Human Midkine Antibody

Antigen Affinity-purified Polyclonal Goat IgG
Catalog Number: AF-258-PB

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human Midkine in direct ELISAs and Western blots. In direct ELISAs, approximately 10% cross-reactivity with recombinant mouse Midkine is observed, and less than 1% cross-reactivity with recombinant human Pleiotrophin is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	*E. coli*-derived recombinant human Midkine Lys23-Asp143 Accession # P21741
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 as a 0.2 μm filtered solution in PBS.

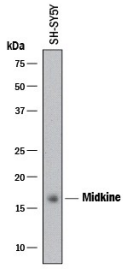
APPLICATIONS

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
Western Blot	2 µg/mL	See Below
Immunohistochemistry	5-15 µg/mL	See Below
Simple Western	100 µg/mL	See Below

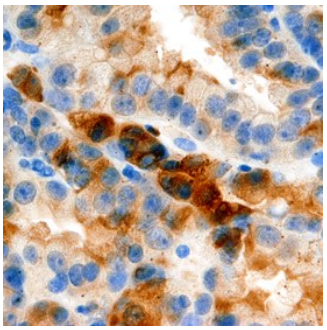
DATA

Western Blot



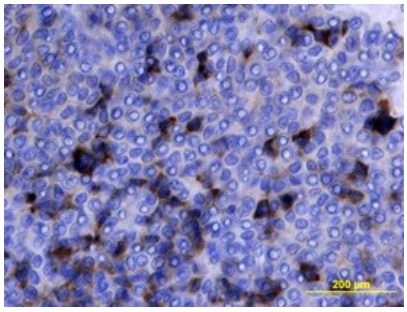
Detection of Human Midkine by Western Blot. Western blot shows lysates of SH-SY5Y human neuroblastoma cell line. PVDF membrane was probed with 2 µg/mL of Goat Anti-Human Midkine Antigen Affinity-purified Polyclonal Antibody (Catalog # AF-258-PB) followed by HRP-conjugated Anti-Goat IgG Secondary Antibody (Catalog # HAF017). A specific band was detected for Midkine at approximately 17 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 1.

Immunohistochemistry



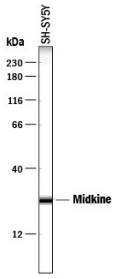
Midkine in Human Prostate. Midkine was detected in immersion fixed paraffin-embedded sections of human prostate using Goat Anti-Human Midkine Antigen Affinity-purified Polyclonal Antibody (Catalog # AF-258-PB) at 10 µg/mL overnight at 4 °C. Before incubation with the primary antibody, tissue was subjected to heat-induced epitope retrieval using Antigen Retrieval Reagent-Basic (Catalog # CTS013). Tissue was stained using the Anti-Goat HRP-DAB Cell & Tissue Staining Kit (brown; Catalog # CTS008) and counterstained with hematoxylin (blue). Specific staining was localized to stromal cell cytoplasm. View our protocol for Chromogenic IHC Staining of Paraffin-embedded Tissue Sections.

Immunohistochemistry



Midkine in Human Ovarian Array. Midkine was detected in immersion fixed paraffin-embedded sections of human ovarian array using Goat Anti-Human Midkine Antigen Affinity-purified Polyclonal Antibody (Catalog # AF-258-PB) at 10 µg/mL overnight at 4 °C. Tissue was stained using the Anti-Goat HRP-DAB Cell & Tissue Staining Kit (brown; Catalog # CTS008) and counterstained with hematoxylin (blue). View our protocol for Chromogenic IHC Staining of Paraffin-embedded Tissue Sections.

Simple Western



Detection of Human Midkine by Simple Western™. Simple Western lane view shows lysates of SH-SY5Y human neuroblastoma cell line, loaded at 0.2 mg/mL. A specific band was detected for Midkine at approximately 26 kDa (as indicated) using 100 µg/mL of Goat Anti-Human Midkine Antigen Affinity-purified Polyclonal Antibody (Catalog # AF-258-PB) followed by 1:50 dilution of HRP-conjugated Anti-Goat IgG Secondary Antibody (Catalog # HAF109). This experiment was conducted under reducing conditions and using the 12-230 kDa separation system.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.2 mg/mL in sterile PBS.
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.

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BACKGROUND

Midkine (MK) is a 15 kDa heparin-binding molecule originally cloned during a search for genes preferentially transcribed during retinoic acid (RA)-induced differentiation. Midkine belongs to a family of neurotrophic and developmentally-regulated heparin-binding molecules consisting of midkine, pleiotrophin (PTN/HBNF/OSF-1/HNGF-8) and the avian midkine homolog, RI-HB (for retinoic acid-inducible heparin-binding protein).

Midkine is a highly basic, nonglycosylated polypeptide that contains five intrachain disulfide bonds. The predicted molecular weight is approximately 13.3 kDa, based on a mature peptide length of 118 amino acid residues in the mouse and 121 amino acid residues in the human. Across species, MK shows 87% identity between the human and murine proteins. Between family members, human MK is approximately 50% identical to human PTN, with conservation of all 10 cysteines. Initial structure-function studies indicate that the C-terminal half of MK contains the principal heparin-binding site plus the molecule's antigenicity and neurite-promoting sequences; while both the C- and N-termini are necessary for the molecule's neurotrophic effects. Cells known to produce MK include endothelial cells, fetal astrocytes, renal proximal tubule epithelial cells and Wilms' (kidney) tumor cells. MK has also been identified in the senile plaques of patients with Alzheimer's disease. The pattern of expression of midkine during development strongly suggests a role for this factor both in epithelial-mesenchymal interactions and in development of the nervous system.

References:

1. Bohlen, P. and I. Kovesdi (1991) Prog. Growth Factor Res. **3**:143.
2. Muramatsu, T. (1993) Int. J. Dev. Biol. **37**:183.

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