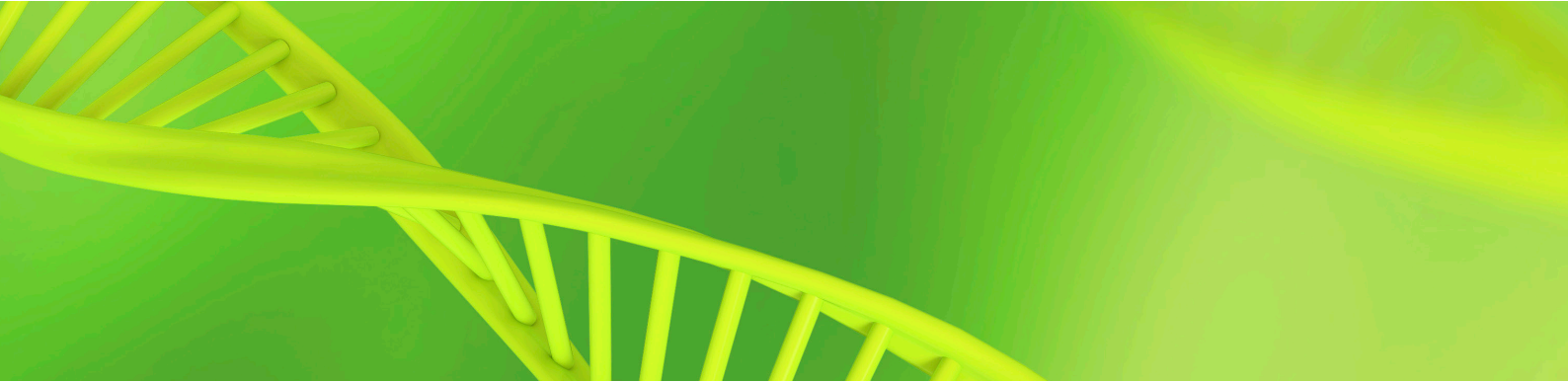




# EPIGENETICS



## **Drug Discovery Assays and Active Enzymes**

Deacetylation

*Chemilum de Lys*<sup>™</sup> HDAC & Sirtuin Assay

*Fluor de Lys*<sup>®</sup> HDAC & Sirtuin Assays

*Color de Lys*<sup>™</sup> HDAC & Sirtuin Assay

Active HDAC & Sirtuin Enzymes

Acetylation/Methylation/Demethylation

SUMOylation

Ubiquitylation

## **Epigenetic Activators and Inhibitors**

Screen-Well<sup>™</sup> Epigenetics Library

HDAC Inhibitors

SIRT Modulators

Other Epigenetic Modulators

## **Antibodies for Detecting Epigenetic Changes**

Ubiquitylation

Lysine Modifications

SUMOylation

DNA Methylation

Histone Modifications

scientists **enabling** scientists.



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# LEADING INNOVATION IN POST-TRANSLATIONAL MODIFICATION DETECTION

Epigenetic modulation of gene expression is one component of the proteostasis network, and is a focus of Enzo's development efforts supported by our expertise in post-translational modification biology and high-quality manufacturing of enzyme activity assays, biochemicals, antibodies, proteins, and peptide synthesis. Our epigenetics portfolio is focused on the enzymology of epigenetic regulation including HDACs, sirtuins, HATs, methyltransferases, and demethylases.

Our revolutionary *Fluor de Lys*<sup>®</sup> HDAC and Sirtuin assays allow simple, nonradioactive measurement of deacetylase activity amenable to automated platforms. These assays are founded upon an industry-leading portfolio of active enzymes and high-purity peptide substrates to deliver the sensitivity needed when dissecting epigenetic pathways. We continue to provide innovative products, such as the new *Chemilum de Lys*<sup>™</sup>, which eliminates false data seen with other detection platforms. In support of screening efforts, our chemists have curated an Epigenetics compound library, a collection of 43 biochemicals with defined activity against epigenetic regulating enzymes, each of which can be supplied individually upon request. Our portfolio of reagents also includes antibodies for the detection of key epigenetic-regulating enzymes and substrates, including modification-specific antibodies for methylated, phosphorylated, or acetylated epitopes.

### Acetylation

Acetyltransferase Activity Assays  
p300/CBP Inhibitors, Activators, and Antibodies

### Deacetylation

*Chemilum de Lys*<sup>™</sup> HDAC & Sirtuin Assay  
*Fluor de Lys*<sup>®</sup> HDAC & Sirtuin Assays  
*Color de Lys*<sup>™</sup> HDAC & Sirtuin Assay  
HDAC Antibodies  
Resveratrol  
Tubacin

### Ubiquitinylation

UbiQapture<sup>™</sup>-Q Kit  
*In Vitro* Ubiquitinylation Kit  
Mono- & Polyubiquitinylation Antibodies

### Demethylation

LSD1 Fluorimetric Drug Discovery Kit  
LSD1 Active Enzyme

### SUMOylation

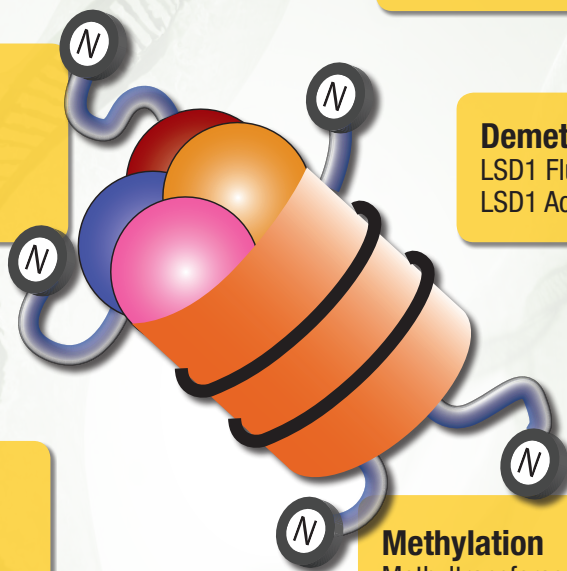
SUMO & PolySUMO-Qapture<sup>®</sup> Kits  
SUMO-Qapture-T<sup>®</sup> Kits  
*In Vitro* SUMOylation Kit  
SUMO 1 & SUMO 2/3 Antibodies

### Methylation

Methyltransferase Activity Assays  
CARM1, PRMT, and SET7/9 Active Enzymes  
Mono- & Tri-methyl-specific Histone Antibodies  
Sinefungin

### Phosphorylation

Phospho-specific Histone Antibodies  
Aurora Kinase Active Enzymes & Inhibitors



# DRUG DISCOVERY ASSAYS AND ACTIVE ENZYMES

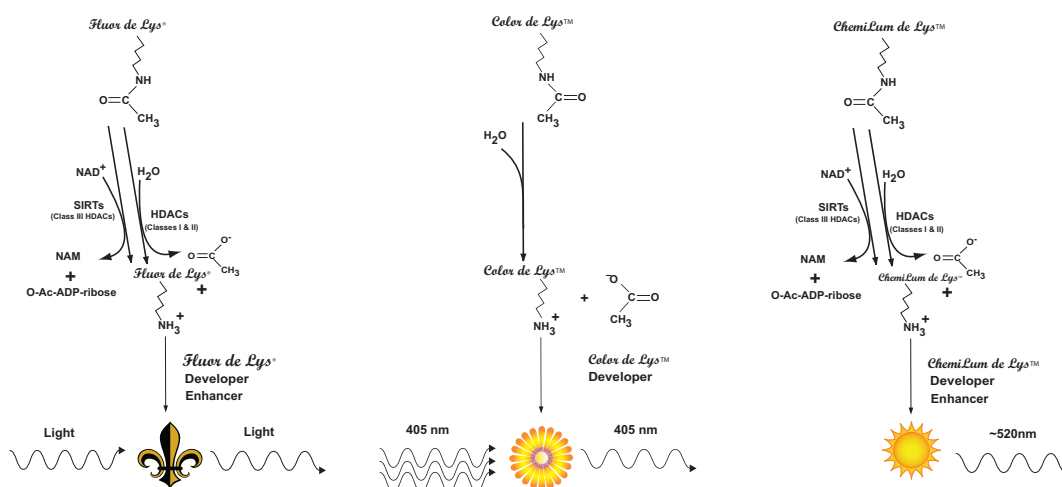
## HDAC & SIRTUIN

### Convenient Screening Formats from the Pioneer in Non-Radioactive HDAC & Sirtuin Assays

For over a decade, the *Fluor de Lys*<sup>®</sup> deacetylase assay platform has revolutionized assay of HDAC & Sirtuin enzyme activity, freeing researchers from cumbersome protocols required with radiolabeled or other modified histone-based methods. Our high-quality assays utilize patented substrate/developer chemistry in combination with high-activity, high-purity enzymes, to deliver more high-quality hits. Broad-class HDAC/Sirtuin screening assays are available in chemiluminescent, fluorescent, and colorimetric formats.

**Choose A Format to Fit Your Needs**

|  |   |   |
|--|---|---|
| <b>Fluorometric</b><br>Robust fluorescent screening assays | <b>Colorimetric</b><br>Option for standard absorbance plate readers | <b>Chemiluminescent</b><br>Ideal for cross-validation of fluorescent assays |
|--|---|---|



| 2001   | 2002   | 2012   |
|--|--|--|
| The <i>Fluor de Lys</i> <sup>®</sup> platform revolutionized the assaying of HDAC and Sirtuin enzyme activity by freeing researchers from cumbersome protocols requiring radioactivity. With an expansive citation record, this is a robust high-throughput screening method for detection of HDAC and Sirtuin modulators. | The <i>Color de Lys</i> <sup>™</sup> assay was developed to meet our customers demand for an easy-to-use, highly sensitive HDAC/SIRT assay that could be used on standard absorbance-based microplate readers. | In answer to the concern over false positives resulting from fluorescent substrates, Enzo Life Sciences developed the <i>ChemiLum de Lys</i> <sup>™</sup> HDAC/SIRT Drug Discovery Kit. This kit delivers superior signal-to-noise with no interference from detergents, protease inhibitors or kinase inhibitors. |



# DEACETYLATION

## Your Best Defense Against False Data

### **Chemilum de Lys™ HDAC/SIRT Chemiluminescent Drug Discovery Kit**

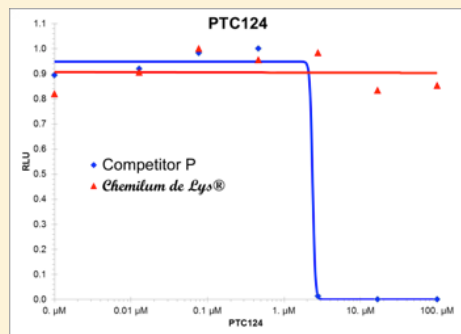
Traditional luciferase- and fluorescence-based screening assays for HDAC and Sirtuin activity are susceptible to the generation of false negatives or positives resulting from the effects of compound(s) being screened on elements of the reporter system (see table below). Based on our patent-pending *Chemilum de Lys™* substrate and developer combination, the HDAC/SIRT Chemiluminescent Drug Discovery Kit provides a chemiluminescent alternative to radiolabeled and HPLC methods for HDAC activity. Discover the key advantages of this simple 3-step assay procedure is designed to measure HDAC and Sirtuin activity in cellular or nuclear extracts, immunoprecipitates, or using purified enzymes.

- High Specificity assay eliminates false positives or negatives (see table)
- 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™*

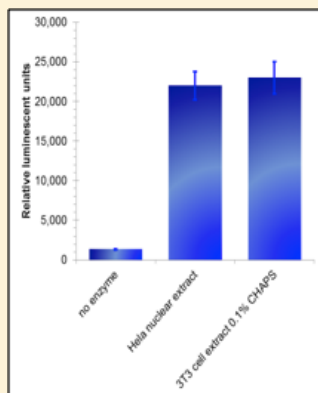
|  | <i>Chemilum de Lys™</i> | Competitor HDAC Assays                  |                    |                    |
|--|-------------------------|---|--------------------|--------------------|
|  |                         | Luciferase-Based Chemiluminescent Assay | Colorimetric Assay | Fluorometric Assay |
| No Artifactual activation by resveratrol | ✓                       | ✓                                       | X                  | X                  |
| Resistant to Protease Inhibitors         | ✓                       | X                                       | ✓                  | ✓                  |
| Resistant to Kinase Inhibitors           | ✓                       | X                                       | ✓                  | ✓                  |

#### Eliminate Interference Seen in Luciferase-based Assays



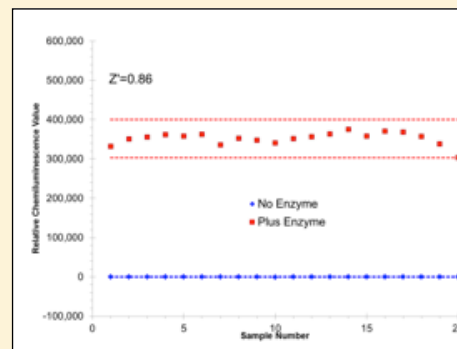
The compound, PTC124, is converted by luciferase in the presence of ATP to a high affinity multi-substrate adduct inhibitor, PTC124-AMP. PTC124 at concentrations greater than 1 µM inhibits the luciferase based assay, but has no effect on the *Chemilum de Lys™* assay

#### Minimize Interference from Lysis Detergents



The *Chemilum de Lys™* assay was performed on HeLa nuclear extract, no enzyme or  $1.5 \times 10^5$  3T3 cells extracted with the 0.1% CHAPS. The HDAC reaction was carried out with 25 µM *Chemilum de Lys™* substrate for 60 minutes at 37° followed by trypsin treatment.

#### Powerful Reproducibility Ensures Consistent Results



Evaluation of Consistency. Z-factor analysis. HeLa nuclear extract (4µg) (red squares) or buffer (blue diamonds) was incubated for 120 minutes at 24°C with 25µM *Chemilum de Lys™*. Reactions were stopped as described in the manual. Enhancer was added and chemiluminescence was read. Dashed lines indicate the 3\*Standard deviation range.

### PRODUCT LISTING

| Product #   | Product Name | Size         |
|---|--------------|--------------|
| <i>Chemilum de Lys™</i> HDAC/SIRT Chemiluminescent Drug Discovery Kit | BML-AK532    | 96 reactions |

# DRUG DISCOVERY ASSAYS AND ACTIVE ENZYMES

## DEACETYLATION

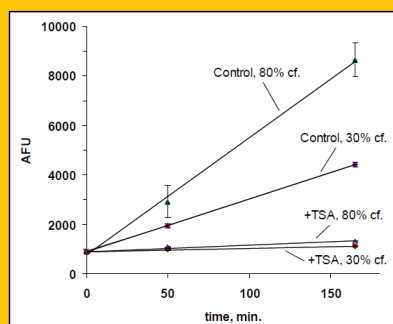
### Lighting the Way to Innovation

#### Fluor de Lys® HDAC Cellular Activity Assay Kit

HDAC activity can vary due to expression level in different cell types. Therefore, cell-based HDAC experiments are especially relevant for their ability to address the natural context of HDAC enzymes.

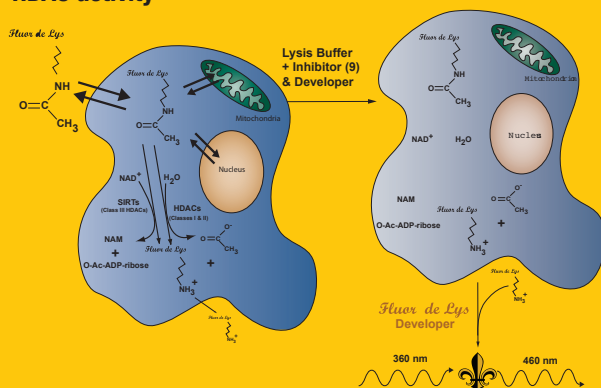
- Cell-permeable substrate for monitoring intracellular deacetylase activity
- Provides accurate activity information reflective of endogenous regulation
- Allows detection of inhibitors or activators that act indirectly to affect deacetylase activity
- Suitable for high throughput analysis

#### Monitor intracellular deacetylase activity over a wide range of cell densities



*Fluor de Lys*® Substrate Deacetylation at Two Cell Densities. HeLa cells were seeded at either  $0.5 \times 10^4$  (30% confluence) or  $2 \times 10^4$  (80% confluence) cells per well and grown two days to the indicated confluences. Cells were then incubated with 200  $\mu\text{M}$  *Fluor de Lys*® Substrate, +/- 1  $\mu\text{M}$  Trichostatin A (BML-GR309), and fluorescence was determined as described in product manual (AFU= Arbitrary Fluorescence units, CytoFluor II, Perseptive Biosystems, Ex. 360 nm, Em. 460 nm, gain 85).

#### A cell permeable substrate for detection of intracellular HDAC activity



## PRODUCT LISTING

### General HDAC/SIRTUIN ASSAY KITS

| Product Name   | Product # | Size         |
|--|-----------|--------------|
| <i>Fluor de Lys</i> ® HDAC Cellular Activity Assay Kit | BML-AK503 | 96 reactions |
| <i>Fluor de Lys</i> ® HDAC Activity Assay Kit          | BML-AK500 | 96 reactions |
| <i>Fluor de Lys</i> ® Green HDAC Activity Assay Kit    | BML-AK530 | 96 reactions |
| Enzyme Specific HDAC/SIRTUIN ASSAY KITS                |           |              |
| <i>Fluor de Lys</i> ® HDAC1 Activity Assay Kit         | BML-AK511 | 96 reactions |
| <i>Fluor de Lys</i> ® HDAC2 Activity Assay Kit         | BML-AK512 | 96 reactions |
| <i>Fluor de Lys</i> ® HDAC3/NCOR1 Activity Assay Kit   | BML-AK531 | 96 reactions |
| <i>Fluor de Lys</i> ® HDAC6 Activity Assay Kit         | BML-AK516 | 96 reactions |
| <i>Fluor de Lys</i> ® HDAC8 Activity Assay Kit         | BML-AK518 | 96 reactions |
| <i>Fluor de Lys</i> ® SIRT1 Drug Discovery Kit         | BML-AK555 | 96 reactions |
| <i>Fluor de Lys</i> ® SIRT2 Drug Discovery Kit         | BML-AK556 | 96 reactions |
| <i>Fluor de Lys</i> ® SIRT3 Drug Discovery Kit         | BML-AK557 | 96 reactions |
| <i>Fluor de Lys</i> ® SIRT5 Drug Discovery Kit         | BML-AK513 | 96 reactions |
| <i>Fluor de Lys</i> ® Green SIRT5 Drug Discovery Kit   | BML-AK514 | 96 reactions |

## Citations

### *Fluor de Lys*® Cellular Assay Citations:

1. S.U. Venkateshaiah, et al.; Exp. Hematol. (2013)
2. S. Balaiya, et al.; Mol. Vis. 18, 114 (2012)
3. A. Purushothaman, et al.; J. Biol. Chem. 286, 30377 (2011)
4. S.J. Greco, et al.; BBRC 414, 170 (2011)
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### Other *Fluor de Lys*® Cellular Assay Citations:

1. G. Liszt, et al. J. Biol. Chem. 280 21313 (2005)
2. M.C. Haigis, et al. Cell 126 941 (2006)
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4. E. Michishita, et al. Mol. Biol. Cell 16 4623 (2005)
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7. B. Schwer, et al. Aging Cell 8 604 (2009)
8. S.C. Kim, et al. Mol. Cell 23 607 (2006)
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## DEACETYLATION

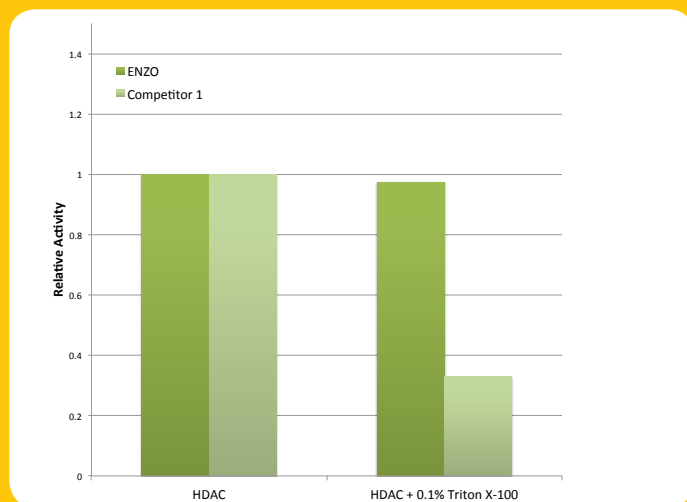
### *Simplicity Delivered.*

#### **Color de Lys™ HDAC Colorimetric Activity Assay Kit**

Color de Lys™ assay is designed to measure HDAC activity in cell or nuclear extracts, immunoprecipitates, or purified enzymes. The included HeLa nuclear extract can be used as a positive control, or as a source of HDACs 1&2 for use in inhibitor screening.

- Simple two-step protocol with < 1 hour time to answer
- Colorimetric readout at 405 nm compatible with most plate readers
- Resistant to detergent interference common to antibody-based assays
- Eliminates need for radioactivity, extractions, and/or chromatography
- Suitable for high throughput analysis

#### **Minimize Interference From Lysis Detergents**



#### **Our Color-de-Lys™ HDAC Colorimetric Assay is Less Sensitive to Detergents than Competitive Antibody-Based Assays**

HeLa nuclear extract (8.3 µg) was added to the substrate and buffer recommended by the manufacturer in the presence or absence of 0.1% Triton X-100®. After 60 minutes at 37°, the reaction was stopped and processed as recommended by the manufacturers.

Triton X-100® showed little or no effect on the Color-de-Lys™ reaction, but caused an apparent 70% inhibition of the antibody-based assay.

### PRODUCT LISTING

| Product Name                                       | Product # | Size         |
|--|-----------|--------------|
| Color-de-Lys™ HDAC colorimetric activity assay kit | BML-AK501 | 96 reactions |

### Citations

1. L. Ortiz, et al.; Allergy 68, 64 (2013)
2. I.M. Munoz, et al.; J. Biol. Chem. 287, 32346 (2012)
3. A. Druz, et al.; Nucleic Acids Res. 40, 7291 (2012)
4. D.W. Perng, et al.; Pulm. Pharmacol. Ther. 25, 312 (2012)
5. H. Fan, et al.; Epigenetics 7, 1379 (2012)
6. A. Spannhoff, et al.; EMBO Rep. 12, 238 (2011)
7. S. Caito, et al.; FASEB J. 24, 3145 (2010)

# DRUG DISCOVERY ASSAYS AND ACTIVE ENZYMES

## HDAC & SIRTUIN

Enzo Life Sciences provides a comprehensive offering of widely cited active HDAC and Sirtuin proteins.

| ACTIVE ENZYMES                                       |             |       |
|--|-------------|-------|
| HDAC & SIRTUIN                                       |             |       |
| Product Name   | Product #   | Size  |
| HDAC (rat liver)                                     | ALX-202-052 | 2 mL  |
| HDAC1 (human), (recombinant) (His-tag)               | BML-SE456   | 50 µg |
| HDAC2 (full-length) (human), (recombinant) (His-tag) | BML-SE533   | 50 µg |
| HDAC2 (human) (1-488), (recombinant) (His-tag)       | BML-SE500   | 50 µg |
| HDAC3 (human), (recombinant) (His-tag)               | BML-SE507   | 50 µg |
| HDAC3 / NCOR1 complex (human), (recombinant)         | BML-SE515   | 50 µg |
| HDAC6 (human), (recombinant) (His-tag)               | BML-SE508   | 50 µg |
| HDAC8 (human), (recombinant)                         | BML-SE145   | 100 U |
| HDAC10 (human) (recombinant) (Histag)                | BML-SE559   | 50 µg |
| HDAC11 (human) (recombinant) (Histag)                | BML-SE560   | 50 µg |
| SIRT1 (human), (recombinant) (His-tag)               | BML-SE239   | 100 U |
| SIRT2 (human), (recombinant) (His-tag)               | BML-SE251   | 500 U |
| SIRT3 (human), (recombinant) (His-tag)               | BML-SE270   | 500 U |
| SIRT5 (human), (recombinant) (His-tag)               | BML-SE555   | 50 KU |

| SUBSTRATES   |           |          |
|--|-----------|----------|
| HDAC & SIRTUIN   |           |          |
| Product Name   | Product # | Size     |
| <i>Fluor-de-Lys</i> <sup>TM</sup> Deacetylase Substrate                    | BML-K104  | 50 µl    |
| <i>Fluor-de-Lys</i> <sup>TM</sup> H4-Ack16 Deacetylase Substrate           | BML-K174  | 0.5 µMol |
| <i>Fluor-de-Lys</i> <sup>TM</sup> HDAC8 Deacetylase Substrate              | BML-K178  | 0.5 µMol |
| <i>Fluor-de-Lys</i> <sup>TM</sup> SIRT1 Deacetylase Substrate              | BML-K177  | 0.5 µMol |
| <i>Fluor-de-Lys</i> <sup>TM</sup> SIRT2 Deacetylase Substrate              | BML-K179  | 0.5 µMol |
| <i>Fluor-de-Lys</i> <sup>TM</sup> -Green substrate                         | BML-KI572 | 50 µl    |
| <i>Fluor-de-Lys</i> <sup>TM</sup> -Succinyl, Desuccinylase Substrate       | BML-KI590 | 50 µl    |
| <i>Fluor-de-Lys</i> <sup>TM</sup> -Succinyl Green, Desuccinylase Substrate | BML-KI591 | 50 µl    |
| <i>Fluor-de-Lys</i> <sup>TM</sup> Developer Concentrate                    | BML-K105  | 300 µl   |
| <i>Fluor-de-Lys</i> <sup>TM</sup> Developer II                             | BML-K176  | 1.25 ml  |

| SUBSTRATE PREFERENCES FOR HDAC & SIRTUIN ENZYMES          |       |       |       |       |       |       |       |                      |           |       |       |        |
|---|-------|-------|-------|-------|-------|-------|-------|----------------------|-----------|-------|-------|--------|
| Substrate   | HDAC  |       |       |       |       |       |       | HeLa nuclear extract | Sirtuin   |       |       |        |
|   | 1     | 2     | 3     | 6     | 8     | 10    | 11    |                      | 1         | 2     | 3     | 5      |
| <i>Fluor-de-Lys</i> <sup>TM</sup> Deacetylase Substrate   | +++   | ++    | ++++  | ++    | +     | ++++  | ++    | ++                   | +         | +     | +     | +      |
| <i>Fluor-de-Lys</i> <sup>TM</sup> H4-Ack16                | +++   | +++   | ++++  | +++++ | +++   | n.d.  | +++   | +++                  | ++++      | +++   | +     | +++    |
| <i>Fluor-de-Lys</i> <sup>TM</sup> HDAC8                   | ++++  | +++++ | ++++  | +++++ | +++++ | n.d.  | +++++ | +++++                | +++       | ++++  | +++   | +++++  |
| <i>Fluor-de-Lys</i> <sup>TM</sup> SIRT1                   | +++++ | +++++ | +++++ | +++++ | +     | +++++ | +++++ | +++++                | +++++     | +++++ | +++   | +++++  |
| <i>Fluor-de-Lys</i> <sup>TM</sup> SIRT2                   | +++   | ++++  | ++++  | ++++  | ++    | +     | +     | ++++                 | ++        | +++++ | +++++ | ++++   |
| <i>Fluor-de-Lys</i> <sup>TM</sup> Substrate Concentration | 5 µM  | 5 µM  | 50 µM | 50 µM | 25 µM | 25 µM | 5 µM  | 25 µM                | 25/500 µM | 25 µM | 10 µM | 500 µM |

## ACETYLATION/METHYLATION/DEMETHYLATION

### High-throughput Assay for Detection of LSD1 Modulators

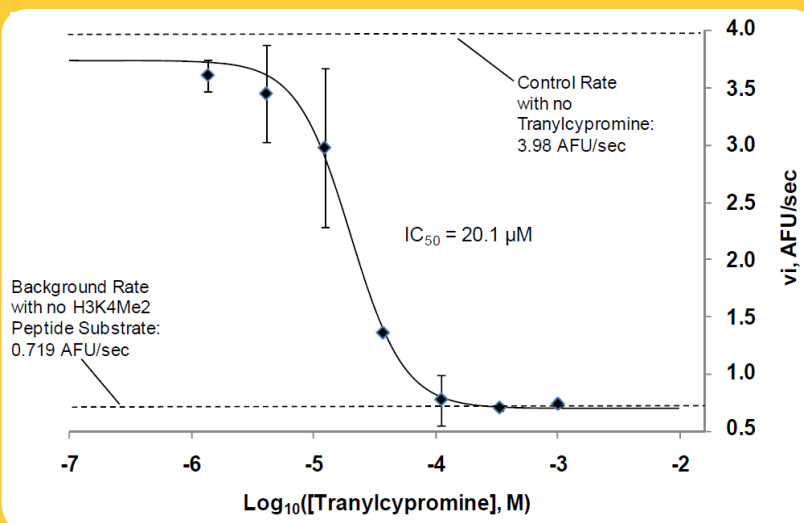
#### LSD1 Fluorometric/Colorimetric Drug Discovery Kit

A CELLestial® Red Hydrogen Peroxide Assay System

The LSD1 Fluorometric Drug Discovery Kit provides all necessary reagents for measuring human LSD1 activity in a sensitive, real-time fluorescent or colorimetric assay. LSD1 is inhibited by a number of established monoamine oxidase inhibitor drugs, including tranylcypromine. That and the fact that its expression is elevated in a number of cancers may make it a promising target for drug development.

- CELLestial® Red Substrate allows real-time fluorometric or colorimetric detection
- Single-step, homogeneous assay ideal for high throughput screening applications
- 1000U of LSD1 supplied with each kit

#### High sensitivity assay for measuring demethylation efficiency



#### Easily Detect Inhibitors of LSD1

Tranylcypromine Inhibition of LSD1. LSD1 enzyme (0.1 µg/µg) was incubated with the indicated concentrations of tranylcypromine for 30 min. at room temperature (23°C). Samples (0.5 µg, 5 µl) were then transferred to wells for the demethylation assay with 20 µM H3K4Me2 peptide. Fluorescence was measured at 47 sec intervals on a CytoFluor™ II fluorescence plate reader (PerSeptive Biosystems, Ex. 530 nm, Em. 590 nm, gain = 60). More details can be found in the product manual posted on [www.enzolifesciences.com](http://www.enzolifesciences.com)

#### RELATED PRODUCTS

| Product Name  | Product # | Size         |
|---|-----------|--------------|
| LSD1 Fluorometric/Colorimetric Drug Discovery Assay | BML-AK544 | 96 reactions |
| LSD1 (KDM1) (human, recombinant)                    | BML-SE544 | 50 µg        |
| Histone H3 dimethyl lysine-4 peptide                | BML-P256  | 0.5 mg       |

#### ACETYLTRANSFERASE/METHYLTRANSFERASE ACTIVITY ASSAYS

|                                   |             |          |
|-----------------------------------|-------------|----------|
| Acetyltransferase Activity Kit    | ADI-907-026 | 96 Wells |
| Methyltransferase Activity Kit    | ADI-907-025 | 96 Wells |
| Methyltransferase HT Activity Kit | ADI-907-032 | 96 Wells |

# DRUG DISCOVERY ASSAYS AND ACTIVE ENZYMES

## SUMOylation

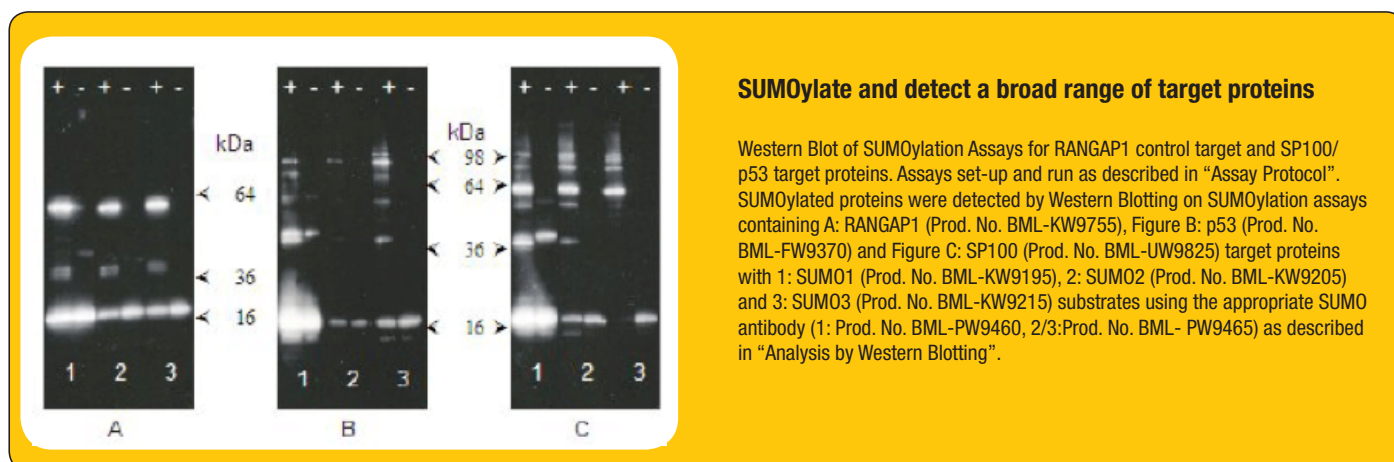
### Modify & Detect With Ease.

#### SUMOylation Kit

Most highly cited kit for generation of SUMOylated proteins *in vitro*

- Fastest assay time on the market, just under 1.5 hr time to answer
- Simple 4-step assay: **Mix** → **Incubate** → **Quench** → **Analyze**
- Versatile kit with multiple applications including:
  - Investigate sumoylation effect on enzyme activity or regulation of cellular processes
  - Identify novel proteins that are targets for sumoylation
  - Generate substrates for deSUMOylating enzymes

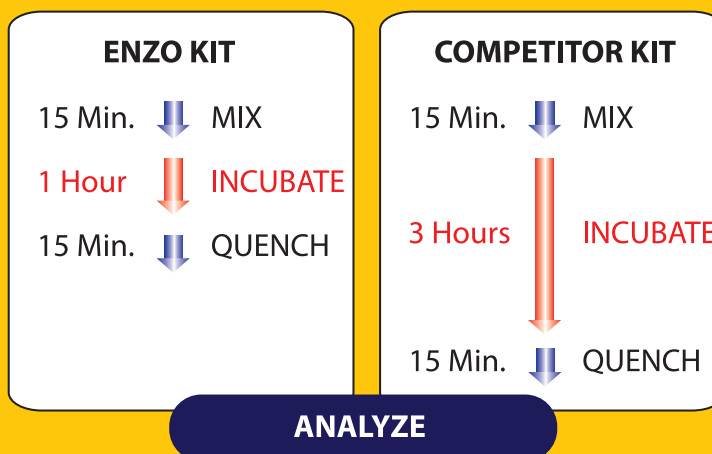
This kit provides a means of generating SUMOylated proteins *in vitro*, by covalent linkage of the carboxy-terminal of SUMO-1, -2 or -3 to specific lysine residues on the target protein via isopeptide bonds, using the SUMOylation enzyme cascade. A control target protein is provided together with all other necessary components. SUMO specific antibodies are provided for detection of SUMOylated proteins via SDS-PAGE and western blotting.



#### Citations

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2. Y.C. Wu, et al.; Cancer Res. 72, 4963 (2012)
3. FN.S. Belaguli, et al.; PLoS One 7, e48019 (2012)
4. C. Luise, et al.; PLoS One 7, e49298 (2012)
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7. Y. Li, et al.; J Cell Biol 199, 589 (2012)
8. E. Sinigalia, et al.; PLoS One 7, e49630 (2012)

#### Enzo Kit Modifies & Detects in Half the Time



| <b>PRODUCT LISTING</b> |                  |              |
|------------------------|------------------|--------------|
| <b>SUMO Assay Kits</b> |                  |              |
| <b>Product Name</b>    | <b>Product #</b> | <b>Size</b>  |
| SUMOylation Kit        | BML-UW8995       | 20 reactions |
| SUMOQaptureT Kit       | BML-UW1000A      | 10 reactions |
| PolySUMOQapture Kit    | BML-UW0955       | 10 reactions |

| <b>PRODUCT LISTING</b>                                     |                  |             |
|--|------------------|-------------|
| <b>SUMO Proteins</b>                                       |                  |             |
| <b>Product Name</b>  | <b>Product #</b> | <b>Size</b> |
| SP100 fragment (human), (recombinant) (GST-tag)            | BML-UW9825       | 100 µg      |
| SUMO activating enzyme E1 (human), (recombinant) (His-tag) | BML-UW9330       | 25 µg       |
| SUMO chains SUMO poly                                      | BML-UW9670       | 25 µg       |
| SUMO chains SUMO poly                                      | BML-UW9675       | 25 µg       |
| SUMO-1 (human) (1-097), (recombinant)                      | ALX-201-045      | 500 µg      |
| SUMO-1 (human) (1-101), (recombinant)                      | ALX-201-044      | 250 µg      |
| SUMO-1 (human), (recombinant) (agarose immobilized)        | BML-UW0095       | 0.5 ml      |
| SUMO-1 (human), (recombinant) (biotin conjugate)           | BML-UW0545       | 100 µg      |
| SUMO-1 (human), (recombinant) (GST-tag)                    | BML-UW0160       | 500 µg      |
| SUMO-1 (human), (recombinant) (His-tag)                    | BML-UW9195       | 500 µg      |
| SUMO-1 [E93R] (human), (recombinant) (GST-tag)             | BML-UW0175       | 100 µg      |
| SUMO-1 activating enzyme (human), (recombinant)            | ALX-201-090      | 10 µg       |
| SUMO-1 aldehyde  | BML-UW0060       | 25 µg       |
| SUMO-1 pro (human), (recombinant) (His-tag)                | BML-UW9190       | 500 µg      |
| SUMO-1-AMC   | BML-UW0040       | 25 µg       |
| SUMO-2 (human) (1-93), (recombinant)                       | ALX-201-089      | 500 µg      |
| SUMO-2 (human) (1-95), (recombinant)                       | ALX-201-088      | 250 µg      |
| SUMO-2 (human) (recombinant) (GST-tag)                     | BML-UW0165       | 500 µg      |

# DRUG DISCOVERY ASSAYS AND ACTIVE ENZYMES

## UBIQUITINYLATION

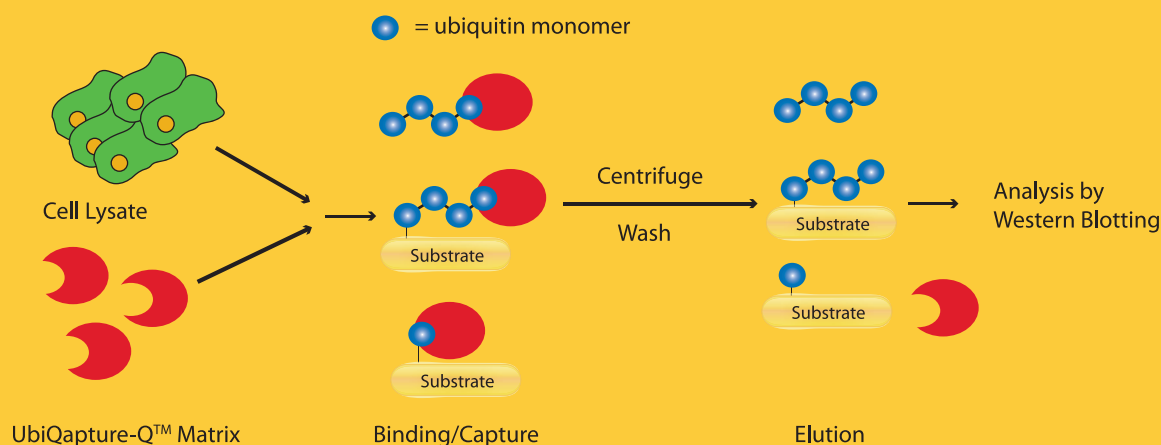
### *Capture the full range of Ubiquitin-protein conjugates*

#### UbiQapture™-Q kit

For isolation and enrichment of mono- and poly-ubiquitinated proteins

- Superior binding characteristics unlike other commercially available kits which only capture long polyubiquitin chain-conjugated proteins
- Provides high efficiency performance with minimal non-specific binding
- Compatible with a wide range of lysate buffers and cell/tissue samples from a variety of species

#### Easy 3-step process: Capture, Concentrate and Detect



#### PRODUCT LISTING

##### UBIQUITIN ASSAY KITS

| Product Name                                  | Product #   | Size         |
|---|-------------|--------------|
| UbiQapture-Q kit                              | BML-UW8995  | 20 x 20 µl   |
| Ubiquitinylation kit                          | BML-UW9920  | 50 x 50 µl   |
| Ubiquitin conjugating kit (HeLa lysate-based) | BML-UW9915  | 20 x 50 µl   |
| Autoubiquitinylation kit                      | BML-UW0970  | 10 reactions |
| Ubiquitin activating kit                      | BML-UW0400A | 96 reactions |
| NEDDylation Kit                               | BML-UW0590  | 20 reactions |

#### Citations:

1. A. Mouri, et al.; J. Neurosci 32, 4562 (2012)
2. D.R. Kelley & M. Estelle; Plant Physiol. 160, 47 (2012)
3. B. Shu, et al.; J. Cell Sci. 124, 3428 (2011)
4. J. Rougier, et al.; J. Biol. Chem. 286, 8829 (2011)
5. B.M. Riederer, et al.; Exp. Biol. Med. 236, 268 (2011)
6. P.L. Butler and R.K. Mallampalli; J. Biol. Chem. 285, 6246 (2010)
7. M. Zhang, et al.; J. Biol. Chem. 285, 8703 (2010)
8. E. Lomonosova, et al.; Mol. Cancer Res. 7, 1268 (2009)



| PRODUCT LISTING  |            |        |   |            |        |
|--|------------|--------|---|------------|--------|
| UBIQUITIN & UBIQUITIN LIKE PROTEINS  |            |        |   |            |        |
| Product Name   | Product #  | Size   | Product Name  | Product #  | Size   |
| Ubc9 (human), (recombinant) (untagged)   | BML-UW9320 | 100 µg | Tri-ubiquitin (linear)  | BML-UW0780 | 100 µg |
| UbcH1 (human), (recombinant) (His-tag)   | BML-UW9020 | 100 µg | Tetra-ubiquitin (K48-linked)                                      | BML-UW8645 | 25 µg  |
| NEDD8 pro (human), (recombinant) (GST-tag)   | BML-UW8740 | 100 µg | Tetra-ubiquitin (K63-linked)                                      | BML-UW0715 | 25 µg  |
| NEDD8 pro (human), (recombinant) (His-tag)   | BML-UW9220 | 500 µg | Tetra-ubiquitin (linear)  | BML-UW0785 | 100 µg |
| Ubiquitin  | BML-UW8795 | 5 mg   | Penta-ubiquitin (linear)  | BML-UW0790 | 100 µg |
| Ubiquitin (bovine), (native) (methylated)  | BML-UW8555 | 1 mg   | Hexa-ubiquitin (linear)   | BML-UW0795 | 100 µg |
| Ubiquitin (human), (recombinant) (GST-tag)   | BML-UW8620 | 1 mg   | Hepta-ubiquitin (linear)  | BML-UW0800 | 100 µg |
| Ubiquitin (human), (recombinant) (His-tag)   | BML-UW8610 | 1 mg   | Octa-ubiquitin (linear)   | BML-UW0805 | 100 µg |
| Ubiquitin, (agarose immobilized)   | BML-UW8630 | 0.5ml  | Nona-ubiquitin (linear)   | BML-UW0810 | 100 µg |
| Ubiquitin, (biotinylated)  | BML-UW8705 | 100 µg | Deca-ubiquitin (linear)   | BML-UW0815 | 100 µg |
| Chloroethyl ubiquitin (HA-tag)   | BML-UW0885 | 25 µg  | Poly-ubiquitin chains (Ub <sub>2-16</sub> ) (K48-linked)          | BML-UW0670 | 100 µg |
| Ubiquitin (human, fluorescein labeled)   | BML-UW1240 | 100 µg | Poly-ubiquitin chains (Ub <sub>2-7</sub> ) (K48-linked)           | BML-UW8860 | 100 µg |
| Ubiquitin (human, recombinant)   | BML-UW0280 | 1 mg   | Poly-ubiquitin chains (Ub <sub>2-7</sub> ) (K63-linked)           | BML-UW9570 | 100 µg |
| Ubiquitin vinyl methyl ester, (HA-tag)   | BML-UW0880 | 25 µg  | Ubiquitin K06-only (human), (recombinant) (untagged)              | BML-UW0210 | 1 mg   |
| Ubiquitin vinyl sulfone, (HA-tag)  | BML-UW0155 | 25 µg  | Ubiquitin K11-only (human), (recombinant) (untagged)              | BML-UW0215 | 1 mg   |
| Ubiquitin aldehyde, (recombinant)  | BML-UW8450 | 50 µg  | Ubiquitin K27-only (human), (recombinant) (untagged)              | BML-UW0220 | 1 mg   |
| Ubiquitin-Rhodamine  | BML-SE761  | 25 µg  | Ubiquitin K29-only (human), (recombinant) (untagged)              | BML-UW0225 | 1 mg   |
| Ubiquitin [D77] (human), (recombinant) (untagged)  | BML-UW0345 | 1 mg   | Ubiquitin K33-only (human), (recombinant) (untagged)              | BML-UW0230 | 1 mg   |
| Ubiquitin [K <sup>06</sup> R] (human), (recombinant) (untagged)                                      | BML-UW0245 | 1 mg   | Ubiquitin K48-only (human), (recombinant) (untagged)              | BML-UW0235 | 1 mg   |
| Ubiquitin [K <sup>11</sup> R] (human), (recombinant) (untagged)                                      | BML-UW0250 | 1 mg   | Ubiquitin K63-only (human), (recombinant) (untagged)              | BML-UW0240 | 1 mg   |
| Ubiquitin [K <sup>27</sup> R] (human), (recombinant) (untagged)                                      | BML-UW0255 | 1 mg   | Ubn-ubiquitinated substrate                                       | BML-UW0610 | 25 µg  |
| Ubiquitin [K <sup>29</sup> R] (human), (recombinant) (untagged)                                      | BML-UW0260 | 1 mg   | ([K <sup>6</sup> -only]Ub) <sub>n</sub> -ubiquitinated substrate  | BML-UW0615 | 25 µg  |
| Ubiquitin [K <sup>33</sup> R] (human), (recombinant) (untagged)                                      | BML-UW0265 | 1 mg   | ([K <sup>11</sup> -only]Ub) <sub>n</sub> -ubiquitinated substrate | BML-UW0620 | 25 µg  |
| Ubiquitin [K <sup>63</sup> R] (human), (recombinant) (untagged)                                      | BML-UW0275 | 1 mg   | ([K <sup>27</sup> -only]Ub) <sub>n</sub> -ubiquitinated substrate | BML-UW0625 | 25 µg  |
| Ubiquitin [K <sup>all</sup> R] (human), (recombinant) (untagged)                                     | BML-UW0205 | 1 mg   | ([K <sup>29</sup> -only]Ub) <sub>n</sub> -ubiquitinated substrate | BML-UW0630 | 25 µg  |
| Ubiquitin <sup>+1</sup> , (recombinant) (His-tag)  | BML-UW8790 | 100 µg | ([K <sup>33</sup> -only]Ub) <sub>n</sub> -ubiquitinated substrate | BML-UW0635 | 25 µg  |
| Ubiquitin <sub>5</sub> <sup>+1</sup> (recombinant) (His-tag)   | BML-UW8855 | 25 µg  | ([K <sup>48</sup> -only]Ub) <sub>n</sub> -ubiquitinated substrate | BML-UW0640 | 25 µg  |
| Ubiquitin activating enzyme E1 (human), (recombinant) (His-tag)                                      | BML-UW9410 | 50 µg  | ([K <sup>63</sup> -only]Ub) <sub>n</sub> -ubiquitinated substrate | BML-UW0645 | 25 µg  |
| [(N <sup>ε</sup> -biotinyl)Lys <sup>6</sup> ]Ubiquitin   | BML-UW8470 | 100 µg | Polyubiquitin chains Ub <sub>2-7</sub> linear recombinant         | BML-UW1010 | 100 µg |
| [(N <sup>ε</sup> -biotinyl)Lys <sup>6</sup> , (N <sup>ε</sup> -biotinyl)Lys <sup>48</sup> ]Ubiquitin | BML-UW8475 | 100 µg | Ubiquitinconjugating enzyme sampler pack                          | BML-UW8975 | 1 pack |
| [(N <sup>ε</sup> -biotinyl)Lys <sup>6</sup> , (N <sup>ε</sup> -biotinyl)Lys <sup>63</sup> ]Ubiquitin | BML-UW8480 | 100 µg | Ubiquitin binding entities, sampler pack                          | BML-UW0120 | 1 pack |
| Di-ubiquitin (K48-linked)  | BML-UW9800 | 100 µg | Linear polyubiquitin chains sampler pack                          | BML-UW0825 | 1 pack |
| Di-ubiquitin (K63-linked)  | BML-UW0730 | 50 µg  | Ubiquitinconjugating enzyme sampler pack                          | BML-UW8975 |        |
| Di-ubiquitin (linear)  | BML-UW0775 | 100 µg |   |            |        |
| Tri-ubiquitin (K63-linked)   | BML-UW0745 | 50 µg  |   |            |        |

# EPIGENETIC ACTIVATORS AND INHIBITORS

## Benchmark Against Known Epigenetic Modulators

### Epigenetics Compound Library

The Screen-Well® Epigenetics library is a curated set of compounds with defined activity against epigenetic modulating enzymes. It is a convenient tool for use with HDAC & Sirtuin drug discovery kits:

- Contains 43 compounds with defined activity against lysine-modifying enzymes and DNA methylation inhibitors
- Available in 100 uL and 500 uL formats, dissolved in DMSO
- Includes a variety of structurally and mechanistically different compound classes targeting HDACs, SIRTs, HATs, HMTs, DNAMTs, and Lysine demethylases



We offer a diverse collection of Epigenetic pathway targeting compounds.

| COMPOUND LIBRARY                 |           |                          |
|----------------------------------|-----------|--------------------------|
| Product Name                     | Product # | Size                     |
| Screen-Well® Epigenetics Library | BML-2836  | 100 µg/well, 500 µg/well |

| HDAC INHIBITORS              |             |                                    |                |
|------------------------------|-------------|------------------------------------|----------------|
| Product Name                 | Product #   | Activity                           | Size           |
| Tubacin                      | BML-GR362   | HDAC inhibitor                     | 100 µg, 500 µg |
| Trichostatin A               | BML-GR309   | HDAC inhibitor                     | 1 mg, 5 mg     |
| Trichostatin C               | ALX-280-239 | HDAC inhibitor                     | 0.5 mg         |
| M344                         | ALX-270-297 | HDAC inhibitor                     | 1 mg, 5 mg     |
| Phenylbutyrate sodium        | BML-EI320   | HDAC inhibitor                     | 1g             |
| Niltubacin                   | BML-GR363   | HDAC inhibitor                     | 100 µg, 500 µg |
| Apicidin                     | BML-GR340   | HDAC inhibitor                     | 1 mg, 5 mg     |
| Scriptaid                    | BML-GR326   | HDAC inhibitor                     | 1 mg, 5 mg     |
| Oxamflatin                   | ALX-270-379 | HDAC inhibitor                     | 1 mg, 5 mg     |
| Suberoyl bis-hydroxamic acid | BML-GR323   | HDAC inhibitor                     | 100 µg, 500 µg |
| BML-210                      | BML-GR330   | HDAC inhibitor                     | 1 mg, 5 mg     |
| HC Toxin                     | BML-GR320   | HDAC inhibitor                     | 1 mg           |
| Splitomicin                  | BML-GR331   | HDAC inhibitor                     | 5 mg, 25 mg    |
| ITSA-1                       | BML-GR350   | HDAC inhibitor                     | 25 mg, 100 mg  |
| Nullscript                   | BML-GR327   | HDAC inhibitor                     | 1 mg, 5 mg     |
| Depudecin                    | BML-EI319   | HDAC inhibitor                     | 100 µg         |
| Sodium butyrate              | ALX-270-301 | HDAC inhibitor. Apoptosis inducer. | 1g             |
| MS-275                       | ALX-270-378 | HDAC1 inhibitor                    | BULK           |
| MC1293                       | ALX-270-344 | HDAC1 inhibitor                    | 5 mg           |
| BML-281                      | BML-GR361   | HDAC6 inhibitor                    | 1 mg, 5 mg     |

| SIRT MODULATORS  |             |                               |                   |
|--|-------------|-------------------------------|-------------------|
| Product Name   | Product #   | Activity                      | Size              |
| Resveratrol  | BML-FR104   | Antioxidant. SIRT1 activator. | 100 µg, 500 µg    |
| BML-278  | BML-GR359   | SIRT activator                | 5 mg, 25 mg       |
| Triacetyl resveratrol                                  | BML-FR119   | SIRT activator                | 10 mg, 50 mg      |
| Sirtinol   | ALX-270-308 | SIRT inhibitor                | 1 mg, 5 mg, 25 mg |
| BML-266  | BML-GR346   | SIRT inhibitor                | 10 mg, 50 mg      |
| 6-Chloro-2,3,4,9-tetrahydro-1H-carbazole-1-carboxamide | ALX-270-437 | SIRT inhibitor                | 1 mg              |
| Aristoforin  | ALX-350-129 | SIRT inhibitor                | 1 mg              |

| OTHER EPIGENETIC MODULATORS         |             |   |                      |
|-------------------------------------|-------------|---|----------------------|
| Product Name                        | Product #   | Activity  | Size                 |
| AGK2                                | ALX-270-484 | SIRT2 inhibitor   | 1 mg, 5 mg           |
| B2                                  | ALX-270-485 | SIRT2 inhibitor   | 0.5 mg               |
| Piceatannol                         | ALX-270-202 | Syk inhibitor. SIRT1 activator.                               | 1 mg, 5 mg, 50 mg    |
| Valproic acid . sodium salt         | ALX-550-304 | Anticonvulsant and anti-depressant                            | 5g                   |
| Celastrol                           | ALX-350-332 | Anti-inflammatory and immunosuppressive                       | 5 mg, 25 mg          |
| Quercetin . dihydrate               | ALX-385-001 | Antioxidant flavonoid   | 5g, 25g              |
| Pristimerin                         | ALX-350-411 | Antitumor agent   | 5 mg, 25 mg          |
| Betulinic acid (High Purity)        | ALX-350-277 | Antitumor and anti-HIV agent                                  | 5 mg, 25 mg, 100 mg  |
| Tranylcypromine                     | BML-EI217   | Demethylase inhibitor   | 1g, 5g               |
| O <sub>6</sub> -Benzylguanine       | ALX-480-019 | DNA alkyltransferase substrate and inhibitor                  | 10 mg                |
| Zebularine                          | BML-GR344   | Dnmt inhibitor  | 10 mg                |
| Kendomycin                          | ALX-380-066 | Endothelin receptor antagonist                                | 500 µg               |
| BIX 01294                           | ALX-270-473 | G9a histone methyltransferase inhibitor                       | 2 mg, 10 mg          |
| Compound A                          | ALX-550-516 | Glucocorticoid receptor modulator                             | 5 mg, 25 mg          |
| Garcinol                            | BML-GR343   | HAT inhibitor   | 10 mg, 50 mg         |
| Thielavin B                         | ALX-350-340 | Inhibitor of Glucose-6-phosphatase and PLC                    | 0.5 mg               |
| Butyrolactone 3                     | ALX-270-411 | Inhibitor of histone acetyltransferase Gcn5                   | 5 mg                 |
| beta-Rubromycin                     | ALX-380-067 | Inhibitor of HIV-1 reverse transcriptase and human telomerase | 1 mg, 5 mg           |
| Curcumin (high purity)              | ALX-350-028 | Inhibitor of Lipoxygenase and COX                             | 10 mg, 50 mg, 250 mg |
| (-)-Epigallocatechin gallate        | ALX-270-263 | Inhibitor of NOS, telomerase and Dnmt                         | 10 mg, 50 mg         |
| Nutlin03                            | ALX-430-128 | Inhibitor of p53/MDM2 interaction                             | 1 mg, 5 mg, 25 mg    |
| Epoxomicin                          | BML-PI127   | Key inhibitor for use in proteasome research.                 | 100 µg               |
| Betulinic acid 1                    | ALX-350-298 | Proteasome activator  | 0.1 mg, 0.5 mg, 1 mg |
| <i>clasto</i> Lactacystin β-Lactone | BML-PI108   | Proteasome inhibitor  | 100 µg               |
| Lactacystin (native)                | ALX-350-245 | Proteasome inhibitor  | 100 mg, 500 mg, 1g   |
| Gliotoxin                           | BML-PI129   | Proteasome inhibitor  | 2 mg, 10 mg          |
| Hypothenycin                        | ALX-380-116 | MEK inhibitor   | 250 µg, 1 mg         |
| Sinefungin                          | ALX-380-070 | Methyltransferase inhibitor                                   | 1 mg, 5 mg           |
| Chaetocin                           | BML-GR349   | Methyltransferase inhibitor                                   | 200 µg               |
| CTPB                                | ALX-420-033 | p300 HAT activator  | 1 mg, 5 mg           |
| Suramin . hexasodium salt           | ALX-430-022 | Purinergic receptor inhibitor                                 | 50 mg, 250 mg, 1 g   |
| BPPA                                | BML-GR321   | Telomerase inhibitor  | 25 mg                |
| Butein                              | ALX-350-246 | Tyrosine kinase inhibitor                                     | 10 mg                |
| BML-282                             | BML-EI400   | UCH inhibitor   | 5 mg                 |
| TCID                                | BML-EI399   | UCH-L3 inhibitor  | 10 mg, 50 mg         |

# ANTIBODIES FOR DETECTING EPIGENETIC CHANGES

## UBIQUITIN & UBIQUITIN MODIFICATION ANTIBODIES

### Go For the Gold!

#### Mono- and Polyubiquitinated Conjugates (FK2)

The gold standard antibody for detection of ubiquitinated proteins

- Detect K<sup>29</sup>-, K<sup>48</sup>-, and K<sup>63</sup>-linked mono- and polyubiquitinated proteins
- Most cited multi-ubiquitin antibody with over 500 citations
- Validated for WB, IP, IHC and ELISA applications
- Available as HRP, biotin, ATTO 488, and FITC conjugates

This monoclonal antibody to Mono- and Polyubiquitinated Conjugates (FK2) has been extensively characterized by one-dimensional Western blotting and has been shown to recognize K29-, K48-, and K63-linked polyubiquitinated and monoubiquitinated proteins but not free ubiquitin. It has been used for a wide range of applications including immunoprecipitation, ELISA and western blot. FK2 is available with a variety of labels to meet your specific research needs.



**The FK2 clone has been validated for a variety of applications including Western Blot analysis**

Western blot of multi-ubiquitin chains using MAb to Polyubiquitinated Conjugates (FK1) (Prod. No. BML-PW8805) (lanes A-C) and MAb to Mono- and Polyubiquitinated Conjugates (FK2) (Prod. No. BML-PW8810) (lanes D-F). Lanes A & D: K48-linked chains. Lanes B & E: K49-linked chains. Lanes C & F: K63-linked chains.

#### Citations:

1. Aillet, F et al; PLoS One. 7 ( 2012)
2. T. Wenger et al.; Autophagy 8, 350 (2012); 8:350 - 363
3. L.R. Butler et al; EMBO 31, 3918 (2012)
4. K. Tamai, et al.; Am. J. Pathol. 173, 1806 (2008)
5. Matsumoto, M. et al.; Proteomics 5, 4145 (2005)

### ANTIBODIES FOR DETECTION OF:

#### UBIQUITIN AND UBIQUITIN MODIFICATION

| Product Name   | Product #  | Size          |
|--|------------|---------------|
| Mono and polyubiquitinated conjugates mAb FK fluorescein labeled       | BML-PW1210 | 25 µl         |
| Mono- and polyubiquitinated conjugates, mAb (FK2)                      | BML-PW8810 | 500 µg        |
| Mono- and polyubiquitinated conjugates, mAb (FK2) (ATTO 488 conjugate) | BML-PW1335 | 25 µl         |
| Mono- and polyubiquitinated conjugates, mAb (FK2) (HRP conjugate)      | BML-PW0150 | 25 µg, 100 µg |
| Mono- and polyubiquitinated conjugates, mAb (FK2) (biotin conjugate)   | BML-PW0755 | 25 µl, 100 µl |
| Polyubiquitinated conjugates, mAb (FK1) (fluorescein labeled)          | BML-PW1215 | 25 µl         |
| Polyubiquitinated conjugates, mAb (FK1)                                | BML-PW8805 | 500 µg        |

#### UBIQUITIN AND UBIQUITIN MODIFICATION

| Product Name       | Product #  | Size          | Product Name   | Product #   | Size          |
|--------------------|------------|---------------|--|-------------|---------------|
| AMSH (human), pAb  | BML-PW0655 | 25 µl, 100 µl | NEDD8 (human), pAb   | BML-PW9340  | 25 µl, 100 µl |
| CYLD (human), pAb  | BML-PW0760 | 25 µl, 100 µl | NEDD8, pAb   | ALX-210-194 | 200 µl        |
| FAT10, pAb         | BML-PW9585 | 25 µl, 100 µl | Parkin (human), pAb  | BML-PW9365  | 25 µl, 100 µl |
| FAT10, pAb         | BML-PW9680 | 25 µl, 100 µl | Polyubiquitin (K63-linkage-specific), mAb (HWA4C4)                 | BML-PW0600  | 25 µl, 100 µl |
| Fub1 (human), pAb  | BML-PW9615 | 25 µl, 100 µl | Polyubiquitin (K63-linkage-specific), mAb (HWA4C4) (HRP conjugate) | BML-PW0605  | 25 µg, 100 µg |
| Huwe1 mouse pAb    | BML-PW0950 | 25 µl, 100 µl | Ub+1, pAb  | BML-PW9780  | 25 µl, 100 µl |
| ISG15 (human), pAb | BML-PW9575 | 25 µl, 100 µl | UBA6 (human), pAb  | BML-PW0525  | 25 µl, 100 µl |
| MYSM1 (human), pAb | BML-PW0660 | 25 µl, 100 µl | Ubc9, pAb  | ALX-210-233 | 50 µg         |
|                    |            |               | Ubiquitin activating enzyme (CT), pAb                              | BML-PW8395  | 25 µl         |

## EPIGENETIC MODIFICATION ANTIBODIES

### ANTIBODIES FOR DETECTION OF:

#### UBIQUITIN AND UBIQUITIN MODIFICATION

| Product Name   | Product #       | Size          |
|--|-----------------|---------------|
| Ubiquitin activating enzyme (NT), pAb                | BML-PW8385      | 25 µl, 100 µl |
| Ubiquitin activating enzyme, pAb                     | BML-PW8390      | 25 µl, 100 µl |
| Ubiquitin conjugating enzyme UbcH1, pAb              | BML-UG9520      | 25 µl, 100 µl |
| Ubiquitin mAb EX fluorescein labeled                 | BML-PW1225      | 25 µl         |
| Ubiquitin mAb EX9                                    | BML-PW0580      | 25 µl         |
| Ubiquitin mAb EX9 HRP conjugate                      | BML-PW0835      | 25 µl         |
| Ubiquitin, mAb (P4D1)                                | BML-PW0930      | 100 µg, 1 mg  |
| Ubiquitin, mAb (P4D1) (fluorescein labeled)          | BML-PW1220      | 25 µl         |
| Ubiquitin, mAb (P4D1) (HRP conjugate)                | BML-PW0935      | 25 µl, 100 µl |
| Ubiquitin, mAb (P4G7-H11)                            | ADI-SPA-203     | 50 µg, 200 µg |
| Ubiquitin, pAb                                       | ADI-SPA-200     | 50 µg, 200 µg |
| Ubiquitin, pAb (DyLight™ 488 conjugate)              | ADI-SPA-200-488 | 50 µg, 200 µg |
| Ubiquitin, pAb (PE conjugate)                        | ADI-SPA-200PE   | 50 µg, 200 µg |
| Ubiquitin-protein conjugates pAb fluorescein labeled | BML-PW1235      | 25 µl         |
| Ubiquitin-protein conjugates, pAb                    | BML-UG9510      | 100 µl        |
| Ubl5 (human), pAb                                    | BML-PW9605      | 25 µl, 100 µl |
| Urm1 (human), pAb                                    | BML-PW9595      | 25 µl         |
| Use1 (human), pAb                                    | BML-PW0770      | 25 µl, 100 µl |

#### LYSINE MODIFICATIONS

| Product Name                              | Product #       | Size   |
|---|-----------------|--------|
| Acetylated Lysine, pAb                    | ADI-KAP-TF120   | 100 µg |
| Acetylated Lysine, pAb (biotin conjugate) | ADI-KAP-TF1201B | 100 µg |
| Acetylated Lysine, pAb (HRP conjugate)    | ADI-KAP-TF1203  | 100 µg |
| Acetyl-lysine, pAb                        | BML-SA615       | 100 µl |
| Acetyl-Lysine, pAb                        | BML-SA440       | 400 µl |
| Acetyl-lysine, pAb (affinity purified)    | BML-SA627       | 100 µl |
| Butyryl-lysine, pAb (affinity purified)   | BML-SA682       | 100 µl |
| Dimethyl-lysine, pAb                      | BML-SA667       | 100 µl |
| Dimethyl-lysine, pAb (affinity purified)  | BML-SA668       | 50 µg  |
| Methylated Lysine, pAb                    | ADI-KAP-TF121   | 100 µg |
| Methylated Lysine, pAb (biotin conjugate) | ADI-KAP-TF1211B | 100 µg |
| Methylated Lysine, pAb (HRP conjugate)    | ADI-KAP-TF1213  | 100 µg |

#### SUMO PROTEINS OR MODIFICATIONS

| Product Name                                       | Product #   | Size          |
|--|-------------|---------------|
| SUMO-1 (human) (CT), pAb                           | BML-PW9460  | 25 µl, 100 µl |
| SUMO-1 (human) (NT), pAb                           | BML-PW8330  | 25 µl, 100 µl |
| SUMO-1 (human), pAb                                | BML-PW0505  | 25 µl, 100 µl |
| SUMO-1 activating enzyme subunit SAE1 (human), pAb | ALX-210-328 | 50 µg         |
| SUMO-2 (human), pAb                                | BML-PW0510  | 25 µl, 100 µl |
| SUMO-2/3 (human) (NT), pAb                         | BML-PW9465  | 25 µl, 100 µl |
| SEN6 (human), pAb                                  | BML-PW0370  | 25 µl, 100 µl |
| Sp100 (human), pAb                                 | BML-PW0325  | 25 µl, 100 µl |
| Sp100 (SUMO modified) (human), pAb                 | BML-PW0330  | 25 µl, 100 µl |

## EPIGENETIC MODIFICATION ANTIBODIES, CONT'D.

### ANTIBODIES FOR DETECTION OF:

#### DNA METHYLATION

| Product Name        | Product #   | Size   |
|---------------------|-------------|--------|
| Dnmt1, mAb          | ALX-804-369 | 100 µg |
| Dnmt3a (mouse), mAb | ALX-804-370 | 100 µg |
| Dnmt3b, mAb         | ALX-804-233 | 100 µg |

#### HDAC & SIRTUIN

| Product Name           | Product #   | Size   |
|------------------------|-------------|--------|
| HDAC1, mAb             | ALX-804-599 | 200 µg |
| HDAC1, pAb             | BML-SA401   | 100 µg |
| HDAC2, pAb             | BML-SA402   | 100 µg |
| HDAC3, pAb             | BML-SA403   | 100 µg |
| HDAC4 (NT), pAb        | ALX-210-339 | 100 µg |
| HDAC4, pAb             | BML-SA404   | 100 µg |
| HDAC5, pAb             | ALX-210-340 | 100 µg |
| HDAC6, pAb             | ALX-210-341 | 100 µg |
| SIRT1 (human), pAb     | BML-SA427   | 100 µl |
| SIRT2 (human), pAb     | BML-SA444   | 100 µl |
| SIRT3, pAb             | BML-SA463   | 100 µl |
| SIRT5, pAb             | BML-SA464   | 100 µl |
| Sirtuin 6 (human), mAb | ALX-804-771 | 50 µg  |

#### HISTONE & HISTONE MODIFICATIONS

| Product Name                                 | Product #     | Size   |
|--|---------------|--------|
| Histone H2AX (pSer139), pAb                  | ADI-905-771   | 100 µg |
| Histone H3 (acetyl-Lys9), pAb                | ADI-905-705   | 100 µg |
| Histone H3 (dimethyl-Lys9), pAb              | ADI-905-778   | 100 µg |
| Histone H3 (K9 trimethylated), mAb (6F12-H4) | ALX-804-673   | 50 µg  |
| Histone H3 (pSer10), pAb                     | ADI-905-780   | 100 µg |
| Histone H3 (pSer28), pAb                     | ADI-KAP-CC012 | 50 µl  |
| Histone H3 (pSer28), pAb                     | ADI-905-752   | 100 µg |
| [K20-monomethyl]Histone H4, mAb (5E10-D8)    | ALX-804-674   | 1 mL   |
| [K20-trimethyl]Histone H4, mAb (4H1-G3)      | ALX-804-675   | 1 mL   |
| [K20-trimethyl]Histone H4, mAb (6F8-D9)      | ALX-804-676   | 1 mL   |



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