Human Sirtuin 1/SIRT1 Antibody

Monoclonal Mouse IgG_1 Clone # 834918

Catalog Number: MAB7714

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human Sirtuin 1/SIRT1 in ELISAs. In direct ELISAs, no cross-reactivity with recombinant human Sirtuin 2, 3, 5, or 6 is observed.
Source	Monoclonal Mouse IgG_1 Clone # 834918
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	*E. coli*-derived recombinant human Sirtuin 1/SIRT1 Met1-Ser747 Accession # Q96EB6
Formulation	Lyophilized from a 0.2 μm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied either lyophilized or as a 0.2 μm filtered solution in PBS.

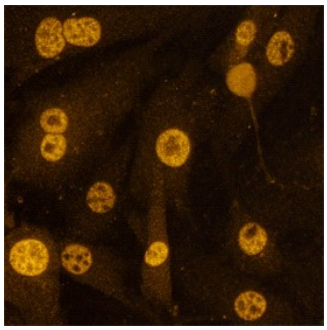
APPLICATIONS

Please Note: *Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.*

	Recommended Concentration	Sample
Immunocytochemistry	8-25 µg/mL	See Below
Intracellular Staining by Flow Cytometry	0.25 µg/10^6 cells	See Below
CyTOF-ready	Ready to be labeled using established conjugation methods. No BSA or other carrier proteins that could interfere with conjugation.	

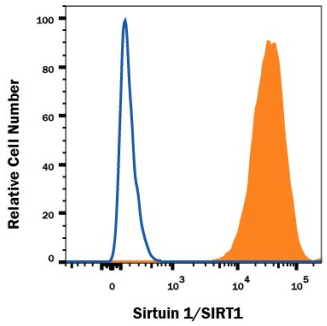
DATA

Immunocytochemistry



Sirtuin 1/SIRT1 in HepG2 Human Cell Line. Sirtuin 1/SIRT1 was detected in immersion fixed HepG2 human hepatocellular carcinoma cell line using Mouse Anti-Human Sirtuin 1/SIRT1 Monoclonal Antibody (Catalog # MAB7714) at 25 µg/mL for 1 hour at room temperature. Cells were stained using the NorthernLights™ 557-conjugated Anti-Mouse IgG Secondary Antibody (yellow; Catalog # NL007). Specific staining was localized to nuclei. View our protocol for Fluorescent ICC Staining of Cells on Coverslips.

Intracellular Staining by Flow Cytometry



Detection of Sirtuin 1/SIRT1 in HepG2 Human Cell Line by Flow Cytometry. HepG2 human hepatocellular carcinoma cell line was stained with Mouse Anti-Human Sirtuin 1/SIRT1 Monoclonal Antibody (Catalog # MAB7714, filled histogram) or isotype control antibody (Catalog # MAB002, open histogram), followed by Allophycocyanin-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # F0101B). To facilitate intracellular staining, cells were fixed and permeabilized with FlowX FoxP3 Fixation & Permeabilization Buffer Kit (Catalog # FC012). View our protocol for Staining Intracellular Molecules.

PREPARATION AND STORAGE

Reconstitution	Sterile PBS to a final concentration of 0.5 mg/mL.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 6 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

SIRT1 (SIR2-like protein 1; also NAD-dependent protein deacetylase sirtuin-1 and hSIR2) is a class I member of the sirtuin family of enzymes. Although its predicted MW is 81 kDa, it runs anomalously at 110-120 kDa in SDS-PAGE. It is a widely expressed nuclear protein that participates in the deacetylation of multiple proteins, including p300, p53, LKB1 and histone H1. Functionally, this has the effect of promoting heterochromatin formation, cell survival and resistance to oxidative stress. Metabolically, SIRT1 induces insulin secretion, inhibits glycolysis and suppresses fatty acid synthesis. Human SIRT1 is 747 amino acids (aa) in length. It possesses two NLSs (aa 32-39 and 223-230), an NES (aa 138-145), and a sirtuin-type deacetylase domain (aa 241-495) that contains an NAD and Zn binding motif. There are at least 12 utilized Ser/Thr phosphorylation sites, plus two nitrosylated Cys and one acetylated Ala. There are also four potential isoform variants. One is 95 kDa in size and shows a deletion of aa 454-639, a second is 17 kDa in size and contains a 16 aa substitution for aa 149-747, and a third contains an alternative start site at Met296. SIRT1 is also known to undergo proteolysis by cathepsin B at Val533Ser534, generating a fourth, C-terminally truncated 75 kDa isoform. Full-length SIRT1 is suggested to form trimers, while the 17 kDa isoform appears to form dimers. Over aa 2-747, human and mouse SIRT1 share 86% aa sequence identity.

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