Cardiac & Metabolic Markers
for Assay Development
ISO Certified

www.MeridianBioscience.com/LifeScience
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 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 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.
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Meridian Life Science, Inc. is a leading large scale manufacturer of:

- Antibodies
- Viral antigens
- Recombinant proteins
- PCR enzymes
- Nucleotides
- Critical assay reagents

Meridian has been providing innovative life science solutions and building trusted partnerships for over 40 years. Meridian’s focus is to offer products and services that help to advance the development of diagnostic assays and vaccine development.

- Commercial scale manufacturing of antigens and antibodies with protein purification expertise
- 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
Extensive Capabilities and Services

**Immunodiagnostics**
- Antigens & Antibodies
- Recombinant Proteins
- Blocking Reagents

**Molecular Diagnostics**
- Nucleotides
- Enzymes
- qPCR/PCR reagents
- NGS reagents

**Contract Services**
- Antigens & Antibodies
- Cell & Viral Banking
- PCR/qPCR Assay Development

Global Presence

**MERIDIAN BIOSCIENCE, INC.**
Parent Company | Founded in 1977 | Nasdaq: VIVO
Headquartered in Cincinnati, OH | 650+ Employees | Presence in 70+ Countries.

**America**

**MEMPHIS, TN**
Manufacturing & Sales
Viral Antigens
Recombinant Proteins
*In Vitro* Antibodies
HAMA Blocking Reagents

**BILDERICA, MA**
Manufacturing & Sales
LeadCare Diagnostic Product Line

**BOCA RATON, FL**
Manufacturing
Ascites Production
(in BALB/c or CAF1)

**BOSTON, MA**
Sales & Distribution

**Europe**

**LONDON, UK**
PCR Manufacturing & Sales
PCR/qPCR Molecular Reagents

**LUCKENWALDE, GERMANY**
Manufacturing
Large Scale Nucleotides
PCR Enzymes

**PARIS, FRANCE**
EU Diagnostics Sales

**WATERLOO, BELGIUM**
EU Diagnostics Sales

**MILAN, ITALY**
EU Diagnostics Sales

**Asia Pacific**

**SYDNEY, AUSTRALIA**
Sales & Distribution
PCR R&D

**SINGAPORE**
Sales & Distribution

**BEIJING, CHINA**
Sales & Distribution
Wholly Owned
Subsidiary Office
**Infectious disease**

**ToRCH**
- Toxo
- Rubella
- CMV
- HSV-1, 2

**TROPICAL**
- Nipah
- Dengue 1, 2, 3, 4
- Chikungunya
- Malaria
- Chagas
- Leishmaniasis
- Leptospirosis
- Japanese Encephalitis Virus
- Newcastle disease
- Yellow Fever
- Zika
- Lyme disease
- Ebola

**CHILDHOOD**
- Mumps
- Rubeola
- EBV
- Coxsackie
- Rotavirus
- RSV
- Parvo B19
- VZV

**STDs**
- HAV
- HBV
- HCV
- HSV-1, 2
- HIV-1, 2
- HPV
- Chlamydia
- Neisseria
- Syphilis

**RESPIRATORY**
- RSV
- Influenza A,B
- Parainfluenza
- Mycoplasma pneumoniae
- Chlamydia pneumoniae
- Legionella pneumophila
- Mycobacterium tuberculosis
- Streptococcus
- Staphylococcus
- SARS Coronavirus
- Adenovirus

**FOOD & WATER**
- Hepatitis A
- Campylobacter jejuni
- E. coli
- Legionella
- Salmonella
- Shigella
- Bacillus anthracis
- Clostridium
- Listeria
- Streptococcus
- Staphylococcus
- Giardia
- Cryptosporidium

**GASTROINTESTINAL**
- Norovirus
- Astrovirus
- Adenovirus
- Rotavirus
- Clostridium difficile
- Cryptosporidium
- Campylobacter
- E. coli
- Salmonella
- Giardia lamblia
- H. pylori
Cancer
- PIVKA-II
- CA125
- CA15-3
- CA19-9
- CA72-4
- CA50
- CA242
- CEA
- Cyfra 21-1
- erbB-2/HER2
- AFP

Cardiac
- EGFR
- HE4
- NSE
- P53
- PMA
- PAP
- PSA
- PSMA
- S-100
- B2M
- Thyroglobulin
- Troponin I, T
- Myoglobin
- BNP
- NT-proBNP
- CRP
- PCT
- CK-MB
- Apo A,B,E
- NSE
- FABP
- SAH
- Galectin-3

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

Hormones
- LH, FSH, hCG, hGH
- AMH
- Cortisol, Estradiol
- Insulin, C-peptide
- Prolactin
- Progesterone
- PTH

Drugs of Abuse
- Amphetamine
- Barbital
- Benzodiazepine
- Buprenorphine
- Cocaine
- Cotinine
- EDDP
- Fentanyl
- Ketamine
- K2
- MDMA (Ecstasy)
- Methadone
- Methamphetamine
- Morphine

Allergens
- Animal
- Dust Mite
- Mold
- Pollen

Autoimmune
- Jo-1
- PCNA
- pANCA
- cANCA
- Sm Ag
- dsDNA
- La (SS-B)
- Ro (SS-A)

- Histone
- GMB
- C1q
- Scl-70
- B2-Gly-1
- Cathepsin G
- Calprotectin

- Cystatin-C
- D-Dimer
- MPO
- Fibrinogen
- EGF
- sCD40L
- CD54
- Lp-PLA2
- PAPP-A
- Vitamin D
- Renin
# Leading Cardiac Markers

## Antibodies & Matched Pairs

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

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Assays</th>
</tr>
</thead>
<tbody>
<tr>
<td>H86245M</td>
<td>MAb to BNP (Capture), ELISA &amp; WB</td>
<td></td>
</tr>
<tr>
<td>H86507M</td>
<td>MAb to BNP (Detection), ELISA &amp; WB</td>
<td></td>
</tr>
<tr>
<td>H86451M</td>
<td>MAb to NT-proBNP a.a. 61-76 (Capture), ELISA &amp; WB</td>
<td></td>
</tr>
<tr>
<td>H86912M</td>
<td>MAb to NT-proBNP a.a. 1-12 (Detection), ELISA &amp; WB</td>
<td></td>
</tr>
</tbody>
</table>

* Recognizes BNP.

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Assays</th>
</tr>
</thead>
<tbody>
<tr>
<td>H86507M</td>
<td>MAb to BNP (Detection), ELISA &amp; WB</td>
<td></td>
</tr>
</tbody>
</table>

* Recognizes BNP, proBNP and NT-proBNP.

### C-Reactive Protein (CRP)

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Assays</th>
</tr>
</thead>
<tbody>
<tr>
<td>M86005M</td>
<td>MAb (Capture), ELISA</td>
<td></td>
</tr>
<tr>
<td>M01239M</td>
<td>MAb (Detection), ELISA</td>
<td></td>
</tr>
</tbody>
</table>

* Recognizes antigen in the presence and in the absence of Ca²⁺.

### Creatine Kinase (CK)

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Assays</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAC01-288</td>
<td>MAb to CK-BB, ELISA</td>
<td></td>
</tr>
<tr>
<td>H31795M</td>
<td>MAb to CK-MB (Capture/Detection), ELISA &amp; LF</td>
<td></td>
</tr>
<tr>
<td>K31315G</td>
<td>PAb (Goat) to CK-MM (Capture/Detection), ELISA &amp; LF</td>
<td></td>
</tr>
</tbody>
</table>

* Abs can be used as capture or detection in a sandwich assay.

### Cystatin C

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Assays</th>
</tr>
</thead>
<tbody>
<tr>
<td>H86023M</td>
<td>MAb (Capture), ELISA</td>
<td></td>
</tr>
<tr>
<td>H86218M</td>
<td>MAb (Detection), ELISA</td>
<td></td>
</tr>
<tr>
<td>H86013M</td>
<td>MAb (Alternate Detection), ELISA</td>
<td></td>
</tr>
</tbody>
</table>

### D-dimer

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Assays</th>
</tr>
</thead>
<tbody>
<tr>
<td>N01265M</td>
<td>MAb, ELISA</td>
<td></td>
</tr>
<tr>
<td>N01273M</td>
<td>MAb (Capture), ELISA &amp; WB</td>
<td></td>
</tr>
<tr>
<td>N01274M</td>
<td>MAb (Detection), ELISA &amp; WB</td>
<td></td>
</tr>
<tr>
<td>N01270M</td>
<td>MAb (Capture), ELISA, LF &amp; WB</td>
<td></td>
</tr>
<tr>
<td>N01269H</td>
<td>MAb (Detection), ELISA, LF &amp; WB</td>
<td></td>
</tr>
</tbody>
</table>

* 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.

### Fatty Acid Binding Protein (FABP)

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Assays</th>
</tr>
</thead>
<tbody>
<tr>
<td>H01324M</td>
<td>MAb (Capture), ELISA &amp; LF</td>
<td></td>
</tr>
<tr>
<td>H01323M</td>
<td>MAb (Detection), ELISA &amp; LF</td>
<td></td>
</tr>
</tbody>
</table>

### Fibrinogen

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Assays</th>
</tr>
</thead>
<tbody>
<tr>
<td>N86413M</td>
<td>MAb, ELISA &amp; WB</td>
<td></td>
</tr>
</tbody>
</table>

### Galectin-3

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Assays</th>
</tr>
</thead>
<tbody>
<tr>
<td>K01361M</td>
<td>MAb, ELISA, WB &amp; IHC</td>
<td></td>
</tr>
<tr>
<td>K01381M</td>
<td>MAb, ELISA</td>
<td></td>
</tr>
</tbody>
</table>

* Reacts with human and mouse Galectin-3.

### Glycogen Phosphorylase Isoenzyme BB (GPBB)

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Assays</th>
</tr>
</thead>
<tbody>
<tr>
<td>H86807M</td>
<td>MAb, ELISA &amp; WB</td>
<td></td>
</tr>
</tbody>
</table>

### Lipoprotein-Associated Phospholipase A2 (Lp-PLA2)

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Assays</th>
</tr>
</thead>
<tbody>
<tr>
<td>H01390M</td>
<td>MAb (Capture), ELISA</td>
<td></td>
</tr>
<tr>
<td>H01393M</td>
<td>MAb (Detection), ELISA</td>
<td></td>
</tr>
<tr>
<td>H01389M</td>
<td>MAb (Alternate Detection), ELISA</td>
<td></td>
</tr>
<tr>
<td>H01392M</td>
<td>MAb (Capture), ELISA</td>
<td></td>
</tr>
<tr>
<td>H01393M</td>
<td>MAb (Detection), ELISA</td>
<td></td>
</tr>
</tbody>
</table>

* 50% cross reactivity with CK-MB and < 1% cross reactivity with CK-BB.

* 52% cross reactivity with CK-MB, and no cross reactivity with CK-BB.

* 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.

* Reacts with high molecular weight fibrin degradation products. Does not cross react with fibrinogen or D-monomer.
Myeloperoxidase (MPO)
H87207M  MAb, ELISA & IHC
* Recognizes both native and recombinant human MPO.

Myoglobin (MYO)
H86142M  MAb (Capture), ELISA
H86703M  MAb (Detection), ELISA
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 katalcin.

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)

<table>
<thead>
<tr>
<th>Brain Natriuretic Peptide (BNP), ProBNP + NT-ProBNP</th>
<th>Fibrinogen</th>
</tr>
</thead>
<tbody>
<tr>
<td>A24760H ProBNP, recombinant protein <em>(E. coli)</em> of N-terminal (a.a. 1-76, MW 8.39 kDa)</td>
<td>A95150H From human plasma, MW 340kDa, isoelectric point of 5.1–6.3</td>
</tr>
<tr>
<td>A01261H NT-proBNP, recombinant protein <em>(E. coli)</em> of N-terminal (MW 8.589 kDa). Contains an additional methionine residue at the N-terminus (in comparison with native NT-proBNP)</td>
<td></td>
</tr>
<tr>
<td>N86583H BNP and NT-proBNP Free Plasma, from normal human plasma, used for preparation of any proBNP-related standards and calibrators</td>
<td></td>
</tr>
<tr>
<td>A97201H From human fluids and reactive with monospecific goat anti-CRP, ≥ 95% pure (SDS-PAGE)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Creatine Kinase (CK)</th>
<th>Lp-PLA2</th>
</tr>
</thead>
<tbody>
<tr>
<td>VTI830 CK-BB, produced in cell culture (yeast), represents native full length protein and is enzymatically active</td>
<td>A01413H Recombinant <em>(E.coli)</em>, &gt; 95% pure (SDS-PAGE)</td>
</tr>
<tr>
<td>VTI840 CK-MB Isoenzyme Type I, produced in cell culture (yeast), enzymatically active</td>
<td></td>
</tr>
<tr>
<td>VTI810 CK-MB Isoenzyme Type II, produced in cell culture (yeast), represents native full length protein and is enzymatically active</td>
<td></td>
</tr>
<tr>
<td>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</td>
<td></td>
</tr>
<tr>
<td>VTI820 CK-MM Isoenzyme Type III, produced in cell culture (yeast), represents full length protein and is enzymatically active</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cystatin-C</th>
<th>Myeloperoxidase (MPO)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A01259H From human urine, 95.5% pure</td>
<td>A38104H From human neutrophils, &gt; 96% pure (SDS-PAGE), approximate activity of 1,100 Units/mg Protein</td>
</tr>
<tr>
<td>A01435H From human urine, 95% pure (SDS-PAGE), major band at ~13 kDa, suitable for TIA applications</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Troponin (cTnT &amp; cTnI)</th>
<th>Vitamin D</th>
</tr>
</thead>
<tbody>
<tr>
<td>A01367H Recombinant protein <em>(E. coli)</em> representing a.a. 3-116 which corresponds to the unprocessed human protein, contains a 6-His tag at N-terminal</td>
<td>A01694D 25-OH Vitamin D3 BSA Conjugate, ≥ 99% Pure (HPLC)</td>
</tr>
<tr>
<td>A86111H I-T-C Complex, from human heart, formed by combining cardiac Troponin T, I and C in a molar ratio of 1:1:1</td>
<td>A01698B Vitamin D Biotin Conjugate, &gt; 95.7% Pure (HPLC)</td>
</tr>
<tr>
<td>A86813H cTnT, from human heart, &gt; 98% pure (SDS-PAGE)</td>
<td>A01697B Vitamin D BSA Conjugate</td>
</tr>
<tr>
<td>A38150H cTnI, from human heart, &gt; 98% pure (SDS-PAGE), single band ~24 kDa</td>
<td>A50674H Vitamin D Binding Protein (Gc-Globulin), &gt; 95% Pure (SDS-PAGE)</td>
</tr>
<tr>
<td>A38111H From human retroplacental blood. Heterotetrameric complex consisting of PAPP-A and pro-MBP subunits, &gt; 85% pure (SDS-PAGE), lyophilized</td>
<td>A01409H 1,25 Dihydroxy Vitamin D3, &gt; 99% Pure (HPLC)</td>
</tr>
</tbody>
</table>

| 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 | | |

| 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) | | |
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 – Immunoglobin G
IgM – Immunoglobin 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
MAb – Monoclonal antibody
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

<table>
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<td>H01297M</td>
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</tbody>
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Antigens

• 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

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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**

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**Antigens**

| H8P01-767 | • Native antigen from apheresis plasma  
| Low B12 and low folate |

**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 |

**Antigens**

| A01310S | • Synthetic antigen (Asn-Arg-Val-Tyr-Val-His-Pro-Phe-OH)  
| > 98% pure (HPLC), lyophilized |

**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 |  

**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.
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

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</table>

Antigens

A50302H  • 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

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Antigens

A34129H  • 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

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Antigens

A50120H  • Native antigen from human plasma (VLDL)
• ≥ 95% pure (SDS-PAGE)
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.

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

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

**CATALOG**

**DETECTION**

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**Polyclonals**

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<td>K24410R</td>
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</table>

**Antigens**

- proBNP recombinant (E. coli)
- Suitable for enzyme linked fluorescent assay
- > 95% pure (Silver Staining SDS-PAGE)
- proBNP recombinant (E. coli)
- > 95% pure (SDS-PAGE)
- proBNP recombinant (E. coli)
- 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)
- proBNP, C-terminal (synthetic)
- Represents amino acids 1-32
- > 95% pure (HPLC), lyophilized
- NT-proBNP recombinant (E. coli)
- > 95% pure (Silver Staining SDS-PAGE)
- Suitable for enzyme linked fluorescent assay
- NT-proBNP recombinant (E. coli)
- Suitable for use in ELISA
- > 95% pure (Tricine SDS-PAGE)
- proBNP, N-terminal recombinant (synthetic)
- Represents a.a.1-76
- > 95% pure (HPLC), lyophilized
- proBNP, N-terminal recombinant (E. coli)
- 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.

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**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.

<table>
<thead>
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**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.

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</table>

**Antigens**

A33123H • Native Human Collagen Type III
Sourced from placental villi, > 90% pure (SDS-PAGE)
Suitable as an 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.

<table>
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**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.

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**Polyclonals**

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**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.
C-Reactive Protein (CRP) *continued*

**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

- Produced *in vivo*
  
  M01319B  * Biotin conjugated
  M01319M
  M01295M  * No applications have been tested

**Polyclonals**

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<td>C. Egg</td>
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**Antigens**
- Recombinant (*P. pastoris*)
- Full length protein with amino acid sequence identical to the native enzyme
- > 95% pure (SDS-PAGE)
- Suitable for use in ELISA
  
  H6C01-323  * 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.

**Monoclonals**
- Suitable for use in ELISA and LF
- Produced *in vivo*
  
  H01298M
  H01299M

**Antibody Pairs**
- Suitable for use in ELISA and LF
- MAbs produced *in vivo*
  
  CAPTURE   DETECTION
  K31315G   K31315G  * K31315G is a polyclonal Goat anti-CK-MM
  H01330M   H01329M

**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*
  
  MAC01-28B

**Antigens**
- Recombinant (*P. pastoris*), Isoenzyme Type I
- Suitable for use in ELISA
  
  VTIB40
  VTIB10
Creatine Kinase MM (CK-MM) continued

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

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<tr>
<td>G5C02-766</td>
<td>Goat</td>
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<td>H01310G</td>
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<td>Purified</td>
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</table>
| K31315G | Goat | Aff.Pur. | EIA,LF *

* K31315G pairs with MAb to CK-MB H31796M

Antigens

VTI850
- Recombinant (P. pastoris), Isoenzyme Type I
- Full length protein without the C-terminal lysine on both subunits
- Suitable for use in WB and ELISA

VTI820
- Recombinant (P. pastoris), Isoenzyme Type I
- Identical amino acid sequence to native protein
- Suitable for use in ELISA

A31315H
- Native antigen from human skeletal muscle
- > 95% pure (SDS-PAGE)

A38925H
- Native antigen from human heart, lyophilized

CX3CR1

A receptor for fractalkine, a novel membrane-bound chemokine that is mainly expressed in endothelial cells in myocardial ischaemia and heart failure. When bound to CX3CR1, fractalkine acts as an adhesion molecule and can enable leucocyte adhesion. Under inflammatory conditions, this bound form can be cleaved to release a soluble chemokine implicated in a number of disease states, including atherosclerosis, glomerulonephritis, and cerebral ischaemia.

Polyclonals

<table>
<thead>
<tr>
<th>CATALOG</th>
<th>SOURCE</th>
<th>FORMAT</th>
<th>APPLICATION</th>
</tr>
</thead>
</table>
| K88201R | Rabbit | Aff.Pur. | IHC, WB *

* Extracellular Loop V28

K88093R | Rabbit | Aff.Pur. | FC, IHC(p), WB *

* N-Terminal V28

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

Polyclonals

<table>
<thead>
<tr>
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<th>SOURCE</th>
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<tbody>
<tr>
<td>H01371C</td>
<td>C. Egg</td>
<td>Aff.Pur.</td>
<td>N/A</td>
</tr>
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</table>

Antigens

A01259H
- Native antigen from human urine
- 95.5% Pure

A01419H
- Native antigen from human urine

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
**Endothelin-1**

Endothelin-1 is produced by the endothelium in response to Angiotensin II, inflammatory mediators, and vascular shear stress, this protein is responsible for vasoconstriction, activation of reactive oxygen species, and ventricular remodeling. Clinical trials have demonstrated the potential benefits of endothelin antagonists for patients with essential hypertension, pulmonary hypertension and heart failure.

**Monoclonals**
- Suitable for IRMA assays and IHC on frozen sections
- Specific for Endothelin ET-1
- Produced in cell culture

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

**D-Dimer continued**

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

**Endothelial Nitric Oxide Synthase (eNOS)**

Nitric oxide synthases are a family of enzymes catalyzing the production of nitric oxide (NO) from L-arginine. eNOS specifically generates NO in blood vessels which serves as a vasoprotective factor enabling endothelial cells to fight off vascular disease. In patients with cardiovascular risk factors such as hypertension, hypercholesterolemia, diabetes mellitus, or chronic smoking, the production of reactive oxygen species is stimulated in the vascular wall leading to eNOS dysfunction and subsequent CVD.

**Monoclonals**
- Specifically recognizes eNOS phosphorylated at serine 1177
- Suitable for use in ELISA and WB
- Produced in vivo

**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**
- Recombinant (P. pastoris)
- Suitable for use in WB
- >95% pure (SDS-PAGE)

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

**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.
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

Antigen Pairs

<table>
<thead>
<tr>
<th>Antigen ID</th>
<th>Catalog Number</th>
<th>Format</th>
<th>Application</th>
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<tr>
<td>A86865H</td>
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<td></td>
</tr>
<tr>
<td>R01617</td>
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</table>

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. Gherlin also has potential as a marker of abnormal metabolism in cardiac failure.

Monoclonals
- Suitable for use in ELISA
- Produced in vivo

K01361M

K01381M

K01382M

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
Lipoproteins HDL, LDL, VLDL Receptor

Leptin

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

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

Antibody Pairs
- Suitable for use in ELISA
- MAbs produced in vivo
CAPTURE DETECTION
H01291M H01292M * H01291M is an MAb to hemoglobin

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)

Leptin

A 16-kDa protein hormone that plays a key role in regulating energy intake and energy expenditure, including appetite/hunger and metabolism. It has been proposed that leptin is an important link between obesity and the development of cardiovascular embolism. An association between serum leptin concentrations and various cardiovascular risks, including stroke, chronic heart failure and myocardial infarction has been observed.

Antigens
A42327H
- Recombinant (E. coli)
- > 95% pure (RP-HPLC and SDS-PAGE)

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
- Recognizes an epitope in the region of repeat #1 of the ligand binding region
- Suitable for WB, FC, IFA
H44070M
- MAb to LDL Receptor-Related Protein (LRP)
- Will not block ligand binding
- Suitable for use in ELISA, WB, IHC, and FC
H63650M
Lipoproteins HDL, LDL, VLDL Receptor continued

Antigens

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<td>A94005H</td>
<td>Native HDL from human plasma</td>
</tr>
<tr>
<td></td>
<td>&gt; 95% of total lipoprotein content by electrophoresis</td>
</tr>
<tr>
<td>A95132H</td>
<td>Native HDL from human normolipidemic plasma</td>
</tr>
<tr>
<td></td>
<td>Devoid of VLDL, IDL and LDL</td>
</tr>
<tr>
<td></td>
<td>Ultracentrifugation at density 1.063–1.210</td>
</tr>
<tr>
<td>A95322H</td>
<td>Native HDL 2 (HDL2) Subfraction from human normolipidemic plasma</td>
</tr>
<tr>
<td></td>
<td>Devoid of VLDL, IDL, LDL, and HDL3</td>
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<tr>
<td></td>
<td>Ultracentrifugation density at 1.063 - 1.125</td>
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<tr>
<td>A95332H</td>
<td>Native HDL 3 (HDL3) Subfraction from human normolipidemic plasma</td>
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<td>Devoid of VLDL, IDL, LDL, and HDL2</td>
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<tr>
<td></td>
<td>Ultracentrifugation density at 1.120–1.21g/mL</td>
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<td>A34275H</td>
<td>Reconstituted HDL from human plasma</td>
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<tr>
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<td>A complex of human Apolipoprotein A-I and 1-palmitoyl-2-oleyl</td>
</tr>
<tr>
<td></td>
<td>phosphatidylcholine prepared at a molar ratio of 1 to 100 by the</td>
</tr>
<tr>
<td></td>
<td>cholate removal method</td>
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<tr>
<td>A95124H</td>
<td>Native LDL from human plasma</td>
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<td>&gt; 95% pure (total lipoprotein content by electrophoresis)</td>
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<td>Suitable for use in IEP</td>
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<tr>
<td>A34013H</td>
<td>Native VLDL from human plasma</td>
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<tr>
<td></td>
<td>Devoid of IDL, LDL, and HDL</td>
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<td>Purification by ultracentrifugation at density 1.006</td>
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<tr>
<td>A50261H</td>
<td>Native VLDL from human plasma</td>
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<tr>
<td></td>
<td>&gt; 95% of total lipoprotein content (SDS-PAGE)</td>
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<td>Suitable for use in ELISA and IEP</td>
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</table>

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: H01390M
  - DETECTION: H01393M
  - H01390M
  - H01389M
  - H01392M
  - H01393M

Polyclonals

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<td>Sheep</td>
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<td>EIA, IHC, WB</td>
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<td>H01333S</td>
<td>Sheep</td>
<td>Aff.Pur.</td>
<td>EIA, IHC, WB</td>
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</table>

Antigens

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

- Lp(a) Calibrator
- Sourced from defibrinated human plasma
- Suitable for use in Turbidimetry
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
  - H31572M K31015G
  - H86142M H86703M
  - H31927M K31015G
  - H01328M H01327M
  - H86703M H86142M
  - K31015G is a polyclonal (goat)
  - H31927 is produced in cell culture
  - Also works in LF

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.

Antibody Pairs

- Suitable for use in ELISA
- Produced in vivo (unless stated otherwise)
- CAPTURE DETECTION
  - H87207M *Also works in WB, IHC, FC and produced in cell culture
  - K86005M *Also works in WB
  - K86006M
  - K86016M *Also works in WB

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). MDA-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.

Antigen

- A01251H • Recombinant (E. coli)
  - Non-glycosylated polypeptide chain containing 76 a.a.
  - > 96% pure (RP-HPLC and SDS-PAGE), lyophilized

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

- A01462H • Native antigen from human neutrophils
- A38104H • Native antigen from human neutrophils
- A50181H • > 96% pure (SDS-PAGE), lyophilized

Antibody Pairs

- Suitable for use in ELISA
- MAbs produced in vivo (unless noted otherwise)
- CAPTURE DETECTION
  - H31572M K31015G
  - H86142M H86703M
  - H31927M K31015G
  - H01328M H01327M
  - H86703M H86142M
  - K31015G is a polyclonal (goat)
  - H31927 is produced in cell culture
  - Also works in LF

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

Polyclonals

- CATALOG SOURCE FORMAT APPLICATION
  - K97120G Goat Neat, Lyophilized EIA, WB
  - K97120P Goat HRP, Lyophilized EIA, WB

Antigens

- A01251H • Recombinant (E. coli)
  - Non-glycosylated polypeptide chain containing 76 a.a.
  - > 96% pure (RP-HPLC and SDS-PAGE), lyophilized

Polyclonals

- CATALOG SOURCE FORMAT APPLICATION
  - K50891R Rabbit Purified EIA, IEP, WB

Antigen

- A01462H • Native antigen from human neutrophils
  - Suitable for use in ELISA

Monoclonals

- Suitable for use in WB, IHC, and FC
- Produced in vivo (unless stated otherwise)
  - H87207M *Also works in WB, IHC, FC and produced in cell culture
  - K86005M *Also works in WB
  - K86006M
  - K86016M *Also works in WB

Polyclonals

- CATALOG SOURCE FORMAT APPLICATION
  - K97120G Goat Neat, Lyophilized EIA, WB
  - K97120P Goat HRP, Lyophilized EIA, WB

Antigen

- A01251H • Recombinant (E. coli)
  - Non-glycosylated polypeptide chain containing 76 a.a.
  - > 96% pure (RP-HPLC and SDS-PAGE), lyophilized

Antibody Pairs

- Suitable for use in ELISA
- MAb produced in vivo (unless noted otherwise)
- CAPTURE DETECTION
  - H31572M K31015G
  - H86142M H86703M
  - H31927M K31015G
  - H01328M H01327M
  - H86703M H86142M
  - K31015G is a polyclonal (goat)
  - H31927 is produced in cell culture
  - Also works in LF
Myoglobin (MYO) continued

**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

**Antitgens**
- Native antigen from human brain
- > 95% pure (SDS-PAGE)
- Suitable for use in ELISA and WB

**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.

**Antitgens**
- Recombinant (CHO cells)
- > 95% pure (SDS-PAGE)
- Suitable for use in WB

**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.

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

**Monoclonals**
- Produced in vivo

**Antitgens**
- Recombinant (E. coli)
- >95% pure (SDS-PAGE), 80 ± 5% active by uPA titration
Platelet Factor IV (PF-IV)

PF-IV is a small cytokine belonging to the CXC chemokine family and is thought to play a role in wound repair and inflammation. Recent studies have demonstrated its potential as a marker of platelet activation in patients with acute MI.

Antigens

A95841H
- Native antigen from supernatant of thrombin-activated platelets (human)
- > 95% pure (SDS-PAGE)

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

E86509M E01261M
E86141M E86910M
E01345M E01344M
E01343M E01261M

* Pair also detects dimeric PAPP-A

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

E86561M E86494M
E86561M E86420M
E86813M E86112M
E01291M E86494M
E01330M E01331M
E01341M E01340M
E01342M E01340M
E86412M E86813M
E86412M E86813M
E01334M E01340M
E01342M E01340M

* Also works in LF assays
* Also detects katacalcin
* Also detects katacalcin and works in LF assays
### Serum Amyloid A (SAA) continued

#### Antigens

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<th>Format</th>
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<td>A01367H</td>
<td>Rabbit</td>
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<td>EIA, IFA, IHC, RIA</td>
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</tbody>
</table>

#### 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

<table>
<thead>
<tr>
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<th>Source</th>
<th>Format</th>
<th>Application</th>
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<td>T40331R</td>
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</tbody>
</table>

#### 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
- MAb produced in vivo

- E83802M
- Recognizes human insulin

#### Antibody Pairs

- E86209M
- E86102M  *E86102M recognizes human insulin
- E86104M
- E86210M  *E86102M recognizes human insulin
- E01339M
- E83102M
- 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

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<td>E01364M</td>
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<tr>
<td>E01366M</td>
<td>E01363M</td>
</tr>
</tbody>
</table>
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
  - Q86403M
  - Works in IHC
  - 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

<table>
<thead>
<tr>
<th>Capture</th>
<th>Detection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q86006M</td>
<td>Q86610M</td>
</tr>
<tr>
<td>Q86003M</td>
<td>Q86610M</td>
</tr>
</tbody>
</table>

Antigens
- 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
- Native S-100b from human brain
  - > 95% pure, lyophilized
  - Suitable for ELISA, as an immunogen for antiserum production and tracer for iodination

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.

S-Adenosyl-Homocysteine (SAH)

SAH 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

<table>
<thead>
<tr>
<th>Capture</th>
<th>Detection</th>
</tr>
</thead>
<tbody>
<tr>
<td>H01381M</td>
<td>H01383M</td>
</tr>
<tr>
<td>H01382M</td>
<td>H01384M</td>
</tr>
<tr>
<td>H86177M</td>
<td>H86180M</td>
</tr>
<tr>
<td>H86180M</td>
<td>H86177M</td>
</tr>
<tr>
<td>H86177M</td>
<td>H86178M</td>
</tr>
<tr>
<td>H86178M</td>
<td>H86177M</td>
</tr>
</tbody>
</table>

Antigens
- Recombinant (E. coli)
  - 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
- Recombinant (E. coli)
  - >98% pure (RP-HPLC and SDS-PAGE), lyophilized
Thrombin

Thrombin is a multifunctional protease with procoagulant, pro-inflammatory, and pro-apoptotic effects. Thrombin may adversely affect the endothelium and cardiomyocytes, and it has recently emerged as a possible mediator of ischemia-reperfusion injury.

Monoclonals

- Suitable for use in ELISA
- Produced in cell culture

N95905M

Thrombospondin

Thrombospondins belong to the group of matricellular proteins, which are non-structural extracellular matrix proteins that modulate cell–matrix interactions and cell function in injured tissues or tumors. The expression of thrombospondins strongly increases during cardiac stress or injury indicating an important role for them during cardiac remodelling. It specifically has been suggested to be a marker of acute coronary syndrome.

Antigens

A50163H

- Native antigen sourced from human platelets
- > 95% pure (SDS-PAGE), lyophilized

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

<table>
<thead>
<tr>
<th>CATALOG</th>
<th>SOURCE</th>
<th>FORMAT</th>
<th>APPLICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>K63250R</td>
<td>Rabbit</td>
<td>Purified</td>
<td>EIA, IHC, WB</td>
</tr>
</tbody>
</table>

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

- Native antigen from human heart tissue
- >95% pure (SDS-PAGE)

A86111H

- 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 (cTnl) 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

- Native antigen from human heart tissue
- > 98% pure (SDS-PAGE), lyophilized
- Suitable for use as a standard, immunogen for antisera production, tracer for iodination

Troponin I-Cardiac (cTnl)

As part of the troponin complex, cTnl 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. cTnl has several phosphorylation sites and the pattern of phosphorylation changes in response to disease. Phosphorylated cTnl changes the conformation of the protein and modifies its interaction with other tropinins and alters the myofilament response to calcium. Assays for Cardiac Troponins I and T (cTnl 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**

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

**Antibody Pairs**

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

**CAPTURE**

<table>
<thead>
<tr>
<th>H86465M</th>
<th>H86458M</th>
<th>* Also works in IHC</th>
</tr>
</thead>
<tbody>
<tr>
<td>K31015M</td>
<td>K31341G</td>
<td>* K31341G is a polyclonal (goat) cTnI, also works in IHC</td>
</tr>
<tr>
<td>K31015M</td>
<td>K31342G</td>
<td>* K31342G is a polyclonal (goat) cTnI, also works in IHC</td>
</tr>
<tr>
<td>H01326M</td>
<td>H01325M</td>
<td>* Also works in LF</td>
</tr>
<tr>
<td>H86285M</td>
<td>H01347M</td>
<td>* Also works in WB</td>
</tr>
<tr>
<td>H01395M</td>
<td>H01343M</td>
<td></td>
</tr>
<tr>
<td>H01395M</td>
<td>H86465M</td>
<td>* Also works in WB</td>
</tr>
<tr>
<td>H01395M</td>
<td>H86280M</td>
<td>* Also works in WB</td>
</tr>
<tr>
<td>H86625M</td>
<td>H01395M</td>
<td>* Also works in WB</td>
</tr>
<tr>
<td>H01395M</td>
<td>H01396M</td>
<td></td>
</tr>
<tr>
<td>H01340M</td>
<td>H01396M</td>
<td></td>
</tr>
</tbody>
</table>

**DETECTION**

| H86465M | H86458M | * Also works in IHC |

**Polyclonals**

<table>
<thead>
<tr>
<th>CATALOG</th>
<th>SOURCE</th>
<th>FORMAT</th>
<th>APPLICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>K0130G</td>
<td>Goat</td>
<td>Aff.Pur.</td>
<td>EIA</td>
</tr>
<tr>
<td>K31342G</td>
<td>Goat</td>
<td>Aff.Pur.</td>
<td>EIA,IHC</td>
</tr>
</tbody>
</table>

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

Antigens

- R01620
  - Recombinant (E. coli)
  - ≥ 95% pure (SDS-PAGE, Coomassie staining)
  - Suitable for use in ELISA

- A01429H
  - Recombinant (P. pastoris) Complex of cTnI (fragment) and cTnC (full length)
  - > 85% pure (determined by SDS-PAGE)
  - Suitable for use in ELISA and WB

- A86853H
  - Native antigen from human heart
  - >98% pure (SDS-PAGE)
  - Suitable for use in ELISA, as antigen for antiserum production, and as a tracer for iodination

- A38150H
  - Native antigen from human heart
  - >98% pure (SDS-PAGE)

- A86860H
  - Calibrator Set using native antigen from human heart
  - Calibrators correspond to 0, 0.5, 1, 3, 10, 50, and 100 ng/mL Cardiac Troponin I

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**

<table>
<thead>
<tr>
<th>H86121M</th>
</tr>
</thead>
<tbody>
<tr>
<td>H86702M</td>
</tr>
</tbody>
</table>

**DETECTION**

| H86465M | H86458M | * Also works in IHC |

**Antigens**

- A86824H
  - Native antigen from human skeletal muscle
  - >95% pure (SDS-PAGE), lyophilized
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 cTnl, 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

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
R01645  - Recombinant (E. coli)
- ≥ 95% pure (SDS-PAGE)
- Suitable for use in CLIA

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

Vitamin D
Vitamin D is a fat-soluble precursor of the steroid hormone calcitirol 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.
Von Willebrand Factor (VEF)

VEF is a large multimeric glycoprotein produced by Weibel-Palade bodies. It plays a pivotal role in platelet adhesion and aggregates at sites of high shear rates (e.g., ruptured atherosclerotic plaque lesions) in patients with pre-existing vascular disease.

Antibody and Antigen Pairs

<table>
<thead>
<tr>
<th>ANTIBODY</th>
<th>ANTIGEN</th>
<th>APPLICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>K01214M</td>
<td>A01697B</td>
<td>*Lateral Flow</td>
</tr>
<tr>
<td>K01214M</td>
<td>A01698B</td>
<td>*ELISA and RIA</td>
</tr>
</tbody>
</table>

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

Von Willebrand Factor (VEF)

Vitamin D continued

Antibody and Antigen Pairs

<table>
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</tr>
<tr>
<td>K01214M</td>
<td>A01698B</td>
<td>*ELISA and RIA</td>
</tr>
</tbody>
</table>

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