reconstitute injured myocardium. EGF has shown to significantly promote the proliferation, migration, and wound healing activities of these CSCs in comparison to the other growth factors.

Antigens

VTI880	<ul style="list-style-type: none"> Recombinant (<i>P. pastoris</i>) Suitable for use in WB >95% pure (SDS-PAGE)
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Product list | Continued

Fatty Acid Binding Protein (FABP)

Heart type FABP is a small cytoplasmic protein (15 kDa) released from cardiac myocytes following an ischemic episode. It is an early biomarker for myocardial infarction, detected in the blood within one to three hours of acute coronary syndrome.

Antibody Pairs

- Suitable for use in ELISA
- MAbs produced *in vivo*

CAPTURE	DETECTION	
H86101M	H86505M	
H01314M	H86101M	
H01314M	H01315M	
H01324M	H01323M	* Also works in LF assays

Antigens

A86865H	<ul style="list-style-type: none"> • Native antigen from human heart • Suitable for use as an immunoassay standard, immunogen for antisera production, or a tracer for iodination • > 95% pure (10-20% gradient SDS-PAGE)
R01617	<ul style="list-style-type: none"> • FABP3 Recombinant (<i>E.coli</i>) • Suitable for use in ELISA • ≥ 95% pure (silver staining SDS-PAGE)

Fibrinogen/ Fibrinopeptide A

Fibrinogen is a plasma glycoprotein that is essential for blood clotting and has the ability to promote thromboses, or clots, by causing platelets to clump inside blood vessels. A number of studies have shown elevated fibrinogen levels to be a major risk factor for coronary heart disease.

Antibody Pairs

- Suitable for use in ELISA
- For specific fibrinogen detection, pair a capture anti-fibrinopeptide A antibody with a detection anti-fibrinogen antibody
- MAbs produced *in vivo*

CAPTURE	DETECTION	
N86710M	N86413M	* N86710M is specific for Fibrinopeptide A

Galectin-3

Galectin-3 is a galactoside-binding protein G that binds to and activates myofibroblasts in damaged heart tissue, leading to collagen synthesis and subsequently problematic fibrosis. It has been correlated with the prognosis in patients with coronary heart failure and the first Galectin-3 biomarker assay was approved by the FDA in 2010.

Monoclonals

K01381M	* Suitable for use in FC, produced <i>in vivo</i>
K01382M	* Suitable for use in FC, produced in cell culture

Ghrelin

Clinical studies suggest a role for ghrelin in the treatment of CHF. Known cardiovascular effects of ghrelin include lowering of peripheral resistance either direct at the vascular level, and/or by modulating sympathetic nervous activity. Ghrelin also has potential as a marker of abnormal metabolism in cardiac failure.

Monoclonals

- Suitable for use in ELISA
 - Produced *in vivo*
- E86621M

Glycogen Phosphorylase Isoenzyme BB (GPBB)

GPBB is an isoenzyme of glycogen phosphorylase and a key enzyme of glycogenolysis. It has been suggested as an early marker of acute myocardial infarction and unstable angina.

Monoclonals

- Suitable for use in ELISA and WB
 - Produced *in vivo*
- H86807M

Hemoglobin A1c (HbA1c)

As glucose circulates in the blood, some of it spontaneously binds to hemoglobin to form hemoglobin A1c (HbA1c). The development of specific diabetes complications correlates with glycated haemoglobin (HbA1c), the most accepted measure of chronic glycaemia.

Monoclonals

- Suitable for use in sandwich ELISA
- Does not cross-react with HbA10
- Produced *in vivo*

H01331M * Can also work in indirect ELISA (antigen capture)

H01388M * Can also work in WB

Antigens

- A01273H
- Native antigen from human erythrocytes
 - > 96% HbA1c (HPLC analysis using a Mono S Column)

Interleukin 8 (IL-8)

IL-8 is a neutrophil chemokine produced by macrophages, lymphocytes, epithelial cells and endothelial cells, and promotes neutrophil chemotaxis. Studies in patients with CAD have demonstrated that IL-8 may predict cardiovascular events independent of the other cytokines and high sensitivity CRP.

Antigens

- A42280H
- Recombinant (*E. coli*), a.a. 1-72
 - > 98% pure (HPLC, FPLC and reducing and non-reducing SDS-PAGE)
- A42208H
- Recombinant (*E. coli*), a.a. 1-77
 - > 98% pure (HPLP and SDS-PAGE)

Lectin-like Oxidized LDL Receptor-1 (sLOX) Soluble Form

A major endothelial receptor for oxidized low-density lipoprotein which is believed to play a role in atherosclerosis. Its expression is induced in pro-atherogenic settings including hypertension, hyperlipidemia, and diabetes, and it accumulates intherosclerotic lesions where it has been strongly linked to plaque rupture. Specifically sLOX-1 levels are elevated in acute coronary syndrome at an early stage, suggesting its usefulness as an early diagnostic marker of acute coronary syndrome.

Monoclonals

- Specific for human recombinant sLOX-1 (a.a. 58-273)
- Suitable for use in ELISA and WB
- Produced *in vivo*

H86922M

Lipoproteins HDL, LDL, VLDL Receptor

Lipoprotein diagnostics, such as LDL cholesterol and HDL cholesterol, help to diagnose dyslipidemia which is an important risk factor for cardiovascular disease and type II diabetes.

Monoclonals

- MAb to LDL Receptor-Related Protein (LRP)
 - Will not block ligand binding
 - Suitable for use in ELISA, WB, IHC, and FC
- H63650M

Antigens

- A95132H
- Native HDL from human normolipidemic plasma
 - Devoid of VLDL, IDL and LDL
 - Ultracentrifugation at density 1.063–1.210
- A95322H
- Native HDL 2 (HDL2) Subfraction from human normolipidemic plasma
 - Devoid of VLDL, IDL, LDL, and HDL3
 - Ultracentrifugation density at 1.063 - 1.125
- A95332H
- Native HDL 3 (HDL3) Subfraction from human normolipidemic plasma
 - Devoid of VLDL, IDL, LDL, and HDL2
 - Ultracentrifugation density at 1.120–1.21g/mL
- A34275H
- Reconstituted HDL from human plasma
 - A complex of human Apolipoprotein A-I and 1-palmitoyl-2-oleoyl phosphatidylcholine prepared at a molar ratio of 1 to 100 by the cholate removal method
- A34013H
- Native VLDL from human plasma
 - Devoid of IDL, LDL, and HDL
 - Purification by ultracentrifugation at density 1.006

Product list | Continued

Lipoprotein-Associated Phospholipase A2 (Lp-PLA2)

Lp-PLA2 is a protein produced by inflammatory cells that circulates mainly with LDL and is responsible for hydrolyzing oxidized phospholipids in LDL. It is highly upregulated in atherosclerotic plaques and is thought to be directly involved in the development of atherosclerosis and plaque rupture.

Monoclonals

- Suitable for use in ELISA
 - Produced in cell culture
- H01389M

Antibody Pairs

- Suitable for use in ELISA
- Produced in cell culture

CAPTURE	DETECTION
H01390M	H01393M
H01390M	H01389M
H01392M	H01393M

Polyclonals

CATALOG	SOURCE	FORMAT	APPLICATION
H01333S	Sheep	Aff.Pur.	EIA,IHC,WB

Antigens

- A01413H
- Recombinant (*E. coli*)
 - > 95% pure (SDS-PAGE)
 - Contains a His-tag

Low Density Lipoprotein Receptor-Related Protein (LRP)

LRP is a large multifunctional receptor mediating the clearance of diverse ligands, including selected lipoproteins, various protease inhibitor complexes, and thrombospondin. The range of ligands recognized by LRP suggests that it plays a role in diverse processes including lipid metabolism, cell growth, migration, and tissue invasion.

Monoclonals

- Suitable for use in WB, IHC, and FC
 - Produced *in vivo*
- H63180M * Specifically reacts with the 515 kDa alpha-chain of human LRP/alpha2
- H63080M * Specific for human light chain of LRP, 85 kDa

Malondialdehyde (MDA)

MDA is a reactive aldehyde produced by the degradation of polyunsaturated lipids and causes oxidative modification of LDL to form malondialdehyde low density lipoprotein (MDA-LDL). MDL-LDL is a sensitive biomarker for ACS patients with unstable angina and acute myocardial infarction. MDA-LDL not only serves as an oxidative stress marker but as a marker of plaque destabilization.

Polyclonals

CATALOG	SOURCE	FORMAT	APPLICATION
K97120P	Goat	HRP, Lyophilized	EIA,WB

Monocyte Chemotactic Protein 1 (MCP-1/MCAF)

MCP-1 is a cytokine produced by macrophages, smooth muscle cells and endothelial cells within atherosclerotic plaques and an important indicator of atherosclerotic plaque burden. Specifically, high levels of MCP-1 have been associated with a poor prognosis and increased risk for death independent of other risk factors in patients with ACS.

Antigens

- A01251H
- Recombinant (*E. coli*)
 - Non-glycosylated polypeptide chain containing 76 a.a.
 - > 98% pure (RP-HPLC and SDS-PAGE), lyophilized

Myeloperoxidase (MPO)

MPO is a peroxidase enzyme and a marker of inflammation and neutrophil activation during strenuous exercise. In addition, it has been implicated in the oxidation of lipids contained in low-density lipoproteins, infiltration of macrophages and neutrophils, formation of unstable coronary plaques, and plaque rupture. MPO is elevated in patients with coronary artery disease and can serve as a prognostic marker to identify patients with unstable plaques before complete microvascular obstruction.

Monoclonals

- Suitable for use in ELISA
 - Produced *in vivo* (unless stated otherwise)
- H87207M *Also works in WB, IHC, FC and produced in cell culture
- K86005M *Also works in WB

Myeloperoxidase (MPO) *continued*

Antigens

A01462H	<ul style="list-style-type: none"> • Native antigen from human neutrophils • Suitable for use in ELISA
A38104H	<ul style="list-style-type: none"> • Native antigen from human neutrophils • > 96% pure (SDS-PAGE)
A50181H	<ul style="list-style-type: none"> • Native antigen from human neutrophils • ≥ 95% pure (SDS-PAGE), lyophilized

Myoglobin (MYO)

Myoglobin is the primary oxygen-carrying pigment of muscle tissue and it is present in high levels in serum when muscle tissue is damaged, such as after a heart attack. Myoglobin achieves its maximal diagnostic sensitivity within 5 hours of symptom onset and is an early marker of acute myocardial infarction. However, in patients with concurrent trauma or renal failure it exhibits poor specificity.

Antibody Pairs

- Suitable for use in ELISA
- MAbs produced *in vivo* (unless noted otherwise)

CAPTURE DETECTION

H86142M	H86703M
H86703M	H86142M

Polyclonals

CATALOG	SOURCE	FORMAT	APPLICATION
H01370C	C. Eggs	Aff.Pur.	N/A

Antigens

A38131H	<ul style="list-style-type: none"> • Native antigen from human heart tissue • ≥ 99% pure (SDS-PAGE, reduced)
A86850H	<ul style="list-style-type: none"> • Native antigen from human heart tissue • > 95% pure (SDS-PAGE), lyophilized • Suitable for use as a reference or standard in immunoassays

Neuron Specific Enolase (NSE)

NSE is one of three recognized forms of enolase, an enzyme in the glycolysis pathway. Studies have shown NSE concentrations rise in the cerebrospinal fluid following an ischemic stroke.

Antibody Pairs

- Specific for the gamma subunit without detectable cross-reactivity with the alpha or beta subunits
- Suitable for use in ELISA
- MAbs produced *in vivo*

CAPTURE DETECTION

M86520M	M86101M
M86406M	M86101M
M86416M	M86101M
M86141M	M86201M
M86101M	M86520M

Antigens

A86803H	<ul style="list-style-type: none"> • Native antigen from human brain • > 95% pure (SDS-PAGE) • Suitable for use in ELISA and WB
A01359H	<ul style="list-style-type: none"> • Recombinant (<i>E. coli</i>), a.a. 2-434 • > 95% pure (SDS-PAGE) • Suitable for use in ELISA, LF, WB, DB and IHC
A01448H	<ul style="list-style-type: none"> • Recombinant (<i>E. coli</i>), a.a. 1-434 • ≥ 95% pure (SDS-PAGE) • Suitable for use in ELISA

Neutrophil Gelatinase-Associated Lipocalin (NGAL) / Lipocalin-2

A glycoprotein involved in the regulation of cellular apoptosis and the transport of iron across cell membranes. It has recently been implicated in atherosclerosis through its effects on MMP-9, an important mediator of vascular remodelling and plaque instability. Increased levels of NGAL have been found in patients with atherosclerotic plaques and myocardial infarction.

Polyclonals

CATALOG	SOURCE	FORMAT	APPLICATION
K01392C	C. Eggs	Aff.Pur.	N/A

Antigens

9278	<ul style="list-style-type: none"> • Recombinant (CHO cells) • ≥ 95% pure (SDS-PAGE) • Suitable for use in WB
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Product list | Continued

Plasminogen Activator Inhibitor 1 (PAI-1)

PAI-1 is the principal inhibitor of tissue plasminogen activator (tPA) and urokinase Plasminogen Activator (uPA), the activators of plasminogen and fibrinolysis. Increased PAI-1 levels may predispose patients to the formation of atherosclerosis plaques. Clinical evidence suggests that increased PAI-1 levels are associated with atherothrombosis and elevated plasma PAI-1 levels have been identified as a predictor of myocardial infarction.

Monoclonals

- Recognizes both free and complexed forms of Human PAI-1
 - Suitable for use in ELISA
 - Produced *in vivo*
- N63913M

Polyclonals

CATALOG	SOURCE	FORMAT	APPLICATION
K63132R	Rabbit	Purified	EIA,IHC,WB

Antigens

- A63625M
- Recombinant (*E. coli*)
 - >95% pure (SDS-PAGE), 80 ± 5% active by uPA titration

Pregnancy Associated Plasma Protein A (PAPP-A)

PAPP-A is a high molecular weight, zinc-binding metalloproteinase that is associated with vulnerable plaques and may predict CVD and mortality. Human PAPP-A antigen purified from placental blood is a heterotetrameric complex (htPAPP-A) consisting of two PAPP-A subunits and two proMBP subunits. Human PAPP-A antigen purified from atherosclerotic plaques is homodimeric (dPAPP-A) consisting of two PAPP-A subunits.

Monoclonals

- Detects heterotetrameric PAPP-A (htPAPP-A), unless noted otherwise
 - Suitable for use in ELISA
 - MAbs produced *in vivo*
- E86509M
E86509M
E01261M

Antibody Pairs

- Detects heterotetrameric PAPP-A (htPAPP-A), unless noted otherwise
- Suitable for use in ELISA
- MAbs produced *in vivo*

CAPTURE	DETECTION	
E86509M	E01261M	
E86141M	E86910M	* Pair also detects dimeric PAPP-A
E01345M	E01344M	* Pair detects dimeric PAPP-A only
E01343M	E01261M	* Pair detects dimeric PAPP-A only

Antigens

- A86864H
- Native antigen sourced from pooled human retroplacental blood
 - Specific for heterotrimeric complex (PAPP-A and pro-MBP subunits)
 - Suitable for use in IFA
 - > 85% pure (SDS-PAGE), lyophilized
- A01684H
- Recombinant (human cell line)
 - Specific for homodimeric form (dPAPP-A)
 - Suitable for use as a standard in ELISA or for antibody production
 - > 90% pure (SDS-PAGE)

Procalcitonin (PCT)

PCT is a peptide precursor of the hormone calcitonin and has shown promise as a diagnostic marker of acute inflammatory conditions. Specifically it has been implicated as an inflammation marker in early atherosclerosis and in bacterial infections.

Monoclonals

- Suitable for use in ELISA and WB (unless otherwise noted)
 - Produced *in vivo*
- E01308M * Biotin conjugated
E86131M * Also detects calcitonin

Antibody Pairs

- Suitable for use in ELISA and WB
- MAbs produced *in vivo*

CAPTURE	DETECTION	
E86561M	E86494M	
E86561M	E86420M	
E86813M	E86112M	
E01291M	E86494M	
E01341M	E01340M	
E01342M	E01340M	* Also works in LF assays
E86412M	E86813M	* Also detects katacalcin
E86813M	E86112M	* Also detects katacalcin

Procalcitonin (PCT) *continued*

CAPTURE	DETECTION
E01342M	E01340M * Also detects katacalcin and works in LF assays

Antigens

A01454H	<ul style="list-style-type: none"> Recombinant (<i>E. coli</i>) Represents a.a. 1-116, contains no tags > 95% pure, lyophilized Suitable for use in ELISA
A01367H	<ul style="list-style-type: none"> Recombinant (<i>E. coli</i>) Represents a.a. 3-116, contains a His-tag > 95% pure (SDS-PAGE) Suitable for use in ELISA and WB

Procollagen Type III

Procollagen Type III is a precursor molecule of Collagen Type III, a fibrillar collagen that is found in connective tissues such as skin, lung, uterus, intestine and the vascular system, usually in association with type I collagen. Increased serum levels of Procollagen Type III have been associated with atherosclerosis.

Polyclonals

CATALOG	SOURCE	FORMAT	APPLICATION
T40331R	Rabbit	Purified	EIA, IFA, IHC, RIA

Proinsulin

Proinsulin is the prohormone precursor to insulin. In later stages of type 2 diabetes, proinsulin and proinsulin-like molecules are secreted in increasing amounts with insulin. Studies have shown elevated intact proinsulin seems to indicate an advanced stage of β -cell exhaustion and is a highly specific marker for insulin resistance.

Monoclonals

- Does not cross react with human C-peptide
 - Suitable for use in ELISA
 - MAbs produced *in vivo*
- E83802M
- Does not cross react with human C-peptide
 - Suitable for use in ELISA
 - MAbs produced *in vivo*
 - Recognizes human insulin
- E83102M

Antibody Pairs

- Does not cross react with human C-peptide
- Suitable for use in ELISA
- MAbs produced *in vivo*

CAPTURE	DETECTION
E86209M	E86102M * E86102M recognizes human insulin
E86104M	E86210M
E01339M	E83102M * E83102M recognizes human insulin
E01339M	E86802M

Relaxin

Relaxin is a peptide hormone that has a variety of actions on reproductive and non-reproductive organs. Recent research has found that relaxin levels are increased in heart failure and correlates with its severity. Relaxin has also been evaluated as a pharmacologic agent for the treatment of patients with acute heart failure.

Monoclonals

- Suitable for use in ELISA and FC
 - Produced in cell culture
- E24520M * Specific for Relaxin 1 and does not cross-react with Relaxin 2
- E24720M * Recognizes Relaxin 1 and 2

Renin

Renin is an enzyme released by the kidneys and is part of the renin-angiotensin system, a group of related hormones that act together to regulate blood pressure. A renin assay blood test is performed to find the cause of high blood pressure (hypertension). It is often tested alongside aldosterone (a hormone made by the adrenal glands) in order to obtain a complete understanding of an individual's hormone balance.

Antibody Pairs

- Suitable for use in ELISA
- Produced in cell culture

CAPTURE	DETECTION
E01363M	E01364M
E01365M	E01363M
E01365M	E01364M
E01366M	E01364M
E01366M	E01363M

Product list | Continued

S-100

The S-100 family of proteins are involved in the regulation of a number of cellular processes including cell cycle progression and differentiation. Studies have shown that serum measurements of S100-beta may be useful for the diagnosis and prognosis of acute stroke.

Monoclonals

- Produced *in vivo*
- MEM24-211 * Works in IHC
- Q86403M * Recognizes S-100 (beta-beta) and S-100 (alpha-beta), works in WB

Antibody Pairs

- Suitable for use in ELISA and IP
- MAbs produced *in vivo*

CAPTURE	DETECTION	
Q86006M	Q86610M	* Specific for S-100 beta-beta and alpha-beta
Q86003M	Q86610M	* Specific for S-100 beta-beta and alpha-beta

Antigens

- | | |
|---------|--|
| A86809H | <ul style="list-style-type: none"> Native antigen from human brain Contains beta-beta homodimer (S-100b) and alpha-beta heterodimer (S-100a) > 95% pure, lyophilized Suitable for ELISA, as an immunogen for antiserum production and tracer for iodination |
| A86289H | <ul style="list-style-type: none"> Native S-100b from human brain > 95% pure, lyophilized Suitable for ELISA, as an immunogen for antiserum production and tracer for iodination |

S-Adenosyl-Homocysteine (SAH)

SAH is formed by the demethylation of S-adenosyl-L-methionine (SAM) and acts as an intermediate in the synthesis of cysteine and adenosine. It is elevated in CVD and serves as an indicator of various diseases involving vascular dysfunction.

Polyclonals

CATALOG	SOURCE	FORMAT	APPLICATION
K01395C	C. Eggs	Aff.Pur.	N/A

Serum Amyloid A (SAA)

SAA is a sensitive marker of acute inflammation that has been implicated in several chronic inflammatory diseases such as amyloidosis, atherosclerosis, and rheumatoid arthritis. A systemic inflammation (manifested by high SAA levels) may promote atherosclerotic plaque destabilization, in addition to exerting a possible direct effect on atherogenesis.

Antibody Pairs

- Suitable for use in ELISA and WB
- Recognizes native and recombinant human SAA
- MAbs produced *in vivo*

CAPTURE	DETECTION
H01381M	H01383M
H01382M	H01384M
H86177M	H86180M
H86180M	H86177M
H86177M	H86178M
H86178M	H86177M

Polyclonals

CATALOG	SOURCE	FORMAT	APPLICATION
H01379R	Rabbit	Purified	EIA, IEP

Antigens

- | | |
|--------|--|
| R01619 | <ul style="list-style-type: none"> Recombinant (<i>E. coli</i>) 122 a.a. long with N-terminal His tag Suitable for use in ELISA |
|--------|--|

Stromal Cell-Derived Factor 1 alpha (SDF-1α)

SDF-1α is a chemokine produced in two forms, SDF-1α and SDF-1β by alternate splicing of the same gene. Studies have found increased levels of SDF-1α in several cardiac diseases. It has been suggested to be a prognostic marker in atrial fibrillation.

Antigen

- | | |
|---------|--|
| A42028H | <ul style="list-style-type: none"> Recombinant (<i>E. coli</i>) >98% pure (RP-HPLC and SDS-PAGE), lyophilized |
|---------|--|

Thrombomodulin

Thrombomodulin is a protein present in the endothelial membrane of cells which serves as a co-factor to protein C in the coagulation cascade. Its functions as an anti-coagulant regulator, and can be measured as a soluble protein in the serum after vascular injury.

Antigens

R01802	<ul style="list-style-type: none"> Human Thrombomodulin (THBD) Protein, Recombinant (His-tag C-terminus) Source: HEK293 ≥ 90% (SDS-PAGE) in phosphate buffer saline pH 7.2 Suitable for ELISA, lateral flow, and western blot
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Tissue Plasminogen Activator (tPA)

tPA is a serine protease that catalyzes the conversion of plasminogen to plasmin, the major enzyme responsible for clot breakdown. An elevated level of tPA antigen is a proposed marker of increased coronary risk.

Polyclonals

CATALOG	SOURCE	FORMAT	APPLICATION
K63250R	Rabbit	Purified	EIA,IHC,WB

Troponin Complex

Troponin is a complex of three regulatory proteins (Troponin C, Troponin I, and Troponin T) that is integral to muscle contraction in skeletal muscle and cardiac muscle, but not smooth muscle. Troponin I and T are specific to cardiac muscles and are very sensitive and specific markers for unstable angina and myocardial infarction. Troponin C is associated with both cardiac and skeletal muscles and is not used in the diagnosis of myocardial damage.

Antigens

A86608H	<ul style="list-style-type: none"> Native antigen from human heart tissue >95% pure (SDS-PAGE)
A86111H	<ul style="list-style-type: none"> Native antigen from human heart tissue Complex of Troponin I-T-C in a molar ratio 1:1:1

Troponin C-Cardiac (cTnC)

cTnC is part of the Troponin Complex and is responsible for binding calcium to activate muscle contraction. In cardiac muscle, cTnC binds to Cardiac Troponin I (cTnI) and Cardiac Troponin T (cTnT), whereas cTnC binds to slow Skeletal Troponin I (ssTnI) and Troponin T (ssTnT) in slow-twitch skeletal muscle.

Antigens

A86857H	<ul style="list-style-type: none"> Native antigen from human heart tissue > 98% pure (SDS-PAGE), lyophilized Suitable for use as a standard, immunogen for antisera production, tracer for iodination
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Troponin I-Cardiac (cTnI)

As part of the troponin complex, cTnI binds to actin in thin myofilaments to hold the actin-tropomyosin complex in place and is present in cardiac muscle tissue in a single isoform. cTnI has several phosphorylation sites and the pattern of phosphorylation changes in response to disease. Phosphorylated cTnI changes the conformation of the protein and modifies its interaction with other troponins and alters the myofilament response to calcium. Assays for Cardiac Troponins I and T (cTnI and cTnT) have become widely accepted tools for diagnosing acute myocardial infarction.

Monoclonals

- Suitable for use in ELISA and WB
- Reacts equally with free cardiac Troponin I (cTnI) and Complexed cTnI (unless otherwise noted)
- Not affected by phosphorylation
- Produced *in vivo*

EPITOPE BINDING

H01250M	a.a. 1-15	* Also works in IHC
H86008M	a.a. 18-28	* Also works in IHC
H01247M	a.a. 148-158	* Also works in IHC, reacts mostly with free cTnI (not complexed)
H86267M	a.a. 169-178	
H86550M	a.a. 186-192	
H86004M	a.a. 190-196	* Also works in IHC
H86307M	a.a. 25-40	
H01340M	a.a. 41-49	
H86207B	a.a. 41-49	* Biotin conjugated
H01246M	a.a. 65-74	* Also works in IHC, reacts with free cTnI only (not complexed)
H86286M	a.a. 86-90	* Also works in IHC
H86241M	a.a. 86-90	
H86596M	a.a. 169-178	* Also works in IHC

Product list | Continued

Troponin I-Cardiac (cTnI) *continued*

Antibody Pairs

- Suitable for use in ELISA
- MAbs produced *in vivo* (unless otherwise noted)

CAPTURE	DETECTION	
H86465M	H86458M	* Also works in WB and IP, no cross-reactivity with skeletal muscle troponin I
K31015M	K31341G	* K31341G is a polyclonal (goat) cTnI, also works in IHC
K31015M	K31342G	* K31342G is a polyclonal (goat) cTnI, also works in IHC
H01326M	H01325M	* Also works in LF
H86285M	H01347M	* Also works in WB
H01395M	H01343M	
H01395M	H86465M	* Also works in WB
H01395M	H86280M	* Also works in WB
H86625M	H01395M	* Also works in WB
H01395M	H01396M	
H01340M	H01396M	

Polyclonals

CATALOG	SOURCE	FORMAT	APPLICATION
K01350G	Goat	Aff.Pur.	EIA
K31342G	Goat	Aff.Pur.	EIA,IHC

* K31342G reacts with region a.a. 69-86

Antigens

R01620	<ul style="list-style-type: none"> • Recombinant (<i>E. coli</i>) • ≥ 95% pure (SDS-PAGE Coomassie staining) • Suitable for use in ELISA
A86853H	<ul style="list-style-type: none"> • Native antigen from human heart • >98% pure (SDS-PAGE) • Suitable for use in ELISA, as antigen for antisera production, and as a tracer for iodination
A38150H	<ul style="list-style-type: none"> • Native antigen from human heart • >98% pure (SDS-PAGE)

Troponin I-Skeletal (sTnI)

The Troponin I subunit sTnI exists in three separate isoforms, two in skeletal muscle fibers and one in cardiac muscle (cTnI). Diagnosis of acute myocardial infarction by Troponin I is dependent on the detection of cTnI only (i.e. the assay should not be cross-reactive to Troponin I-skeletal). Antibodies made against this cardiac isoform are immunologically different from antibodies made against the two skeletal isoforms.

Antibody Pairs

- Cross-reactivity with Cardiac Troponin I is < 1.5%
- Suitable for use in ELISA, WB and for immunopurification
- MAbs produced *in vivo*

CAPTURE	DETECTION
H86121M	H86702M

Antigens

A86824H	<ul style="list-style-type: none"> • Native antigen from human skeletal muscle • >95% pure (SDS-PAGE), lyophilized
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Troponin T-Cardiac (cTnT)

TnT is a tropomyosin-binding subunit which regulates the interaction of Troponin Complex with thin myo-filaments. Two isoforms of TnT are expressed in human skeletal muscle tissue (sTnI and sTnT) and several isoforms are expressed in cardiac specific tissue (cTnT). Although assays for Cardiac Troponin T (cTnT) and Cardiac Troponin I (cTnI) exhibit similar clinical performance in patients with acute coronary syndromes for diagnosis and risk stratification, there are differences in the release and clearance of these proteins from damaged myocytes. Also cTnT has a higher overall tissue concentration and free cytoplasmic concentrations than cTnI, and appears in blood of patients with acute myocardial infarction as a mixture of complexed (cTnT-I-C) and free cTnT.

Antibody Pairs

- No cross-reactivity with human skeletal Troponin T
- Suitable for use in ELISA and WB
- MAbs produced *in vivo*

CAPTURE	DETECTION
H86111M	H01363M
H86111M	H86707M
H86111M	H86906M
H86429M	H86906M
H86429M	H86111M
H86429M	H86519M

Troponin T-Cardiac (cTnT) *continued*

Monoclonals

- Suitable for use in ELISA and IP
- Not cross-reactive with skeletal Troponin T
- Produced *in vivo*

EPITOPE BINDING

H86914M a.a. 146-160

Antigens

- A86813H
- Native antigen from human heart
 - >98% pure (SDS-PAGE)
 - Suitable for use in ELISA, as antigen for antisera production, and as a tracer for iodination

Tumor Necrosis Factor alpha (TNF-alpha)

TNF-alpha is a cytokine involved in systemic inflammation and implicated in post-ischemic myocardial dysfunction and heart failure. Concentrations of TNF-alpha reflect the impairment of cardiac and renal function in patients with CAD. Metabolic syndrome and diabetes are also associated with higher plasma concentrations of TNF-alpha and its receptors.

Antibody Pairs

- Suitable for use in ELISA and IHC
- Inhibits the biological activity of TNF-alpha in various biological fluids

CAPTURE DETECTION

H86410M H86650M

Uroguanylin

Uroguanylin is a novel natriuretic hormone system and participates in the regulation of salt and water homeostasis. It is synthesized as prohormone and requires proteolytic processing similar to the other natriuretic peptides. It is also activated in heart failure, but acts on a different cyclic GMP pathway to ANP and BNP.

Polyclonals

CATALOG	SOURCE	FORMAT	APPLICATION
D01240R	Rabbit	Neat	EIA, IHC, RIA, WB

* D01240R is specific for the circulating form

Vitamin D

Vitamin D is a fat-soluble precursor of the steroid hormone calcitriol that is essential for bone health and mineral metabolism. Total Vitamin D assays measure the level of both 25 OH Vitamin D3 (calcidiol) and 1,25-Dihydroxy Vitamin D3 (calcitriol). Serum 25 OH Vitamin D3 is the most stable circulating form of vitamin D and a low blood level suggests that a person is not getting enough exposure to sunlight or enough dietary vitamin D. 1,25-Dihydroxy Vitamin D3 regulates the expression of hundreds of genes and a low level is indicative of kidney failure.

Antibody and Antigen Pairs

ANTIBODY	ANTIGEN	
K01214M	A01697B	*Lateral Flow
K01214M	A01698B	*ELISA and RIA

Monoclonals

- Suitable for use in ELISA
 - Produced in cell culture
- K24123M *MAb to 1,25 (OH)₂ Vitamin D3
 K24124M *MAb to 25-OH Vitamin D3 Lyophilized
 K24124M-LQ *MAb to 25-OH Vitamin D3 Liquid

Antigens

- A01694D
- ≥ 99% Pure (HPLC)
 - 25-OH Vitamin D3 BSA Conjugate
- A01409H
- > 99% Pure (HPLC)
 - 1,25-Dihydroxy Vitamin D3
- A50674H
- > 95% Pure (SDS-PAGE)
 - Vitamin D Binding Protein (GC Globulin)



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