SANTA CRUZ BIOTECHNOLOGY, INC.

Ac-lysine (AKL5C1): sc-32268

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Lysine acetylation occurs in core histones, transcription factors and other proteins. This reversible modification is under the influence of signal-dependent association of substrates with acetyltransferases and deacetylases. Lysine acetylation generates specific docking sites for bromodomain proteins. Bromodomains of GCN5, PCAF, TAF1 and CBP are able to recognize acetyl-lysine residues in histones, HIV TAT, p53, c-Myb or MyoD. Trichostatin A (TSA), a histone deacetylase inhibitor, strongly increases acetylation of the N-terminal tails of Histone H3. Ethanol increases acetylation of Histone H3 at Lys 9 in a dose-dependent manner.

REFERENCES

1. Gaertig, J., et al. 1995. Acetylation of Lysine 40 in α Tubulin is not essential in *Tetrahymena thermophila*. J. Cell Biol. 129: 1301-1310.
2. Grant, P.A., et al. 1999. Expanded lysine acetylation specificity of GCN5 in native complexes. J. Biol. Chem. 274: 5895-5900.
3. Lo, W.S., et al. 2000. Phosphorylation of Serine 10 in Histone H3 is functionally linked *in vitro* and *in vivo* to GCN5-mediated acetylation at Lysine 14. Mol. Cell 5: 917-926.

SOURCE

Ac-lysine (AKL5C1) is a mouse monoclonal antibody raised against chemically acetylated keyhole limpet hemocyanin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Ac-lysine (AKL5C1) is available conjugated to agarose (sc-32268 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to either Alexa Fluor® 546 (sc-32268 AF546) or Alexa Fluor® 594 (sc-32268 AF594), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-32268 AF680) or Alexa Fluor® 790 (sc-32268 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

Ac-lysine (AKL5C1) is recommended for detection of proteins containing N-ε-acetylated lysine residues by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500); non cross-reactive with N-α-acetylated lysine.

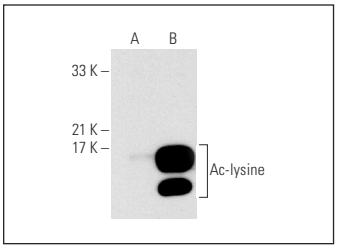
Santa Cruz Biotechnology offers several chemical inducers of acetylation, including: Apicidin (sc-202061), Panobinostat (sc-208148), Suberoylanilide Hydroxamic Acid (sc-220139), Oxamflatin (sc-205960), Ms-275 (sc-279455), M 344 (sc-203124), Scriptaid (sc-202807), Trapoxin A (sc-253730) and Trichostatin A (sc-3511).

Positive Controls: Trichostatin A + NIH/3T3 whole cell lysate.

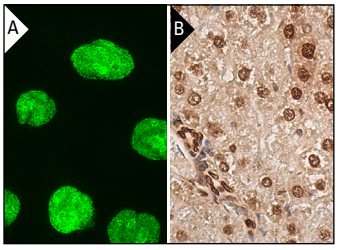
STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

DATA



Ac-lysine (AKL5C1): sc-32268. Western blot analysis of Ac-lysine acetylation in untreated (**A**) and Trichostatin A (sc-3511) treated (**B**) NIH/3T3 whole cell lysates. Note upregulation of Ac-lysine acetylation in lane **B**.



Ac-lysine (AKL5C1): sc-32268. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded rat liver tissue showing nuclear and cytoplasmic staining of hepatocytes and nuclear staining of bile duct cells (**B**).

SELECT PRODUCT CITATIONS

1. Haenni, S.S., et al. 2008. Identification of lysines 36 and 37 of PARP-2 as targets for acetylation and auto-ADP-ribosylation. Int. J. Biochem. Cell Biol. 40: 2274-2283.
2. Kumar, P. and Pandey, K.N. 2009. Cooperative activation of Npr1 gene transcription and expression by interaction of Ets-1 and p300. Hypertension 54: 172-178.
3. Hwang, S.S., et al. 2010. GATA-binding protein-3 regulates T helper type 2 cytokine and ifng loci through interaction with metastasis-associated protein 2. Immunology 131: 50-58.
4. Hong, K.S., et al. 2012. Involvement of SIRT1 in hypoxic down-regulation of c-Myc and β-catenin and hypoxic preconditioning effect of polyphenols. Toxicol. Appl. Pharmacol. 259: 210-218.
5. Koen, Y.M., et al. 2013. Protein targets of thioacetamide metabolites in rat hepatocytes. Chem. Res. Toxicol. 26: 564-574.
6. Kumar, P., et al. 2014. Histone deacetylase inhibitors modulate the transcriptional regulation of guanylyl cyclase/natriuretic peptide receptor-a gene: interactive roles of modified histones, histone acetyltransferase, p300, AND Sp1. J. Biol. Chem. 289: 6991-7002.
7. Jeong, Y., et al. 2014. Histone deacetylase isoforms regulate innate immune responses by deacetylating mitogen-activated protein kinase phosphatase-1. J. Leukoc. Biol. 95: 651-659.
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9. Kotla, S., et al. 2017. ROS via BTK-p300-STAT1-PPARγ signaling activation mediates cholesterol crystals-induced CD36 expression and foam cell formation. Redox Biol. 11: 350-364.

RESEARCH USE

For research use only, not for use in diagnostic procedures.