Human STEAP3/TSAP6 Antibody

Monoclonal Mouse IgG Clone # 1122411
Catalog Number: MAB11835

DESCRIPTION

Species Reactivity	Human
Specificity	Detects a synthetic peptide specific for human STEAP3 around amino acid 20 in Direct ELISA.
Source	Monoclonal Mouse IgG Clone # 1122411
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Synthetic Peptide Accession # Q658P3
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose.

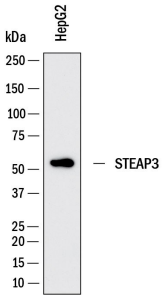
APPLICATIONS

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
Western Blot	2 µg/mL	HepG2 human hepatocellular carcinoma cell line
Immunohistochemistry	0.25-25 µg/mL	Immersion fixed paraffin-embedded sections of human liver, placenta,and prostate
Simple Western	10-50 µg/mL	HepG2 human hepatocellular carcinoma cell line

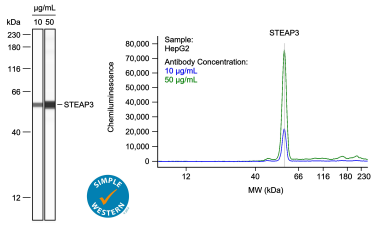
DATA

Western Blot



Detection of Human STEAP3/TSAP6 by Western Blot. Western Blot shows lysates of HepG2 human hepatocellular carcinoma cell line. PVDF membrane was probed with 2 µg/ml of Mouse Anti-Human STEAP3/TSAP6 Monoclonal Antibody (Catalog # MAB11835) followed by HRP-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # HAF018). A specific band was detected for STEAP3/TSAP6 at approximately 55 kDa (as indicated). This experiment was conducted under reducing conditions and using Western Blot Buffer Group 1.

Simple Western



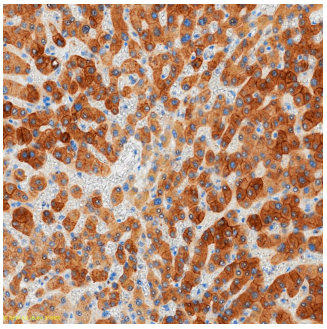
Detection of Human STEAP3/TSAP6 by Simple Western™. Left: Simple Western lane view shows lysates of HepG2 human hepatocellular carcinoma cell line, loaded at 1 mg/ml. A specific band was detected for STEAP3/TSAP6 at approximately 57 kDa (as indicated) using both 10 µg/ml and 50 µg/ml of Mouse Anti-Human STEAP3/TSAP6 Monoclonal Antibody (Catalog # MAB11835) followed by HRP-conjugated Goat Anti-Mouse Secondary Antibody (Catalog # 042-205). This experiment was conducted under reducing conditions and using the 12-230kDa separation system. **Right:** Simple Western electropherogram showing the same Mouse Anti-Human STEAP3/TSAP6 Monoclonal Antibody (Catalog # MAB11835) tested at 10 µg/ml (blue line) and 50 µg/ml (green line) in the HepG2 human hepatocellular carcinoma cell line.

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USA | TEL: 800.343.7475 Canada | TEL: 855.668.8722 Europe | Middle East | Africa TEL: +44.0.1235.529449
China | info.cn@bio-techne.com TEL: 400.821.3475

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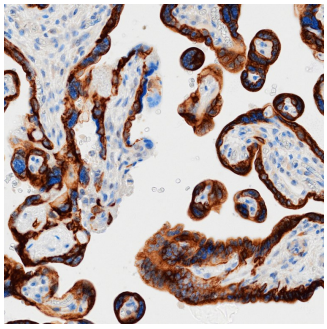
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Immunohistochemistry-Paraffin



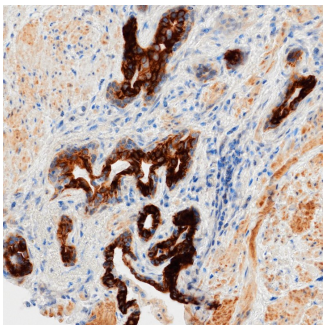
Immersion fixed paraffin-embedded sections of human liver STEAP3/TSAP6 was detected in immersion fixed paraffin-embedded sections of human liver using Mouse Anti-Human STEAP3/TSAP6 Monoclonal Antibody (Catalog # MAB11835) at 5 µg/ml overnight at 4 °C. Before incubation with the primary antibody, tissue was subjected to heat-induced epitope retrieval using VisUCyte Antigen Retrieval Reagent-Basic (Catalog # VCTS021). Tissue was stained using the HRP-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # HAF007) and counterstained with hematoxylin (blue). Specific staining was localized to the cytoplasm and membrane. View our protocol for Chromogenic IHC Staining of Paraffin-embedded Tissue Sections.

Immunohistochemistry-Paraffin



Immersion fixed paraffin-embedded sections of human placenta STEAP3/TSAP6 was detected in immersion fixed paraffin-embedded sections of human placenta using Mouse Anti-Human STEAP3/TSAP6 Monoclonal Antibody (Catalog # MAB11835) at 5 µg/ml overnight at 4 °C. 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 the HRP-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # HAF007) and counterstained with hematoxylin (blue). Specific staining was localized to the cytoplasm and membrane. View our protocol for Chromogenic IHC Staining of Paraffin-embedded Tissue Sections.

Immunohistochemistry-Paraffin



Immersion fixed paraffin-embedded sections of human prostate STEAP3/TSAP6 was detected in immersion fixed paraffin-embedded sections of human prostate using Mouse Anti-Human STEAP3/TSAP6 Monoclonal Antibody (Catalog # MAB11835) at 5 µg/ml overnight at 4 °C. 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 the HRP-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # HAF007) and counterstained with hematoxylin (blue). Specific staining was localized to the cytoplasm and membrane. View our protocol for Chromogenic IHC Staining of Paraffin-embedded Tissue Sections.

PREPARATION AND STORAGE

Reconstitution	Reconstitute lyophilized material at 0.2 mg/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

Six-transmembrane epithelial antigen of the prostate 3 (STEAP3), also known as TSAP6 or metalloreductase STEAP3, is a member of the STEAP protein family with a molecular weight of approximately 50 kDa. STEAP3 plays a crucial role in cellular iron metabolism by functioning as a ferric reductase, reducing Fe3+ to Fe2+ for subsequent import into the cytoplasm through iron transporters. This activity is vital for maintaining cellular iron homeostasis, which is essential for processes such as DNA synthesis, oxygen transport, and cellular respiration. STEAP3 is predominantly expressed in hematopoietic tissues, and its function is critical for erythroid maturation. Dysregulation of STEAP3 has been implicated in pathologies such as iron-related disorders, including congenital sideroblastic anemia. Additionally, alterations in STEAP3 activity have been linked to cancer progression, where it may influence tumor cell survival and proliferation by modulating iron availability. STEAP3 is increasingly being studied as a potential biomarker and therapeutic target in diseases characterized by disruptions in iron metabolism and redox homeostasis.

References:

1. Ohgami RS, Campagna DR, Greer EL, Antiochos B, McDonald A, Chen J, Sharp JJ, Fujiwara Y, Barker JE, Fleming MD. Identification of a ferrireductase required for efficient transferrin-dependent iron uptake in erythroid cells. Nat Genet. 2005 Nov;37(11):1264-9. doi: 10.1038/ng1658. Epub 2005 Oct 16. PMID: 16227996; PMCID: PMC2156108.
2. Lv J, Liu X, Sun Z, Gao J, Yu X, Zhang M, Zhang Z, Ren S, Zuo Y. STEAP3 promotes colon cancer cell proliferation and migration via regulating histone acetylation. Hum Genet. 2024 Mar;143(3):343-355. doi: 10.1007/s00439-024-02646-5. Epub 2024 Mar 13. PMID: 38480539.
3. Liu D, Yi S, Zhang X, Fang P, Zheng C, Lin L, Cai R, Ye Y, Zhou Y, Liang Y, Cheng F, Zhang X, Zhou W, Mohandas N, An X, Xu X. Human STEAP3 mutations with no phenotypic red cell changes. Blood. 2016 Feb 25;127(8):1067-71. doi: 10.1182/blood-2015-09-670174. Epub 2015 Dec 16. PMID: 26675350; PMCID: PMC4768430.

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