CREATIVE BIOMART®
Assay Kit

Cellular Histone Acetylation (Human) Assay Kit

Product Information

Cat.No. Kit-0206

Product Overview

Cellular Histone Acetylation (Human) Assay Kit is used for the semi-quantitative measurement of histone acetylation level in situ by means of cell-based ELISA.

Description

Acetylation and deacetylation of nucleosomal histones play an important role in the modulation of chromatin structure, chromatin function and in the regulation of gene expression. Histone acetyltransferases (HATs) and histone deacetylases (HDACs) are two opposing classes of enzymes, which tightly control the equilibrium of histone acetylation. An imbalance in the equilibrium of histone acetylation has been associated with carcinogenesis and cancer progression. So far, a number of structurally distinct classes of compounds have been identified as HDAC inhibitors including the short-chain fatty acids, hydroxamates, cyclic tetrapeptides and benzamides. These compounds lead to an accumulation of acetylated histone proteins both in tumor cells and in normal tissues. HDAC inhibitors are able to activate differentiation, to arrest the cell cycle in G1 and/or G2, and to induce apoptosis in transformed orcancer cells. Attention is currently being drawn to molecular mechanisms involving histone deacetylases. An induction of p21WAF1 and a suppression of angiogenic stimulating factors have been observed in tumor cells following exposure to HDAC inhibitors. In xenograft models, several HDAC inhibitors have demonstrated antitumor activity with only few side effects. Several clinical trials showed that HDAC inhibitors in well-tolerated doses have significant antitumoral activities. A combination of HDAC inhibitors with differentiation-inducing agents and cytotoxic drugs is an innovative therapeutic strategy that carries the potential for significant improvements in the treatment of cancer.

Applications

1) Monitoring the effects of pharmacological agents on histone acetylation in cells.2) Screening inhibitors of HDAC in cells.

Target Species

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Assay Kit

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Human

Usage

For research use only (RUO)

Storage

Upon receipt store all other components at 4°C; Do not expose reagents to excessive light

Kit Components

Microplate: Two 96-well cell culture plates100X Trichostatin A: One vial containing 50 µL of 50 µM Trichostatin A in DMSO10X Wash Buffer: One 100 mL bottle of 10X buffer containing 2%Tween -20Blocking Reagent: Two bottles containing 20 mL of 1X Blocking Reagent. Ready to use.Primary Antibody Solution (Anti-Acetylated Histone/p53-K382 Monoclonal Antibody TM-5C5): One vial containing 12 mL of Anti-Acetylated Histone/p53-K382 Monoclonal Antibody. Ready to use.Secondary Antibody Solution (HRP conjugated Anti-Mouse IgG): One vial containing 12 mL of HRP (horseradish peroxidase) conjugated anti-mouse IgG polyclonal antibody. Ready to use.Substrate Reagent: 20 mL of the chromogenic substrate, tetra-methylbenzidine (TMB). Ready to use.Stop Solution: One bottle supplied ready to use, containing 20 mL of 1 N H_2SO_4.

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