10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

PEG10 Antibody

Mouse Monoclonal Antibody to PEG10
Catalog # AO1238b

Product Information

Application	WB, IHC, E
Primary Accession	Q86TG7
Reactivity	Human
Host	Mouse
Clonality	Monoclonal
Clone Names	4C10A7
Isotype	Mouse IgG1
Calculated MW	80173
Description	PEG10, paternally expressed 10. The PEG10 includes two overlapping reading frames of the same transcript encoding distinct isoforms. The shorter isoform has a CCHC-type zinc finger motif containing a sequence characteristic of gag proteins of most retroviruses and some retrotransposons, and it functions in part by interacting with members of the TGF-beta receptor family. The longer isoform has the active-site DSG consensus sequence of the protease domain of pol proteins. The longer isoform is the result of -1 translational frameshifting that is also seen in some retroviruses. Expression of these two isoforms only comes from the paternal allele due to imprinting. Increased gene expression (as observed by an increase in mRNA levels) is associated with hepatocellular carcinomas.
Immunogen	Purified recombinant fragment of human PEG10 expressed in E. Coli.

Additional Information

Gene ID	23089
Other Names	Retrotransposon-derived protein PEG10, Embryonal carcinoma differentiation-regulated protein, Mammalian retrotransposon-derived protein 2, Myelin expression factor 3-like protein 1, MEF3-like protein 1, Paternally expressed gene 10 protein, Retrotransposon gag domain-containing protein 3, Retrotransposon-derived gag-like polyprotein, Ty3/Gypsy-like protein, PEG10, EDR, KIAA1051, MAR2, MART2, MEF3L1, RGAG3
Target/Specificity	Purified recombinant fragment of human PEG10 expressed in E. Coli.
Dilution	WB~~1:500~~2000 IHC~~1:200~~1000 E~~N/A
Format	Ascitic fluid containing 0.03% sodium azide.
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	PEG10 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	PEG10 {ECO:0000303|PubMed:11318613, ECO:0000312|HGNC:HGNC:14005}
Function	Retrotransposon-derived protein that binds its own mRNA and self-assembles into virion-like capsids (PubMed:34413232). Forms virion-like extracellular vesicles that encapsulate their own mRNA and are released from cells, enabling intercellular transfer of PEG10 mRNA (PubMed:34413232). Binds its own mRNA in the 5'-UTR region, in the region near the boundary between the nucleocapsid (NC) and protease (PRO) coding sequences and in the beginning of the 3'-UTR region (PubMed:34413232). Involved in placenta formation: required for trophoblast stem cells differentiation (By similarity). Involved at the immediate early stage of adipocyte differentiation (By similarity). Overexpressed in many cancers and enhances tumor progression: promotes cell proliferation by driving cell cycle progression from G0/G1 (PubMed:12810624, PubMed:16423995, PubMed:26235627, PubMed:28193232). Enhances cancer progression by inhibiting the TGF-beta signaling, possibly via interaction with the TGF-beta receptor ACVRL1 (PubMed:15611116, PubMed:26235627, PubMed:30094509). May bind to the 5'-GCCTGTCTTT-3' DNA sequence of the MB1 domain in the myelin basic protein (MBP) promoter; additional evidences are however required to confirm this result (By similarity).
Cellular Location	Extracellular vesicle membrane. Cytoplasm. Nucleus Note=Forms virion-like extracellular vesicles that are released from cells (PubMed:34413232). Detected predominantly in the cytoplasm of breast and prostate carcinomas, in hepatocellular carcinoma (HCC) and B-cell chronic lymphocytic leukemia (B-CLL) cells and in the Hep-G2 cell line (PubMed:12810624).
Tissue Location	Expressed in the cytotrophoblast layer but not in the overlying syncytiotrophoblast of the placenta. Expressed in prostate and breast carcinomas but not in normal breast and prostate epithelial cells. Expressed in the Hep-G2 cell line (at protein level) Expressed in brain, liver, spleen, kidney, thymus, lung, ovary, testis, reactive lymph node, skeletal muscle, adipose tissue and placenta Expressed in pancreatic and hepatocellular carcinomas (HCC)

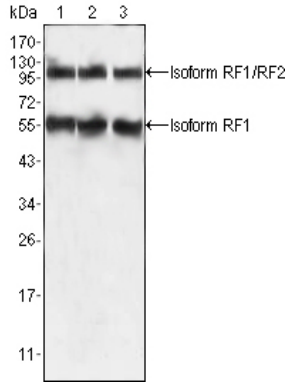
References

1. Oncogene. 2007 Aug 23;26(39):5741-51.

2. FEBS Lett. 2008 Aug 6;582(18):2793-8.

Images

Figure 1: Western blot analysis using PEG10 mouse mAb against HepG2 (1), SMMC-7721 (2) and A549 (3) cell lysate.



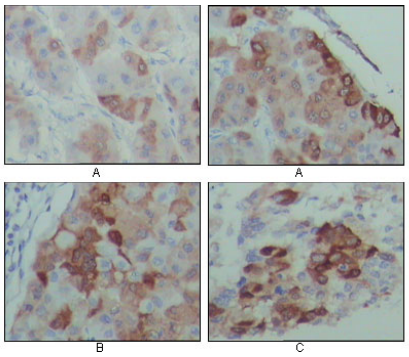


Figure 2: Immunohistochemical analysis of paraffin-embedded human hepatocarcinoma (A), breast carcinoma (B) and lung cancer tissues (C), showing cytoplasmic localization with DAB staining using PEG10 mouse mAb.