**Product datasheet**

**Universal Methyltransferase Activity Assay Kit (for HTP) ab139434**

**Overview**

<table>
<thead>
<tr>
<th>Product name</th>
<th>Universal Methyltransferase Activity Assay Kit (for HTP)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Detection method</td>
<td>Fluorescent</td>
</tr>
<tr>
<td>Sample type</td>
<td>Purified protein</td>
</tr>
<tr>
<td>Assay type</td>
<td>Enzyme activity</td>
</tr>
<tr>
<td><strong>Product overview</strong></td>
<td>Universal Methyltransferase Activity Assay Kit (for HTP) (ab139434) is a mix-and-read fluorescent assay for high throughput (HTP) screening of candidate compounds that can affect the activity of S-adenosyl-L-methionine (SAM)-dependent methyltransferases. In this kit SAM is provided separately from the Reaction Buffer, allowing the investigator to customize the concentration needed for each methyltransferase of interest.</td>
</tr>
</tbody>
</table>

**Notes**

Methylation of proteins, nucleic acids and oligosaccharides is an important post-translational regulatory event. Activities that are methylation-related include meiosis, biosynthesis, development, signal transduction, chromatin regulation, and gene silencing. The enzymes that mediate the covalent transfer of a methyl group from a donor to an acceptor molecule are methyltransferases. Methyltransferases have structurally unrelated acceptors as diverse as proteins and DNA, however frequently use S-adenosylmethionine as a universal donor. Part of the acceptor diversity of this enzyme family relates to the flexible structural folds that bind these molecules in proximity of the donor. The side-chains of lysine, arginine, glutamate, glutamine, asparagines, and isoprenylated residues serve as methylation sites in proteins like histones. Changes in methylation patterns have been tightly linked to disease states such as cancer and vascular disease.

**Platform**

Microplate reader

**Properties**

**Storage instructions**

Store at -20°C. Please refer to protocols.

<table>
<thead>
<tr>
<th>Components</th>
<th>1 x 96 tests</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black Microtiter Plate</td>
<td>1 unit</td>
</tr>
<tr>
<td>Foil Plate Sealer</td>
<td>3 units</td>
</tr>
</tbody>
</table>
Using SET7/9 and TAF-10 as an enzyme substrate system, percent inhibition for dilutions of 5’deoxy-5’(methylthio)-adenosine was tested. The results shown are for illustration only and should not be used to calculate results from another assay.

The sensitivity of the assay can be described as the amount of methyltransferase needed to generate enough SAH to produce a signal to noise ratio sufficient for easy detection of enzyme activity.
Based on this titration data, a S-adenosylmethionine concentration of at least 25 µM is needed to achieve enzyme saturation. Also, the maximum signal is within the detection range of the plate reader, with a signal to noise ratio sufficient for easy detection of altered enzyme activity.

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