



# Cardiovascular

Discover, Analyze & Quantify  
Cardiovascular Biomarkers



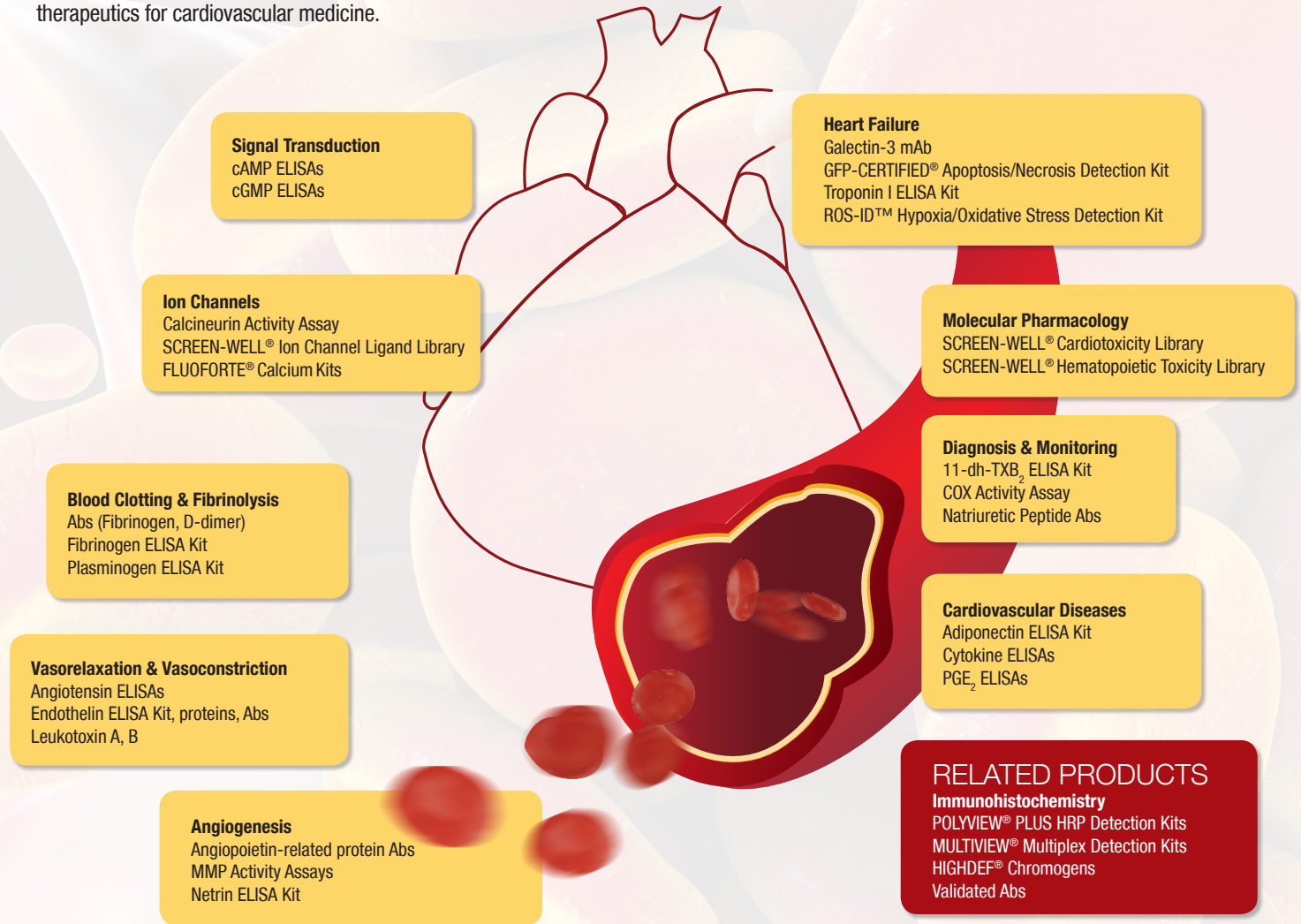


# PUMP UP YOUR RESEARCH

## Tools For Discovery & Detection of Cardiac Disease Markers

The cardiovascular or circulatory system provides the body with essential nutrients and oxygen. Besides its nourishing function, it also plays a crucial role in inflammation and fighting infections, maintaining homeostasis, transporting hormones, and stabilizing body temperature. It also assists the body in recovering from damage and trauma. Although the system is extremely resilient, repeated or continuous stress can cause long-term damage and lead to cardiovascular diseases such as heart failure and stroke.

Cardiovascular disease is consistently ranked as the single largest cause of death in the world, and it may be caused by heart damage or vascular problems. Challenges in cardiovascular clinical development have caused researchers to take a closer look at cardiac function and metabolism. Enzo Life Sciences offers a comprehensive portfolio of products to enable discovery of cardiac risk factors as well as analysis of the cellular response to novel therapeutics for cardiovascular medicine.



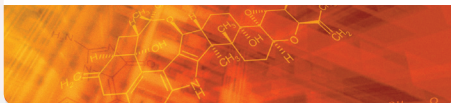
### Immunoassays & Antibodies

As a trusted manufacturer of thousands of widely cited and thoroughly validated ELISA kits and antibodies, we understand quality means delivering sensitivity, specificity, and consistency. With over 300 immunoassay and detection kits, 3,000 antibodies, and a complete set of IHC reagents, Enzo enables sensitive and specific analysis of biomarkers for immune dysfunction to determine the source and consequence of the immunological response.



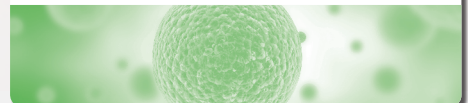
### Small Molecule Chemistry

Enzo offers more than 3,000 biologically characterized small molecules and the industry's most diverse collection of compound libraries for predictive toxicology. Our catalog includes hundreds of REDOX compounds, natural products, and bioactive lipids available as ready-to-screen SCREEN-WELL® libraries or as individual and bulk compounds.



### Cell-Based Assays

Our CELLESTIAL® portfolio of fluorescent probes and assay kits for cellular analysis provides a complete set of tools for monitoring cell viability, proliferation, death, oxidative stress and toxicology. Our dye-based assays have been optimized for the most demanding imaging applications including confocal microscopy, wide-field fluorescence microscopy, flow cytometry, and high-content screening, where consistency and reproducibility are essential.



# A COMPLETE PORTFOLIO OF ASSAYS, ENZYMES & COMPOUNDS

## Evaluate Vascular Growth, Inflammatory Responses and Coagulation

### VASCULAR GROWTH AND MAINTENANCE

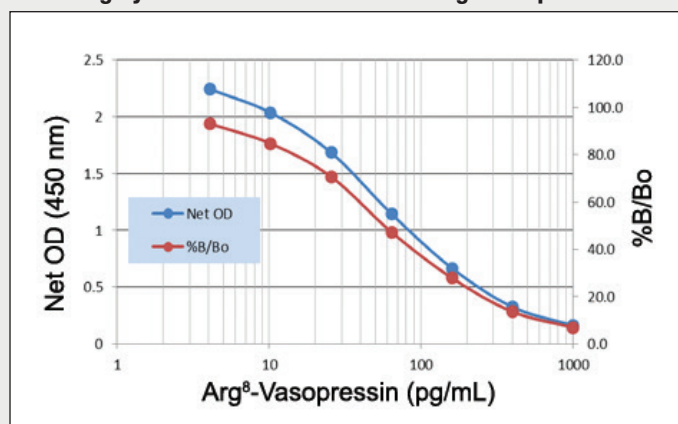
#### A Trusted Source for Arg<sup>8</sup>-Vasopressin Detection

##### Arg<sup>8</sup>-Vasopressin ELISA Kit (ADI-900-017A)

Also known as antidiuretic hormone, vasopressin is involved in blood vessel constriction and is linked to an increase in blood pressure.

- Specific detection with negligible reactivity towards related molecules
- Flexible use for sample types including urine, perfusates, plasma, tissue, and serum
- Widely cited in numerous peer-reviewed journals

#### Highly Sensitive Measurement of Arg<sup>8</sup>-Vasopressin



CLOTTING AND FIBRINOLYSIS	
PRODUCT NAME	PRODUCT #
D-dimer, mAb (22)	BPD-ABS-015-22
Fibrinogen ELISA Kit	ADI-900-230
Fibrinogen, mAb (1D6)	BPD-HYB-051-04
GSNO	ALX-420-002
Plasminogen ELISA Kit	ADI-900-231
Puerarin	ALX-350-249

ANGIOGENESIS AND VASCULAR REGULATION	
PRODUCT NAME	PRODUCT #
Angiotensin A ELISA Kit	ADI-900-207
Angiotensin I ELISA Kit	ADI-900-203
Angiotensin II ELISA Kit	ADI-900-204
ANGPTL4 (human), (recombinant)	ALX-201-338
MMP-2 Colorimetric Drug Discovery Assay	BML-AK408
ROS-ID™ NO Detection Kit	ENZ-51013
VEGF (human) ELISA Kit	ENZ-KIT156

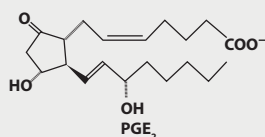
### INFLAMMATION & DISEASE

#### Flexible Formats for Quantification of Prostaglandins

##### PGE<sub>2</sub> Immunoassays

Prostaglandin E<sub>2</sub> is an eicosanoid closely associated to the thromboxanes, and can act as a potent vasodilatory agent, as well as being pyrogenic during infection.

- Ultrasensitive ELISAs to measure as little as 8.26 pg/mL PGE<sub>2</sub>
- Compatible with culture supernatants, serum, saliva, urine, whole blood and more
- Widely cited in peer-reviewed literature for decades
- High-throughput assays in colorimetric, chemiluminescent, and fluorescent readouts



PGE <sub>2</sub> IMMUNOASSAYS	
PRODUCT NAME	PRODUCT #
PGE <sub>2</sub> ELISA Kit	ADI-900-001
PGE <sub>2</sub> High Sensitivity ELISA Kit	ADI-930-001
PGE <sub>2</sub> CLIA (chemiluminescent) Kit	ADI-910-001
PGE <sub>2</sub> FPIA (fluorescent) Kit	ADI-920-001

INFLAMMATION	
PRODUCT NAME	PRODUCT #
CRP (human) ELISA Kit	ENZ-KIT102
IL-6 (human) ELISA Kit	ADI-900-033
IL-8 (human) ELISA Kit	ADI-900-156
IL-10 (human) ELISA Kit	ADI-900-036
IL-17A (human) ELISA Kit	ADI-900-177
IL-33 (human) ELISA Kit	ADI-900-201
IL-1 Receptor Type I (human):Fc (human)(recombinant)	ALX-522-057
IL-35 (human):Fc (human)(recombinant)	ALX-522-140
IL-33, mAb (Nessy-1)	ALX-804-840

VASCULAR DISEASES	
PRODUCT NAME	PRODUCT #
CYTO-ID® Autophagy Detection Kit 2.0	ENZ-KIT175
Adiponectin ELISA Kit	ALX-850-377
Haptoglobin ELISA Kit	ADI-900-229

# MONITOR SIGNAL TRANSDUCTION IN CARDIAC MUSCLE

High-Purity Antibodies & Flexible Activity Assays for Complete Analysis of Cardiac Activity

## MONITOR CALCIUM MOBILIZATION

A Brighter, More Robust Fluorescent Assay for Calcium Mobilization

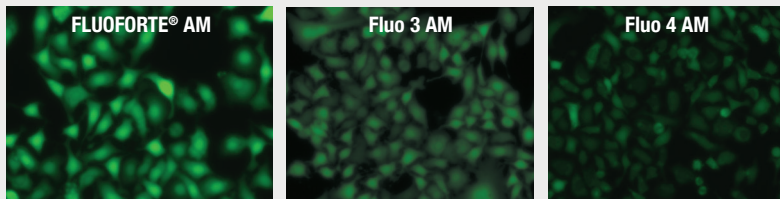
### FLUOFORTE® Calcium Assay Kits (ENZ-51017)

Intracellular calcium mobilization is critical to maintaining cellular depolarization during ventricular contraction. Enzo's FLUOFORTE® dyes are optimized for high-throughput detection of intracellular calcium in living cells such as cardiomyocytes.

- Dye optimized for superior cell-permeability and retention
- Economical alternative developed for use with conventional dual-dispensing microplate readers
- Provides EC50 values comparable to Fluo-4 and Calcium 4
- Optional red dye enables multiplexing with green fluorophores

PRODUCT NAME	PRODUCT #
FLUOFORTE® Calcium Assay Kit for Microplates, 10 plates	ENZ-51016
FLUOFORTE® Calcium Assay Kit for Microplates, 100 plates	ENZ-51017
GFP-CERTIFIED® FLUOFORTE® Assay Kit for Microplates	ENZ-51020
FLUOFORTE® Reagent, 5x50 µg	ENZ-52014
FLUOFORTE® Reagent, 1 mg	ENZ-52015
GFP-CERTIFIED® FLUOFORTE® Reagent	ENZ-52016

### Superior Detection of Calcium Mobilization Compared to the Competition



FLUOFORTE® exhibits significantly brighter fluorescence intensity than Fluo-3 AM and Fluo-4 AM. U-2 OS cells were seeded overnight, growth medium was removed, and cells were incubated with 100 µL of FLUOFORTE® AM, Fluo-3 AM, or Fluo-4 AM in HHBS at 37 °C, 5% CO<sub>2</sub> incubator for 1 hour. The cells were washed twice with 200 µL HHBS, and ATP (20 µL/well) was added to achieve concentrations of 200 nM with dye efflux inhibitor. Cells were then immediately imaged with a fluorescence microscope (Olympus IX71) using FITC channel.

## SCREEN FOR INHIBITORS OF PHOSPHATASE ACTIVITY

Highly-Cited Assay for Detection of Calcineurin Activity in Cardiac Myocytes

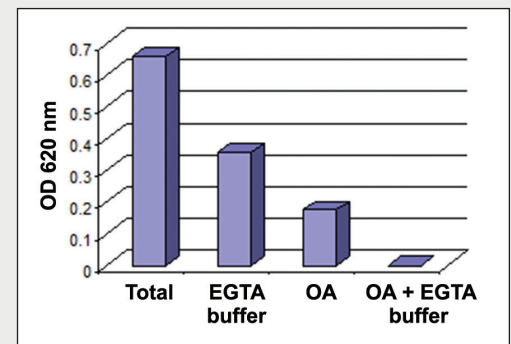
### Calcineurin Cellular Activity Assay (BML-AK816)

Calcineurin, a protein phosphatase involved in immune cell signaling, is a target for inhibitors, such as everolimus, which are used following heart transplantation to prevent rejection.

- Uses RII phosphopeptide, the most efficient and selective calcineurin substrate
- Convenient 1-step detection
- Suitable for high-throughput cellular analysis
- Simple non-radioactive detection

Phosphatase activity from a freshly prepared mouse brain extract. Prior to gel filtration, the extract was diluted 1:1 in lysis buffer containing protease inhibitors. After gel filtration and prior to the phosphatase assay, the extract was diluted 1:25 in lysis buffer. The reaction was incubated for 30 min at 30°C.

### Cellular CaN Assay: Mouse Brain Tissue



## DETECT MARKERS OF MYOCARDIAL INFARCTION

Highly Specific, Validated Antibodies for Natriuretic Peptide Detection

### Natriuretic Peptide Antibodies

The brain natriuretic peptide (BNP) and atrial natriuretic peptide (ANP) are synthesized in cardiomyocytes in response to various forms of stress, and have a powerful vasodilatory effect. In clinical settings, normal levels of BNP and ANP can be used to rule out myocardial infarction.

PRODUCT NAME	PRODUCT #
Atrial natriuretic peptide, pAb	BML-AA1105
Atrial natriuretic peptide, mAb (23/1)	BML-AA6244
Atrial natriuretic peptide, pAb	BML-AZ1072
Brain natriuretic peptide, pAb	BML-BA1117
Brain natriuretic peptide	BML-BP9117



# SENSITIVE AND HIGHLY RELIABLE ASSAYS & REAGENTS

A Full Range of Antibodies, Detection and Activity Assays for the Reliable Detection of Cardiac Disease Biomarkers

## CARDIAC INJURY

Most Sensitive ELISA for Detection of Troponin I

### Troponin I ELISA Kit (ADI-900-228)

Troponin I is an inhibitory troponin subunit that acts in muscle relaxation and which, in its cardiac isoform, is a reliable marker of cardiac injury when identified in elevated levels in the bloodstream.

- Most sensitive ELISA, detecting as little as 0.38 ng/mL of human troponin
- Flexible sample types, including: cell lysates, plasma, and serum
- Simple protocol with results in just 3.5 hours
- Quantitative results as compared to Western blot analysis

## PREVENTION, DIAGNOSIS & MONITORING

PRODUCT NAME	PRODUCT #
11-dehydro-TXB <sub>2</sub> ELISA Kit	ADI-900-092
ADMA (human) ELISA Kit	ALX-850-323
ADMA direct (mouse/rat) ELISA Kit	ALX-850-327
Bufalin	BML-AP303
COX Activity Assay	ADI-907-003
Eicosapentaenoic Acid	BML-FA001
Gingerol	BML-CA422
mTOR, pAb	ALX-210-065
Rapamycin	BML-A275
Thromboxane B <sub>2</sub> , pAb	ADI-905-005
TXB <sub>2</sub> ELISA Kit	ADI-900-002

## VITAMIN D DEFICIENCY

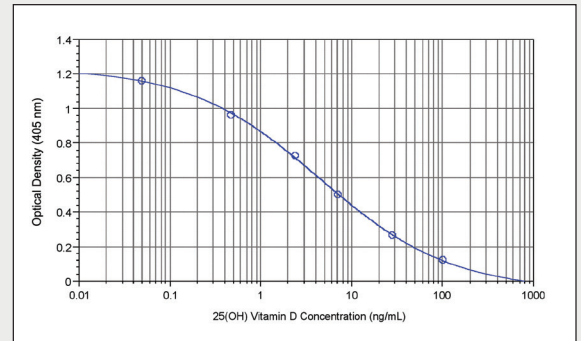
The Fastest High-Sensitivity Vitamin D ELISA

### 25(OH) Vitamin D ELISA Kit (ADI-900-215)

Low levels of vitamin D, an essential secosteroid, has been linked with an increased risk of heart disease and hypertension. Precise measurements of 25-hydroxyvitamin D in serum are critical to identify cardiac risk factors and to prevent vitamin D deficiency. The 25(OH)-Vitamin D assay is quick and accurate, making it the tool of choice for 25(OH)-Vitamin D detection.

- Rapid incubation times ensure results in as little as 1.5 hours
- Wide detection range allows more precise quantification than by blot analysis

25(OH) Vitamin D ELISA Kit Standard Curve



### RELATED PRODUCTS

PRODUCT NAME	PRODUCT #	PRODUCT NAME	PRODUCT #
25-Hydroxyvitamin D3	BML-DM100	Osteoprotegerin (human) ELISA Kit	ALX-850-280
1 $\alpha$ , 25-Dihydroxyvitamin D3	BML-DM200	Osteocalcin (mouse)(NT), pAb	ALX-210-333

## CARDIOVASCULAR DRUG DISCOVERY

Innovative Tools for Profiling Cardiac Toxicity

### SCREEN-WELL® Cardiotoxicity Library (BML-2850)

The SCREEN-WELL® Cardiotoxicity Library is a focused collection of 130 compounds with defined and diverse cardiotoxicity. The library includes a variety of structurally and mechanistically different compound classes, as well as non-toxic controls. The compounds are dissolved in DMSO at 10 mM and aliquoted into deep-well plates. The library is an essential tool for predictive toxicology screening and assay development.

- Arrhythmia
- Cardiomyocyte Apoptosis
- Carditis
- Fibrosis
- Hypotension/Hypertension
- Ion Channel Blockage
- Mitochondrial Toxicity
- Non-cardiotoxic Controls
- Thrombosis

### RELATED PRODUCTS

PRODUCT NAME	PRODUCT #
SCREEN-WELL® Autophagy Library	BML-2837
SCREEN-WELL® Bioactive Lipids Library	BML-2840
SCREEN-WELL® Epigenetics Library	BML-2836
SCREEN-WELL® FDA-Approved Drug Library	BML-2843
SCREEN-WELL® Hematopoietic Toxicity Library	BML-2852
SCREEN-WELL® Ion Channel Ligand Library	BML-2805
SCREEN-WELL® Wnt Library	BML-2838

*You may also be interested in:*



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**Put our experience to work for you!**

Our broad range of scientific expertise and manufacturing capabilities enables us to provide a comprehensive set of tools for cardiovascular research to save you time and money.