



Cancer

Integrated Solutions for Basic
Research & Translational Discovery



enzolifesciences.com

MODULATE IT. LABEL IT. DETECT IT.

Warburg Effect

MITO-ID® Extracellular O₂ Sensor Kit
MITO-ID® Extracellular pH Sensor Probe

Metabolism: Monitor Adipokine & Insulin Signaling

Adiponectin Protein & ELISA Kit
FLUOR DE LYS® SIRT5 Assay Kits
GLP-1 Antibodies & ELISA Kit
Human, Mouse & Rat Leptin ELISAs
Insulin Receptor & IGF Antibodies

Epigenetic Regulation: Flexible Formats for HDAC & Sirtuin Screening

Active HDAC & SIRT Enzymes & Substrates
CHEMILUM DE LYS® HDAC/SIRT Assay Kit
SCREEN-WELL® Epigenetics Compound Library
Ubiquitinylation & SUMOylation Antibodies

Gene Expression & Copy Number

BIOARRAY™ Low Input RNA Amplification & Labeling Kit
BIO-PROBE® Labeling & Detection Systems for *in situ* Hybridization
CYTAG™ CGH Labeling Kits
Fluorescent dUTPs & Nick Translation System for FISH Probes
FLOWSCRIPT® HPV E6/E7 Assay Kit
PATHO-GENE® HPV Probes & Assays

Toxicity & Chemoresistance

EFLUX-ID® Multidrug Resistance Assay Kit
Microcystin Standards & ELISA Kit
MITO-ID® and LYSO-ID® Cytotoxicity Assays
SCREEN-WELL® FDA Approved Drug Compound Library
SCREEN-WELL® Natural Products Compound Library
SCREEN-WELL® Toxicity Compound Libraries

Oxidative Stress & DNA Damage

DNA Damage (8-OHdG) ELISA Kit
Heme Oxygenase Antibodies & ELISAs
MITO-ID® Membrane Potential Assay Kits
SCREEN-WELL® REDOX Compound Library
ROS-ID™ Hypoxia/Oxidative Stress Detection Kit
ROS-ID™ ROS/RNS Detection Kit
ROS-ID™ Total ROS/Superoxide Detection Kit

Apoptosis/Necrosis

p53, Bax, Bcl-2, Survivin, XIAP, & Cytochrome c ELISA Kits
Apoptosis/Necrosis Detection Kit
Caspase Activity Assays
Comet SCGE Assay Kit
NUCLEAR-ID® Chromatin Condensation Kit
NUCLEAR-ID® Cell Viability Reagents

Tumor Immunology

CRP ELISA
Cytokine ELISA Kits
POLYVIEW® PLUS IHC Detection Reagents & Kits
MEGACD40L® Protein
NF-κB p65 ELISA Kit
PGE₂, TXB₂, LTB₄ ELISAs
SUPERFASLIGANDS™ Protein
TLR Signaling Antibodies
TNF Abs & Proteins

Autophagy

SCREEN-WELL® Autophagy Compound Library
CYTO-ID® Autophagy Detection Kits
LC3 Antibodies
LYSO-ID® Detection Kit
p62 & NBR1 ELISA Kits
PROTEOSTAT® Aggresome Detection Kit

Cell Cycle Analysis

CDK Inhibitors & Cyclin Antibodies
NUCLEAR-ID® Cell Cycle Kits
NUCLEOLAR-ID® Detection Kits
p21 and p27^{Kip1} ELISAs

Cytokine Signaling

Death Receptor Signals

TLR Signaling

ECM Remodeling

Tumor Invasion & Angiogenesis

HIF-1α and HIF-2α Abs & Modulators
MMP Red & Green Fluorometric Kits
NGAL ELISA Kit
Serine Protease ELISAs & Abs
VEGF & VEGFR ELISA Kits, Antibodies & Inhibitors

Wnt Pathway Analysis

Dkk-1, GSK-3β, & β-catenin ELISA Kits
LEADING LIGHT® Wnt Reporter Assay
SCREEN-WELL® Wnt Compound Library

Oncogenic Signaling

Akt, PKA & PKC Kinase Activity Kits
cAMP/cGMP ELISA Kits
Kinase & Phosphatase Inhibitor Compound Libraries
PI3K/Akt/mTOR Antibodies & Modulators
MAP Kinase ELISAs & Antibodies
Ras/Rho/Rac1/Rap1 Activation Kits

Innovation to meet the needs of evolving cancer hallmarks

WHAT WILL THE NEXT CANCER HALLMARK BE?

Discover It.

Your aim may be to investigate cancer's genetic origins, establish the mechanism of action or clinical implications of tumor biomarkers, or develop a targeted pharmaceutical or cellular therapy. At Enzo, our aim is to support your research. As cancer hallmarks have evolved over the last decade, so has our portfolio of tools to support cancer research. Over this time, we have called upon our diverse scientific and technical expertise to create innovative assays and reagents in the fields of epigenetics, autophagy, and Wnt research. These novel tools, and a broad portfolio of products established for decades in peer-reviewed literature, will help support cancer discovery into the next decade and beyond.

Cancer Hallmarks

Proliferative Signaling

Evading Growth Suppression

Resisting Cell Death

Activating Invasion & Metastasis

Enabling Replicative Immortality

Inducing Angiogenesis

Deregulating Cellular Energetics

Avoiding Immune Destruction

Genome Instability & Mutation

Tumor-Promoting Inflammation

Complete Solutions

Caspase Activity Assays

CYTO-ID® Autophagy Detection Kits

Cytokine/Eicosanoid ELISA Kits

FLOWSCRIPT® HPV E6/E7 Assay

HDAC/SIRT Activity Assay Kits

POLYVIEW® PLUS IHC Detection Kits

IHC Validated Antibodies

IHC HIGHDEF® Chromogens

LEADING LIGHT® Wnt Reporter Assay

MITO-ID® O₂ and pH Sensors

MMP Activity Assays

Nucleic Acid Labeling Kits

p62 & NBR1 ELISA Kits

PATHO-GENE® HPV Probes

ROS-ID™ ROS/RNS Detection Kits

Serine Protease ELISA Kits

SCREEN-WELL® Wnt, Epigenetics, Autophagy Libraries

Modulate it.

We carry over 3,000 biologically characterized small molecules and the industry's most diverse collection of compound libraries. Our SCREEN-WELL® libraries of kinase inhibitors, toxicity screening libraries, epigenetic regulators, natural products, and pathway-targeting compounds are complemented by innovative HDAC, Sirtuin, and MMP enzyme activity assays, and high-purity, high-activity recombinant proteins for Wnt, TNF ligands, and more.

Label it.

Our proprietary nucleotide labeling technology produces high-yield nucleotide-amplification and incorporation of fluorophore- or biotin-conjugated nucleotides. The result is industry-leading consistency for gene copy number and expression analysis by CGH, microarray, FISH, IHC, and *in situ* hybridization.

Detect it.

As a trusted manufacturer of thousands of widely cited and thoroughly validated antibodies, ELISA kits, and cell-based assays, we understand quality means delivering sensitivity, specificity, and consistency. Over 300 immunoassays and 3,000 antibodies enable sensitive and specific detection of protein and small molecule biomarkers. Monitor cell viability, death, and toxic responses with CELLESTIAL® probes for live cell analysis.



SINGLE CELL DETECTION OF mRNA

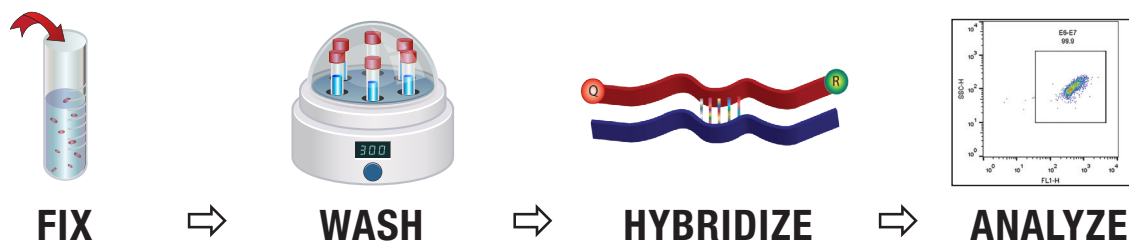
Multiplex Analysis of Genotypic and Phenotypic Markers via Flow Cytometry

FLOWSCRIPT® HPV E6/E7 Assay 2.0: mRNA Transcript Expression Analysis at a Single Cell Level (ENZ-GEN305)

The assay employs a novel *in situ* hybridization technique utilizing a cocktail of probes specific to multiple sites within the E6 and E7 genes to ensure the detection of these mRNA transcripts. This homogeneous assay can be performed in less than 3 hours and is specific for the most prevalent high-risk HPV genotypes.

- Homogeneous system omits washing following hybridization and thereby minimizes both leakage and signal degradation resulting in:
 - » More reliable, consistent results
 - » Fewer steps and improved ease-of-use
- Optimized to reduce false positives
- Nuclear dye enables cell cycle analysis
- Complete set of controls including:
 - » Internal control to ensure proper hybridization
 - » External control beads for consistent performance
 - » Nuclear dye controls
- Adaptable to high-throughput platforms for rapid sample analysis
- Minimal sample volume input saves precious samples for additional analysis

Results in Less Than 3 Hours

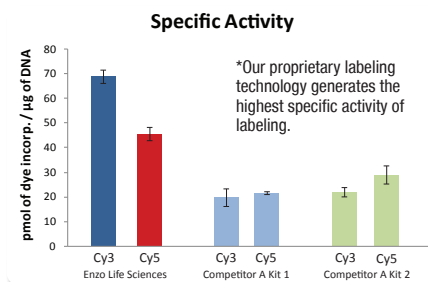


GENE EXPRESSION & COPY NUMBER DETECTION

CYTAG™ CGH Labeling Kit (ENZ-42671)

Array-based comparative genomic hybridization (aCGH) is a powerful platform for detecting DNA copy number gains and losses associated with chromosomal abnormalities in genetic diseases and cancers. The proprietary labeling technology and high-performance dyes incorporated into our aCGH kits enhance performance with commonly implemented microarray platforms (e.g., Agilent® arrays). Superior labeling technology results in more uniform dye incorporation so that comparisons between genomes is done at higher resolution and with improved signal-to-noise ratios.

- High quality data provides fewer errors (false positive or false negative) and less time with manual analysis of the data
- Generates the highest quality DLR scores (0.09 – 0.12), exceeding industry standards
- Increased resolution for comprehensive, unbiased analysis of DNA copy number changes
- Performs total genomic DNA analysis without amplification or complexity reduction
- Proprietary labeling technology generates the highest specific activity of labeling



Gene Expression & Transcript Analysis with BIOARRAY™ Amplification and Labeling Systems

RELATED PRODUCTS	
Product Name	Product #
BIOARRAY™ Low Input RNA Amplification and Biotin Labeling System	ENZ-42422
BIOARRAY HIGHYIELD® RNA Transcript Labeling Kit	ENZ-42655
BIOARRAY™ Eukaryotic Hybridization Controls	ENZ-42661

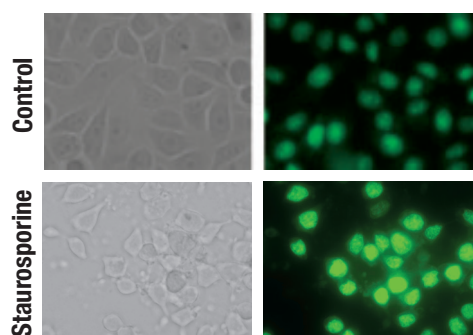
BIOARRAY™ Single-round RNA Amplification and Labeling System (ENZ-42420, ENZ-42421)
Greater biotin incorporation allows improved data quality and analysis of Affymetrix GeneChip® arrays

LIVE CELL ANALYSIS

NUCLEAR-ID® Green Chromatin Condensation Kit (ENZ-51021)

- Condensation-sensitive fluorescent dye excitable with standard 488 nm laser
- Intercalating dye with superior permeability with any live cell line
- Easy no-wash, mix-and-read protocol for microplates, flow cytometry, and microscopy

Convenient Alternative to Hoechst Dyes That Require 350 nm UV Laser for Detection



Bright Field

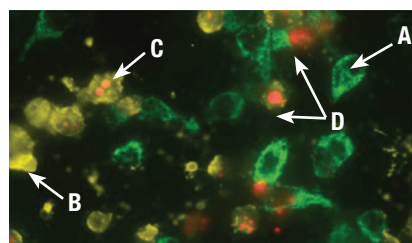
FITC Filter

Chromatin condensation as observed by fluorescence microscopy using a standard 488 nm laser. HeLa cells were treated for 4 hours with DMSO (Control) or 2 μ M Staurosporine on a slide and stained with 5 μ M NUCLEAR-ID® Green dye. The intercalating dye exhibits increased fluorescence upon chromatin condensation, a hallmark of apoptosis.

GFP-CERTIFIED® Apoptosis/Necrosis Detection Kit (ENZ-51002)

- True multiplexing capabilities with GFP and other green fluorescent probes
- Optimized for both fluorescence microscopy and flow cytometry applications
- Suitable for death pathway analysis and drug/toxin studies

Identify Different Stages of Apoptosis



A. Viable cells

B. Early apoptotic cells

C. Late apoptotic cells

D. Necrotic cells

GFP-CERTIFIED® Apoptosis/Necrosis Detection Kit (ENZ-51002) detects four distinct cell states. Mitochondrial GFP-expressing HeLa cells were treated with 2 μ M Staurosporine for 4 hours. The Apoptosis Detection Reagent (Gold) and Necrosis Detection Reagent (Red) specifically detect cell states with clear spectral separation from mitochondria-associated GFP signal. Healthy cells (A), cells undergoing apoptosis (B), cells undergoing late-stage apoptosis (C), and necrotic cells (D).

HDAC/SIRT SCREENING ASSAYS

Choose A Format to Fit Your Needs

FLUOR DE LYS®

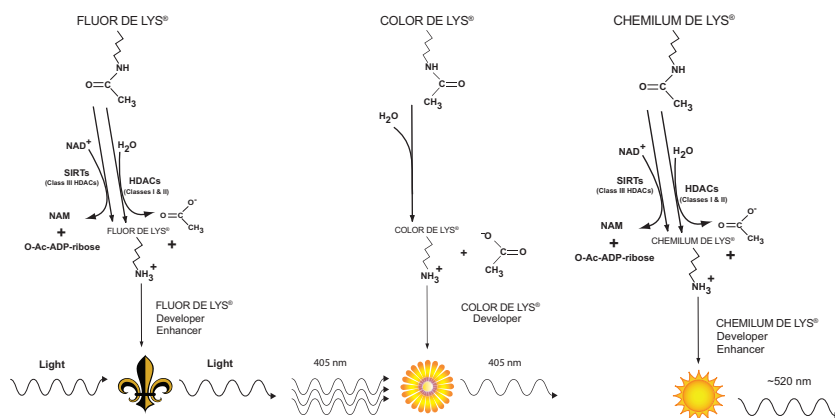
Robust fluorescent screening assays

COLOR DE LYS®

Option for standard absorbance plate readers

CHEMILUM DE LYS®

Ideal for cross-validation of fluorescent assays



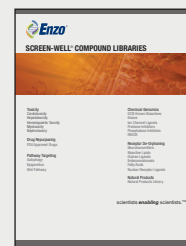
Flexible HDAC & Sirtuin Assays

- Non-radioactive, homogeneous, HTS compatible formats
- Green & chemiluminescent assays available to minimize interference
- Assay all HDAC classes from multiple sources
- High-activity, in-house manufactured control enzymes

FEATURED ENZYME ACTIVITY ASSAYS

Product Name	Product #
Acetyltransferase Activity Kit	ADI-907-026
Calcineurin Phosphatase Assay Kit	BML-AK804
DPPIV Drug Discovery Kit	BML-AK499
CHEMILUM DE LYS® HDAC/SIRT Chemiluminescent Drug Discovery Kit	BML-AK532
FLUOR DE LYS® HDAC Fluorometric Activity Assay Kit	BML-AK500
FLUOR DE LYS® Green HDAC Fluorometric Activity Kit	BML-AK530
FLUOR DE LYS® SIRT1 Fluorometric Drug Discovery Kit	BML-AK555
MMP-1 Colorimetric Drug Discovery Kit	BML-AK404
MMP-9 Colorimetric Drug Discovery Kit	BML-AK410
PKA Kinase Activity Kit	ADI-EKS-390A
PKC Kinase Activity Kit	ADI-EKS-420A
Akt Kinase Activity Kit	ADI-EKS-400A

You may also be interested in:



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Put our experience to work for you!

Our broad range of scientific expertise and industry-proven manufacturing capabilities, enables us to provide a comprehensive set of solutions for studying cancer research.