Mouse Kremen-1 Antibody

Antigen Affinity-purified Polyclonal Goat IgG
Catalog Number: AF1647

DESCRIPTION

Species Reactivity	Mouse
Specificity	Detects mouse Kremen-1 in direct ELISAs and Western blots. In direct ELISAs, approximately 15% cross-reactivity with recombinant human Kremen-2 and recombinant mouse Kremen-2 is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	Mouse myeloma cell line NS0-derived recombinant mouse Kremen-1 Ala20-Gly395 Accession # Q640Q6
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 either lyophilized or as a 0.2 μm filtered solution in PBS.

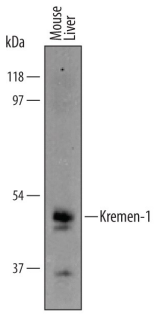
APPLICATIONS

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	1 µg/mL	See Below
Flow Cytometry	2.5 µg/10^6 cells	Differentiated D3 mouse embryonic stem cell line
Immunohistochemistry	5-15 µg/mL	Immersion fixed frozen sections of mouse embryo (E15)
CyTOF-ready	Ready to be labeled using established conjugation methods. No BSA or other carrier proteins that could interfere with conjugation.	

DATA

Western Blot



Detection of Mouse Kremen-1 by Western Blot. Western blot shows lysates of mouse liver tissue. PVDF membrane was probed with 1 µg/mL of Goat Anti-Mouse Kremen-1 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF1647) followed by HRP-conjugated Anti-Goat IgG Secondary Antibody (Catalog # HAF019). A specific band was detected for Kremen-1 at approximately 50 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunoblot Buffer Group 7.

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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Global bio-techne.com info@bio-techne.com techsupport@bio-techne.com TEL +1 612 379 2956
USA TEL 800 343 7475 Canada TEL 855 668 8722 China TEL +86 (21) 52380373
Europe | Middle East | Africa TEL +44 (0)1235 529449

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BACKGROUND

Kremen (Kringle-containing protein marking the eye and the nose) proteins are type I transmembrane proteins that contain extracellular kringle, WSC and CUB domains and an intracellular region without any conserved motifs (1). Two related members, Kremen-1 and -2, have been identified. Kremens bind a subset of the secreted Dickkopf (Dkk) proteins (Dkk-1, -2, and -4) with high affinity to modulate the canonical Wnt signaling pathway that is transduced by the ternary receptor complex composed of Wnt, the seven-transmembrane domain receptor Frizzled, and the LDL-receptor-related protein 5/6 (LRP5/6) co-receptor (2, 3). Within the Dkk family, Dkk-1 and -4 bind directly to the LRP5/6 co-receptor to antagonize the canonical Wnt/β-catenin signaling pathway, but not the planar cell polarity (PCP) signaling pathway that does not involve LRP5/6 (4). In contrast, Dkk-3 has no effect on Wnt signaling and Dkk-2 can function either as an LRP agonist or antagonist, depending on whether the cell expresses Kremen (5). Kremen co-operates with Dkk to antagonize Wnt signaling via formation of a Kremen-Dkk-LRP ternary complex that triggers the internalization and clearance of the complex from the cell surface (3). All three extracellular domains but not the cytoplasmic region of a membrane anchored Kremen are needed for binding to the second cysteine-rich domain of Dkks (3). Mouse Kremen-1 cDNA encodes a 473 amino acid (aa) glycosylated protein with a putative 19 aa signal peptide, a 372 aa extracellular domain, a 21 aa transmembrane domain and a 60 aa cytoplasmic domain. In the extracellular domain, it shares 92% and 41% amino acid sequence identity with human Kremen-1 and mouse Kremen-2, respectively. Mouse Kremen-1 is widely expressed in diverse embryonic (apical ectodermal ridge of the developing fore- and hindlimb buds, telencephalon and the first brachial arch, myotome and sensory tissues) and adult (lung, heart, kidney, skeletal muscle and testis) tissues (1).

References:

1. Nakamura, T. *et al.* (2001) Biochim Biophys Acta **1518**:63.
2. Davidson G. *et al.* (2002) Development **129**:5587.
3. Mao, B. *et al.* (2002) Nature **417**:664.
4. Zorn, A.M. (2001) Curr. Biol. **11**:R592.
5. Mao, B. and C. Niehrs (2003) Gene **302**:179.

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