Human ATP5A1 Antibody

Monoclonal Mouse IgG_{2B} Clone # 1082626

Catalog Number: MAB11558

DESCRIPTION

Species Reactivity	Human
Specificity	Detects a synthetic peptide around aa 235 in Direct ELISA
Source	Monoclonal Mouse IgG_{2B} Clone # 1082626
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	ATP5A1 contatining synthetic peptide Accession # P25705
Formulation	Lyophilized from a 0.2 μm filtered solution in PBS with Trehalose.

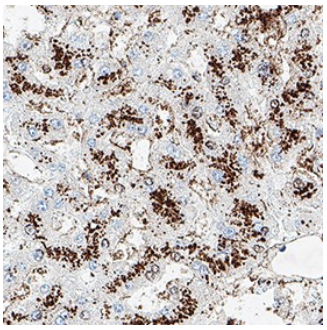
APPLICATIONS

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	3-25 µg/mL	Formalin fixed HepG2 human hepatocellular carcinoma cell line
Immunohistochemistry	3-25 µg/mL	Immersion fixed paraffin-embedded sections of human liver

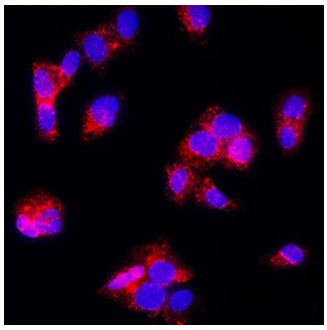
DATA

Immunohistochemistry



Detection of ATP5A1 in Human Liver. ATP5A1 was detected in immersion fixed paraffin-embedded sections of human liver using Mouse Anti-Human ATP5A1 Monoclonal Antibody (Catalog # MAB11558) at 5 µg/ml for 1 hour at room temperature followed by incubation with the Anti-Mouse IgG VisUCyte™ HRP Polymer Antibody (Catalog # VC001) or the HRP-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # HAF007). Before incubation with the primary antibody, tissue was subjected to heat-induced epitope retrieval using VisUCyte Antigen Retrieval Reagent-Basic (Catalog # VCTS021). Tissue was stained using DAB (brown) and counterstained with hematoxylin (blue). Specific staining was localized to the membrane of mitochondria. View our protocol for Chromogenic IHC Staining of Paraffin-embedded Tissue Sections.

Immunocytochemistry



Detection of ATP5A1 in HepG2 Human Cell Line. ATP5A1 was detected in immersion fixed HepG2 human hepatocellular carcinoma cell line using Mouse Anti-Human ATP5A1 Monoclonal Antibody (Catalog # MAB11558) at 8 µg/ml for 3 hours at room temperature. Cells were stained using the NorthernLights™ 557-conjugated Anti-Mouse IgG Secondary Antibody (red; Catalog # NL007) and counterstained with DAPI (blue). Specific staining was localized to the membrane of mitochondria. View our protocol for Fluorescent ICC Staining of Cells on Coverslips.

PREPARATION AND STORAGE

Reconstitution	Reconstitute lyophilized material at 0.2mg/ml in sterile PBS. For liquid material, refer to CoA for concentration.
Shipping	Lyophilized product is shipped at ambient temperature. Liquid small pack size (-SP) is shipped with polar packs. Upon receipt, store immediately at the temperature recommended below.
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.

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BACKGROUND

ATP5F1A is a 553aa, 60kDa protein which encodes subunit alpha of mitochondrial ATP synthase (complex V), the rotary ATPase responsible for more than 90% of cellular ATP synthesis. F-type ATPases have 2 components, CF1 - the catalytic core - and CF0 - the membrane proton channel. CF1 has five subunits: alpha3, beta3, gamma1, delta1, epsilon1. CF0 has three main subunits: a, b and c. ATP5A1 is generally regarded to mediate tumor progression through mitochondrial signaling. It is overrepresented in an oxidative phosphorylation pathway associated with tumorigenesis and tumor progression. Dysregulation of this ATP synthase subunit is observed in human carcinomas.

References:

1. Lines MA, Cuillerier A, Chakraborty P, Naas T, Duque Lasio ML, Michaud J, Pileggi C, Harper ME, Burelle Y, Toler TL, Sondheimer N, Crawford HP, Millan F, Geraghty MT. A recurrent de novo ATP5F1A substitution associated with neonatal complex V deficiency. Eur J Hum Genet. 2021 Nov;29(11):1719-1724. doi: 10.1038/s41431-021-00956-0. Epub 2021 Sep 6. PMID: 34483339; PMCID: PMC8560863.
2. Song Ba Y, Wang Ma F, Wei Ma Y, Chen Ba D, Deng Ba G. ATP5A1 Participates in Transcriptional and Posttranscriptional Regulation of Cancer-Associated Genes by Modulating Their Expression and Alternative Splicing Profiles in HeLa Cells. Technol Cancer Res Treat. 2021 Jan-Dec;20:15330338211039126. doi: 10.1177/15330338211039126. PMID: 34520292; PMCID: PMC8445539.
3. Yuan L, Chen L, Qian K, Wang G, Lu M, Qian G, Cao X, Jiang W, Xiao Y, Wang X. A novel correlation between ATP5A1 gene expression and progression of human clear cell renal cell carcinoma identified by co-expression analysis. Oncol Rep. 2018 Feb;39(2):525-536. doi: 10.3892/or.2017.6132. Epub 2017 Dec 4. PMID: 29207195; PMCID: PMC5783621.

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