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MYST1 Antibody

Purified Mouse Monoclonal Antibody
Catalog # AO1113a

Product Information

Application	WB, IHC, ICC, E
Primary Accession	Q9H7Z6
Reactivity	Human
Host	Mouse
Clonality	Monoclonal
Clone Names	8C4C4
Isotype	IgG2b
Calculated MW	52403
Description	MYST1 (MYST histone acetyltransferase 1, MOF) belongs to the MYST family of histone acetyltransferases, which are employed in the cell to bring about transcriptional regulation. The MYST family includes MYST1, is named for the founding members MOZ, yeast YBF2 and SAS2, and TIP60. All members of this family contain a MYST region of about 240 amino acids with a canonical acetyl-CoA-binding site and a C2HC-type zinc finger motif. Most MYST proteins also have a chromodomain involved in protein- protein interactions and targeting transcriptional regulators to chromatin. Although MOF is expressed in both males and females, it associates with the X chromosome only in males. MOF contains a zinc-finger domain that is used to contact the globular part of the nucleosome and histone H4. The carboxy terminal domain of human MOF also has histone acetyltransferase activity directed against histones H3 and H2A, a characteristic shared with other MYST family histone
Immunogen	Purified recombinant fragment of human MYST1 expressed in E. Coli.
Formulation	Ascitic fluid containing 0.03% sodium azide.

Additional Information

Gene ID	84148
Other Names	Histone acetyltransferase KAT8, 2.3.1.48, Lysine acetyltransferase 8, MOZ, YBF2/SAS3, SAS2 and TIP60 protein 1, MYST-1, hMOF, KAT8, MOF, MYST1
Dilution	WB~~1/500 - 1/2000 IHC~~1/200 - 1/1000 ICC~~N/A E~~N/A
Storage	Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	MYST1 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	KAT8 {ECO:0000303|PubMed:33657400, ECO:0000312|HGNC:HGNC:17933}
Function	Histone acetyltransferase that catalyzes histone H4 acetylation at 'Lys-5'- and 'Lys-8' (H4K5ac and H4K8ac) or 'Lys-16' (H4K16ac), depending on the context (PubMed:12397079, PubMed:16227571, PubMed:16543150, PubMed:20018852, PubMed:21217699, PubMed:22020126, PubMed:22547026, PubMed:31794431, PubMed:33837287). Catalytic component of the MSL histone acetyltransferase complex, a multiprotein complex that mediates the majority of histone H4 acetylation at 'Lys-16' (H4K16ac), an epigenetic mark that prevents chromatin compaction (PubMed:12397079, PubMed:16227571, PubMed:16543150, PubMed:21217699, PubMed:22020126, PubMed:22547026, PubMed:33657400, PubMed:33837287). H4K16ac constitutes the only acetylation mark intergenerationally transmitted and regulates key biological processes, such as oogenesis, embryonic stem cell pluripotency, hematopoiesis or glucose metabolism (By similarity). The MSL complex is required for chromosome stability and genome integrity by maintaining homeostatic levels of H4K16ac (PubMed:33837287). The MSL complex is also involved in gene dosage by promoting up-regulation of genes expressed by the X chromosome (By similarity). X up-regulation is required to compensate for autosomal biallelic expression (By similarity). The MSL complex also participates in gene dosage compensation by promoting expression of Tsix non-coding RNA (By similarity). As part of the NSL histone acetyltransferase complex, catalyzes histone H4 acetylation at 'Lys-5'- and 'Lys-8' (H4K5ac and H4K8ac) at transcription start sites and promotes transcription initiation (PubMed:20018852, PubMed:22547026, PubMed:33657400). The NSL complex also acts as a regulator of gene expression in mitochondria: KAT8 associates with mitochondrial DNA and controls expression of respiratory genes in an acetyltransferase- dependent mechanism (PubMed:27768893). Also functions as an acetyltransferase for non-histone targets, such as ALKBH5, COX17, IRF3, KDM1A/LSD1, LMNA, PAX7 or TP53/p53 (PubMed:17189187, PubMed:19854137, PubMed:37369679). Acts as an inhibitor of antiviral immunity by acetylating IRF3, preventing IRF3 recruitment to promoters (By similarity). Acts as a regulator of asymmetric division in muscle stem cells by mediating acetylation of PAX7 (By similarity). As part of the NSL complex, acetylates TP53/p53 at 'Lys-120' (PubMed:17189187, PubMed:19854137). Acts as a regulator of epithelial-to-mesenchymal transition as part of the NSL complex by mediating acetylation of KDM1A/LSD1 (PubMed:27292636). The NSL complex is required for nuclear architecture maintenance by mediating acetylation of LMNA (By similarity). Promotes mitochondrial integrity by catalyzing acetylation of COX17 (By similarity). In addition to protein acetyltransferase activity, able to mediate protein propionylation (PubMed:29321206).
Cellular Location	Nucleus. Chromosome Mitochondrion. Note=Translocated into the nucleus via its association with importin-alpha-1 (KPNA2) (PubMed:28991411). As part of the NSL complex, associates with the proximal part of promoters and transcription start sites (PubMed:33657400). As part of the MSL complex, associates with gene bodies (By similarity). Also localizes to mitochondria; associates with mitochondrial DNA and regulates mitochondrial gene expression (PubMed:27768893). {ECO:0000250|UniProtKB:Q9D1P2, ECO:0000269|PubMed:27768893, ECO:0000269|PubMed:28991411, ECO:0000269|PubMed:33657400}

References

1. Sterner, D.E., et al. Microbiol. Mol. Biol 2000 Rev. 64: 435-459. 2. Neal, K.C., et al. Biochim. Biophys. 2000 Acta 1490: 170-174. 3. Akhtar, A., et al. EMBO 2001 Rep. 2: 113-118.

Images

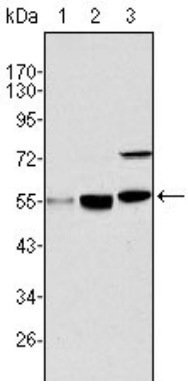


Figure 1: Western blot analysis using MYST1 mouse mAb against Hela (1), HepG2 (2) and SMMC-7721 (3) cell lysate.

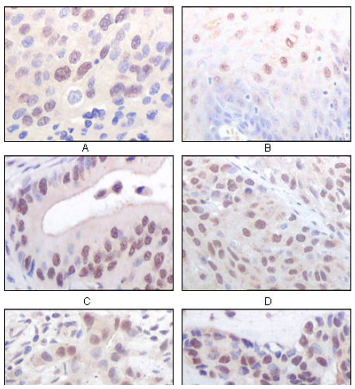


Figure 2: Immunohistochemical analysis of paraffin-embedded human esophageal squamous cell carcinoma (A), normal esophagus epithelium (B), rectum adenocarcinoma (C), lung squamous cell carcinoma (D), breast infiltrating carcinoma (E), and breast infiltrating carcinoma (F) tissues, showing nuclear localization using MOF/MYST1 mouse mAb with DAB staining.

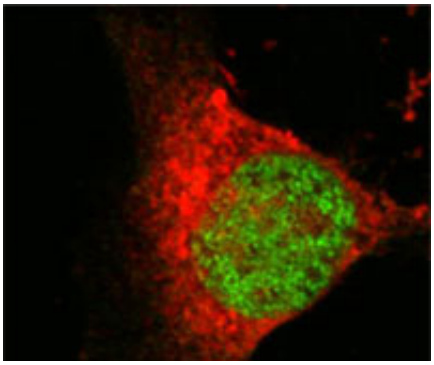


Figure 3: Confocal immunofluorescence analysis of Eca 109 cells using MOF/MYST1 mouse mAb (green), showing nuclear localization.

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