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Product Information

Anti-FAT10 antibody, Mouse monoclonal
Clone FAT10-7, purified from hybridoma cell culture

Product Number **SAB4200854**

Product Description

Monoclonal Anti-FAT10 antibody (mouse IgG1 isotype) is derived from the FAT10-7 hybridoma, produced by the fusion of mouse myeloma cells and splenocytes from a mouse immunized with synthetic peptide corresponding to the internal region of mouse FAT-10 (GeneID: 24108), conjugated to KLH as immunogen. The isotype is determined by ELISA using Mouse Monoclonal Antibody Isotyping Reagents (Sigma ISO-2). The antibody is purified from culture supernatant of hybridoma cells.

Monoclonal Anti-FAT10 antibody specifically recognizes FAT10 from human and mouse origin. The antibody may be used in various immunochemical techniques including Immunoblotting and Immunoprecipitation. Detection of the FAT10 band by Immunoblotting is specifically inhibited by the immunogen.

The Ubiquitin-like protein FAT10, also known as Ubiquitin D (UBD) or Human Leukocyte Antigen (HLA) - F adjacent transcript 10 (FAT10), is a member of the Ubiquitin-like proteins (UBLs) modifier proteins. There are more than 12 identified UBLs including FAT10, SUMOs, NEDD8, ISG15, UFM1, URM1, ATG12, ATG8, FUB1, and HUB1.[2] In a similar manner to Ubiquitin all UBLs can be covalently attached to their target proteins via the E1–E2–E3 enzymatic cascade and share a similar structure and function. UBLylation is a major post-translational modification that in many cases leads to protein degradation in the 26S proteasome.[2]

FAT10 is a unique UBL containing a C-terminal GG motif available for activation and conjugation. This motif differentiates FAT10 from ubiquitin and other UBLs which must be cleaved from precursor proteins. Furthermore, unlike ubiquitin that requires a poly-ubiquitin chain, the FAT10 can bind the 26S proteasome as a monomer to mediate proteasomal degradation.[2-3]

Under normal conditions, FAT10 has a short half-life, its expression is repressed by p53[4] and is restricted to tissues of the immune system like thymus, lymph nodes and the spleen. Inflammatory cytokines such as IFNɣ and TNFα and downstream STAT3 and NF-κB signaling can also induce FAT10 expression in other tissues.[2-3,5] FAT10 expression is also upregulated and can be increased even up to 100-fold in many cancer types including liver and colon cancer HCC, colorectal, ovarian and uterine carcinomas, triple-negative breast cancer, bladder cancer, gastric cancer, glioma, pancreatic ductal, adenocarcinoma and osteosarcoma.[2,5-6]

FATylation has an important role in many cellular processes varied from cell maintenance to DNA repair. Understanding FAT10 mechanism and finding its downstream substrates is important to reveal its potential role in inflammation-induced tumorigenesis.[1-7]

Reagent

Supplied as a solution in 0.01 M phosphate buffered saline pH 7.4, containing 15 mM sodium azide as a preservative.

Antibody Concentration: ~ 1.0 mg/mL

Precautions and Disclaimer

For R&D use only. Not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

For continuous use, store at 2-8°C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilution samples should be discarded if not used within 12 hours.

Product Profile

Immunoblotting: a working concentration of 4-8 μg/mL or 10-20 μg/mL is recommended using whole lysate of human hepatocellular carcinoma HepG2 cells stimulated with TNFα and IFNɣ and treated with MG132 or 293-T expressing mouse FAT-10 respectively.

Note In order to obtain best results in different techniques and preparations it is recommended to determine optimal working concentration by titration test.

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