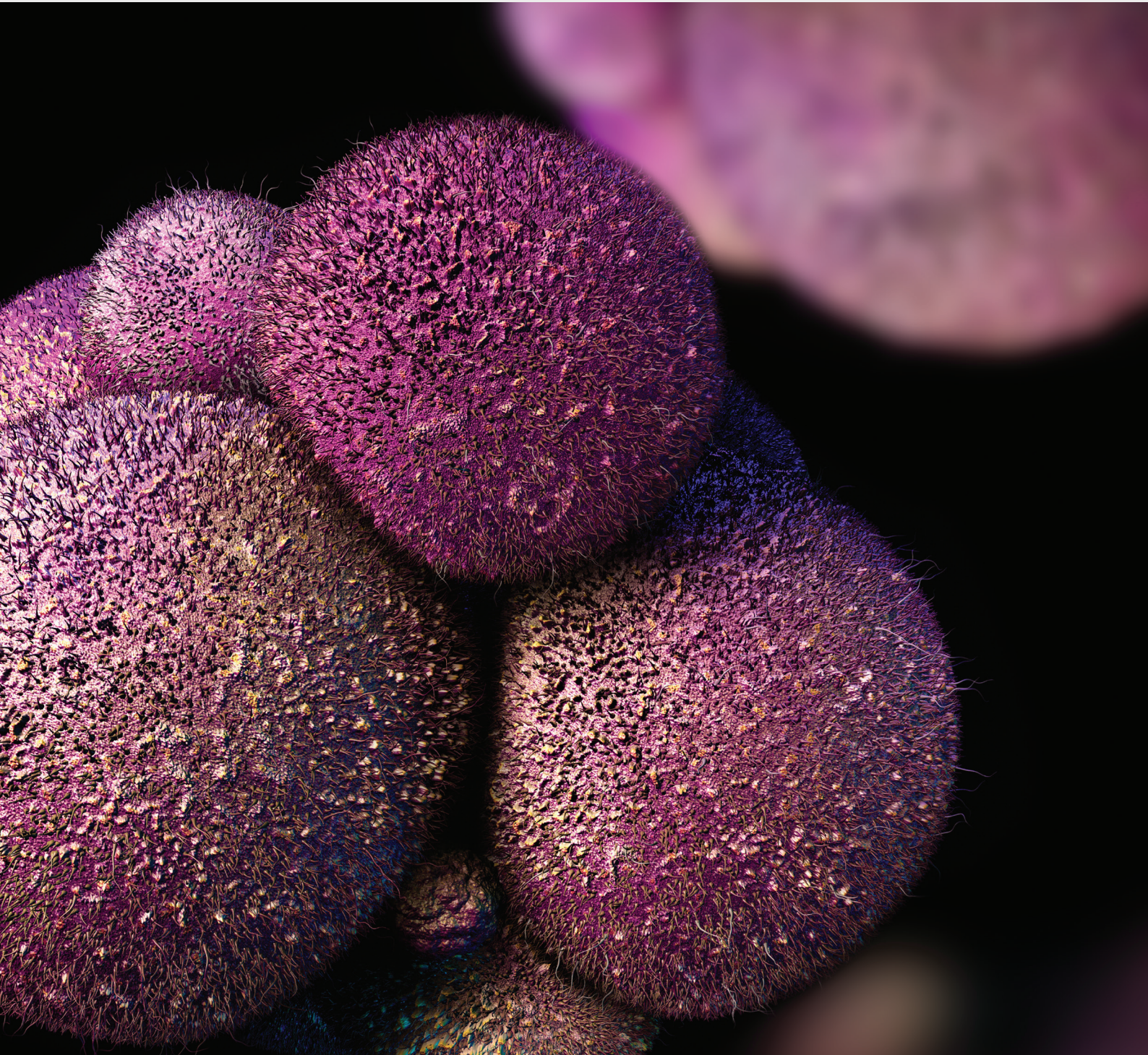




Stem Cells

Integrated Solutions for
Stem Cell Discovery

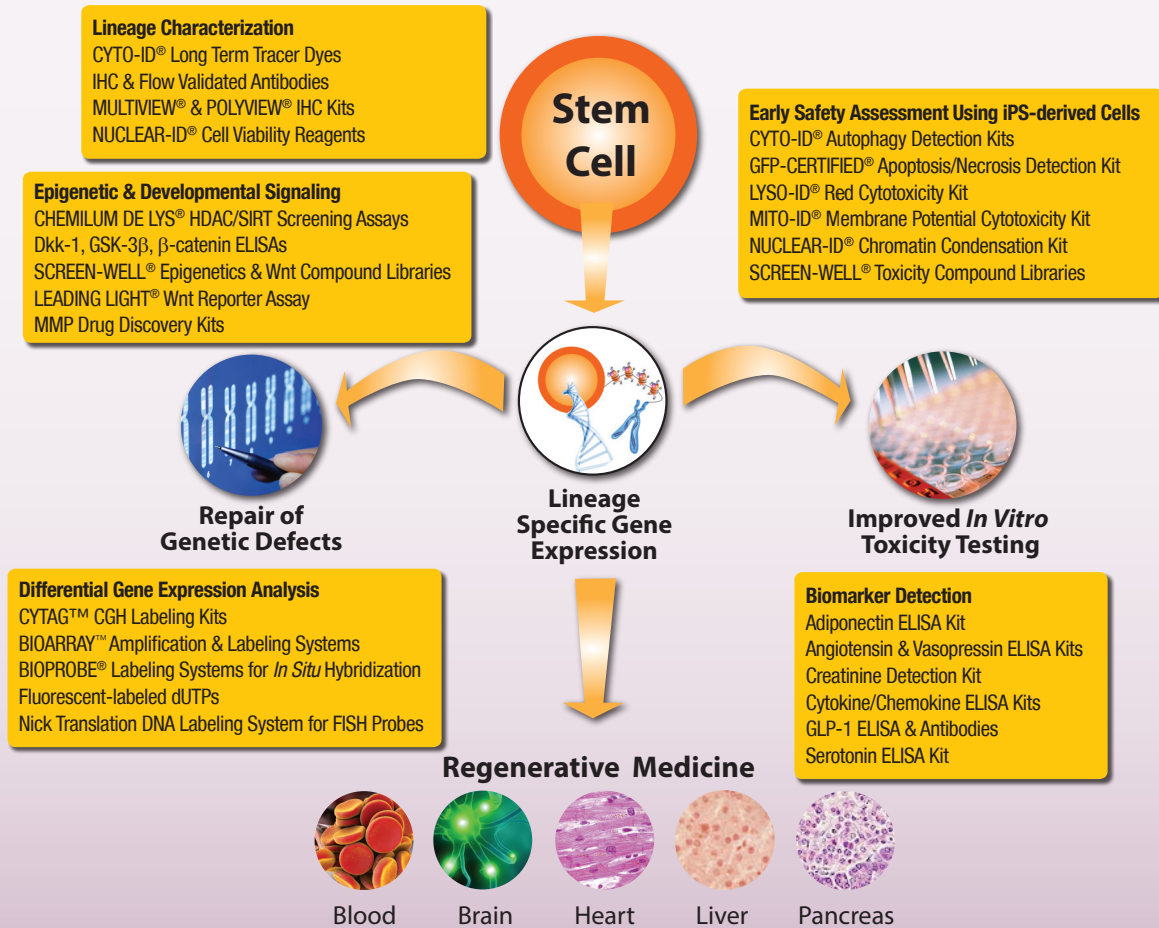


DIFFERENTIATE YOUR RESEARCH

ON THE PATH TO STEM CELL DISCOVERY

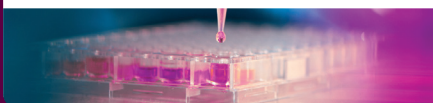
Therapeutic Utility & Promise of Stem cells

Regardless of the specific path your stem cell research takes, Enzo provides innovative tools to help you realize its full potential. Pluripotent stem cells are a renewable source of replacement cells which have the potential to repair damaged tissues or treat degenerative diseases without invoking immune rejection. With this, they hold the potential for treating a myriad of disease pathologies including cancer, diabetes, hematological disorders, cardiovascular, inflammatory and neurodegenerative diseases. Unlocking the cellular mechanisms that regulate self-renewal, reprogramming and differentiation holds promise for new cellular therapies, regenerative medicine, and improving model systems to assess drug efficacy and toxicity.



Biochemical Assays

Detection of protein activity related to transcriptional regulation and cell signaling is critical to understanding the mechanisms associated with stem cell pluripotency and differentiation. Our innovative assays in the area of epigenetics and Wnt signaling provide the stem cell market with robust screening assays, featuring unrivaled sensitivity and specificity for investigating these regulatory pathways in stem cell biology.



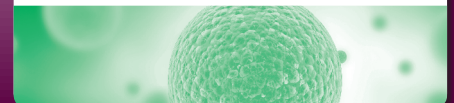
Nucleic Acid Labeling and Amplification

Enzo Life Sciences is a recognized pioneer and innovator of life sciences tools, backed by patented DNA and RNA labeling chemistries for genomics research and development. Our unique offering of kits for genomic analysis enables monitoring the genomic integrity of long-term stem cell cultures or to assess expression of genes regulating stem cell differentiation and fate.



Cell Analysis & Detection Reagents

Enzo's expertise in fluorescent probe chemistry and cellular analysis combine to provide high-quality, flexible detection platforms for stem cell profiling and functional analysis. Our unique CELLESTIAL® assays and widely cited antibodies enable multiplex detection of cellular markers and key parameters of cell viability, cell signaling, death pathways, and toxicity.



MODULATE STEM CELL FATE WITH SMALL MOLECULES & PROTEINS

Stem cell self-renewal and differentiation involves complex events which lead to the generation of various phenotypes. Enzo offers an extensive collection of small molecules and proteins such as growth factors and cytokines that can be used to influence differentiation, biochemical activity, and cell growth.

Small Molecules

Differentiation	Product #
Compound E	ALX-270-415
Cyclopamine	BML-GR334
DAPT	ALX-270-416
Dexamethasone	BML-EI126
DIF-1	BML-GR324
Forskolin	BML-CN100
IDE-1	BML-SC100
IDE-2	BML-SC101
Purmorphamine	ALX-420-045
Retinoic acid, all trans	BML-GR100
Sodium butyrate	ALX-270-301
Valproic acid	ALX-550-304

Proliferation & Self-Renewal	Product #
BI-D1870	BML-EI407
BML-275 (Dorsomorphin)	BML-EI369
ID-8	BML-SC105
XAV939	BML-WN100
Y-27632 . Dihydrochloride	ALX-270-333

Re-programming	Product #
ALK5 inhibitor	ALX-270-448
AM-580	BML-GR104
BIX01294	ALX-270-517
Doxycycline hyclate	ALX-380-273
Pifithrin- α (cyclic)	ALX-270-287
Pifithrin- α	BML-GR325
Pifithrin- μ	BML-AP503
Tranylcypromine	BML-EI217

SCREEN-WELL® Compound Libraries	Product #
Cardiotoxicity Library	BML-2850
Epigenetics Library	BML-2836
FDA Approved Drugs Library	BML-2843
Hematopoietic Toxicity Library	BML-2852
Hepatotoxicity Library	BML-2851
Myotoxicity Library	ENZ-LIB101
Nephrotoxicity Library	ENZ-LIB100
Wnt Pathway Library	BML-2838

Proteins

Growth Factors	Product #
Activin-A (recombinant)	ALX-201-809
Axin 1/2 (recombinant)	ENZ-PRT130/-131
BMP-4 (recombinant)	ENZ-PRT146
Dkk-1 (recombinant) (His)	ADI-KPR-CP100
EGF (recombinant)	ALX-201-812
Flt-3 Ligand (recombinant)	ALX-201-800
Follistatin (recombinant)	ALX-201-813
GDF-3 (recombinant)	ENZ-PRT176
GDF-5 (recombinant)	ALX-201-802
GM-CSF (recombinant)	ADI-908-063
KGF (recombinant)	ENZ-PRT182
m-CSF (recombinant)	ENZ-PRT143
Noggin (recombinant)	ENZ-PRT127
Stem Cell Factor (recombinant)	ALX-201-804
Stem Cell Factor (recombinant)	ALX-201-805
Stem Cell Factor (recombinant)	ALX-201-806
Wnt-3a (recombinant)	ENZ-60001

Cytokines/Chemokines	Product #
FGF-4 (recombinant)	ENZ-PRT173
FGF-8 (recombinant)	ENZ-PRT174
FGF basic (recombinant)	ALX-201-824
FGF-basic 147 (recombinant)	ALX-201-822
FGF-basic 154 (recombinant)	ALX-201-823
IL-3 (recombinant)	ALX-201-820
IL-3 (recombinant)	ALX-201-821
IL-6 (recombinant)	ALX-201-818
IL-6 (recombinant)	ALX-201-819
IL-12 (recombinant)	ALX-201-815
Oncostatin-M (recombinant)	ENZ-PRT177
TGF- β 3 (recombinant)	ALX-201-817

Stem Cell Markers	Product #
CD34 (recombinant)	ADI-908-290
CD45 (recombinant)	BML-SE135
Thy-1:Fc (recombinant)	ALX-522-091
Thy-1:Fc (recombinant)	ALX-522-096

Cell Culture Tools	Product #
Collagen 1, rat tail (thin plate coating)	ALX-522-440
Fibrinogen (plasma)	ENZ-PRT157
Laminin (fibroblasts)	ENZ-PRT159
Vitronectin (recombinant)	ENZ-PRT179

Human  Rat  Mouse 



GENE EXPRESSION ANALYSIS

MAXIMIZE GENOMIC DATA WITH MINIMAL SAMPLE INPUT

Our high-fidelity, high-efficiency nucleotide labeling kits allow faithful detection of stem cell gene transcripts and copy number, even when starting material may be limiting.

BIOARRAY HIGHYIELD® RNA Transcript Labeling Kit (ENZ-42655)

- Produce high-yield biotin-labeled RNA targets for hybridization
- *In vitro* transcription using bacteriophage T7 RNA polymerase promoters
- Correlate results from experiment-to-experiment with confidence

BIOARRAY™ Low Input RNA Amplification and Biotin Labeling System (ENZ-42422)

- Generate sufficient aRNA for microarray with just 20 ng of total input RNA
- Amplify and label in a single tube
- Produce superior 3'/5' transcript ratios with efficient *in vitro* transcription

CYTAG™ CGH Labeling Kit (ENZ-42671)

- Perform total genomic DNA analysis without amplification or complexity reduction
- Increase resolution for comprehensive, unbiased analysis of DNA copy number changes
- Produce superior DLR scores (0.09 – 0.12) that exceed industry standards

BIOCHEMICAL & REPORTER ASSAYS

DISCOVER NOVEL EPIGENETIC AND WNT PATHWAY MODULATORS

Enzo's assays for screening modulators of HDAC/SIRT activity and the Wnt pathway offer the sensitivity, specificity, and reproducibility researchers need to reveal the epigenetic fingerprints and developmental signals regulating stem cell maintenance and self-renewal.

CHEMILUM DE LYS® HDAC/SIRT Chemiluminescent Drug Discovery Kit (BML-AK532)

- High specificity assay eliminates false positives or negatives
- Superior signal-to-noise ratio with no interference from cell extract detergents
- Consistent results from a validated system

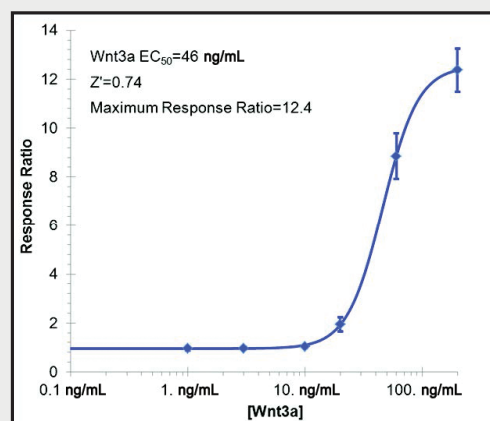
Eliminate False HDAC/SIRT Screening Hits with CHEMILUM DE LYS®

	CHEMILUM DE LYS®	Competitor HDAC Assays		
		Luciferase-Based Chemiluminescent Assay	Colorimetric Assay	Fluorometric Assay
No Artifacts Activation by Resveratrol	✓	✓		
Resistant to Protease Inhibitors	✓		✓	✓
Resistant to Kinase Inhibitors	✓		✓	✓

LEADING LIGHT® Wnt Reporter Assay (ENZ-61001)

- Luciferase-based assay accelerates screening analysis of Wnt pathway effectors
- Highest sensitivity in response to Wnt effectors without the use of lithium chloride
- Highly active Wnt-3a protein included to ensure robust signal 96- or 384-well format allows high-throughput analysis of Wnt pathway effectors

Dose-dependent Activation by Wnt-3a Protein



Luciferase activity in the LEADING LIGHT® Wnt reporter cell line increases in a dose-dependent manner in response to treatment with Wnt-3a protein without the need for LiCl.

REALIZE YOUR STEM CELL POTENTIAL

LIVE CELL ANALYSIS

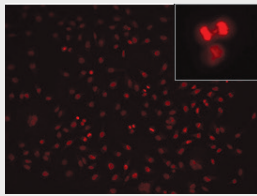
MULTIPLEX ANALYSIS OF CELL FATE AND DIFFERENTIATION BY FLOW CYTOMETRY

Our fluorescent probe-based CELLESTIAL® assays and high-specificity antibodies enable multiplex characterization of stem cell populations, including real-time functional assays to assess cell viability, cell death, and toxicity by flow cytometry. Our GFP-CERTIFIED® dyes enable simultaneous functional analysis in GFP-expressing cells or with other green-emitting dyes/labels.

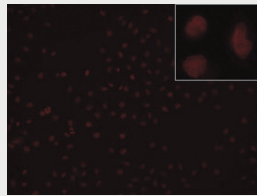
NUCLEAR-ID® Red Cell Cycle Kit (GFP-CERTIFIED®) (ENZ-51008)

- Brighter, more stable red fluorescence yields improved sensitivity
- Highly cell permeable dye minimizes cell density optimization
- Suitable for multiplexing with green fluorophores, including GFP and FITC
- Available as a complete kit with controls or as a stand-alone dye

Brightest Dye for Cell Cycle Analysis



NUCLEAR-ID® Dye (2.5 µM)

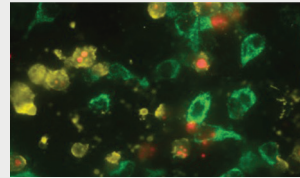


Competitor Dye (2.5 µM)

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
- Assess effects of stem cell isolation and preservation techniques, drug treatment effects, reprogramming modulators

Detect Cell Death in GFP-Expressing Cell Lines



Red nuclear dye acts as a marker of necrosis (loss of membrane integrity), while gold-labeled Annexin V detects apoptosis.

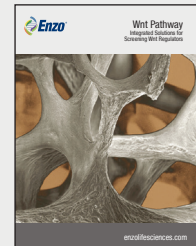
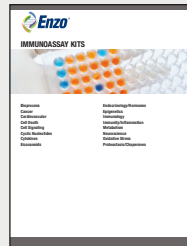
ANTIBODIES

IDENTIFY STEM CELL POPULATIONS WITH MARKERS OF DIFFERENTIATION

Enzo Life Sciences offers a broad range of antibodies for use in all areas of stem cell research. Many are validated for use in key applications such as flow cytometry, immunohistochemistry, immunoprecipitation and Western blotting. Every antibody is backed by our **Worry-Free Antibody Trial Program**, allowing you to evaluate any of our antibodies of interest for your specific application or species without risk.

Stem Cell Markers	Embryonic	Mesenchymal	Hematopoietic	Endothelial Progenitors	Neural Progenitors	Cancer
β1-Integrin	•					
βIII-Tubulin					•	
BCRP	•		•			
CD9	•					
CD14		•		•		
CD31				•		•
CD40		•				
CD44		•				
CD45		•		•		
CD49b/CD29	•					
c-Kit			•			
c-Myc	•					
CXCR4			•			
Dnmt3b	•					
E-cadherin	•					
eNOS				•		
EpCAM						•
Galanin	•					
GFAP					•	
NCAM					•	
Neutrophil Elastase			•			
NGFR		•				
Oct-3/4	•					
PSCA						•
Serpin			•			

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www.enzolifesciences.com

Put our experience to work for you!

Our broad range of scientific expertise and manufacturing capabilities enables us to provide a comprehensive set of solutions for stem cell research.