Human Dkk-4 Alexa Fluor® 532-conjugated Antibody

Monoclonal Mouse IgG_{2B} Clone # 185709

Catalog Number: FAB1269X

100 µg

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human Dkk-4 in ELISAs and Western blots. In direct ELISAs and Western blots, less than 2% cross-reactivity with recombinant mouse (rm) Dkk-4 is observed and no cross-reactivity with recombinant human (rh) Dkk-1 or rhDkk-3 is observed. In
Source	Monoclonal Mouse IgG_{2B} Clone # 185709
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant human Dkk-4 Leu19-Leu224 Accession # Q9UBT3
Conjugate	Alexa Fluor 532 Excitation Wavelength: 534 nm Emission Wavelength: 553 nm
Formulation	Supplied 0.2mg/ml in 1X PBS with RDF1 and 0.09% Sodium Azide *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.

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.*

ELISA Capture (Matched Antibody Pair)	Optimal dilution of this antibody should be experimentally determined.
ELISA Detection (Matched Antibody Pair)	Optimal dilution of this antibody should be experimentally determined.
Western Blot	Optimal dilution of this antibody should be experimentally determined.

PREPARATION AND STORAGE

Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	Protect from light. Do not freeze. 12 months from date of receipt, 2 to 8 °C as supplied

BACKGROUND

Dickkopf related protein 4 (Dkk-4) is a member of the Dkk protein family that includes Dkk-1, -2, -3, and -4 (1). All four members are secreted proteins that are synthesized as precursor proteins with an N-terminal signal peptide and 2 conserved cysteine-rich domains, which are separated by a linker region. Dkk proteins have potential furin type proteolytic cleavage sites, and short forms of Dkk-2 and Dkk-4 containing only the second cysteine-rich domain can be generated by proteolytic processing (1). Dkk proteins have distinct patterns of expression in adult and embryonic tissues, suggesting that they may play diverse roles in these tissues.

The Dkk proteins have distinct effects on Wnt signaling. Dkk-1 and Dkk-4 are Wnt antagonists. Dkk-3 has not been demonstrated to affect Wnt signaling, and Dkk-2 acts as an agonist or antagonist, depending on the cellular context. Wnt signaling regulates many important developmental processes including neural crest differentiation, brain development, kidney morphogenesis, and sex determination. In addition, Wnt signaling has also been implicated in tumor formation. Canonical Wnt signaling via the beta-catenin pathway is transduced by a receptor complex composed of the Frizzled proteins (Fz) and low-density lipoprotein (LDL) receptor-related proteins (LRP5/6) (2, 3). Unlike many soluble Wnt antagonists that function by binding extracellular Wnt ligands to prevent interaction of Wnt with the Fz-LRP5/6 receptor complex, Dkk-1 and Dkk-4 antagonize Wnt/beta-catenin signaling by direct high-affinity binding to the Wnt coreceptor LRP5/6 and inhibiting interaction of LRP5/6 with the Wnt-Frizzled complex (4). Dkk-1 and Dkk-4 also bind the transmembrane proteins Kremen1 (Krm1) and Krm2 with high-affinity (5). Krm2 has been shown to form a ternary complex with Dkk-1 or -4 and LRP5/6 to trigger internalization of the complex and removal of LRP6 from the cell surface. Thus, Dkk-1/4 and Kremens function synergistically to antagonize LRP5/6-mediated Wnt activity. Dkk-2 also binds to LRP5/6 and the Kremens, but Dkk-2 acts as an antagonist of the Wnt signaling pathway only in the presence of Krm2 (5, 6). Dkk-2 binding to LRP5/6 in the absence of Krm2 activates rather than inhibits Wnt signalling (6).

PRODUCT SPECIFIC NOTICES

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