

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human Dkk-2 in direct ELISAs.
Source	Monoclonal Mouse IgG _{2A} Clone # 994930
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Chinese Hamster Ovary cell line, CHO-derived human Dkk-2 Met1-Ile259 Accession # NP_055236
Conjugate	Alexa Fluor 750 Excitation Wavelength: 749 nm Emission Wavelength: 775 nm
Formulation	Supplied 0.2 mg/mL in a saline solution containing BSA and Sodium Azide. See Certificate of Analysis for details. *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.

	Recommended Concentration	Sample
Intracellular Staining by Flow Cytometry	0.25-1 µg/10 ⁶ cells	Human SHSY-5Y neuroblastoma cell line fixed and permeabilized with FlowX FoxP3 Fixation & Permeabilization Buffer Kit (Catalog # FC012)

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 2 (Dkk-2) is a member of the Dickkopf family of secreted Wnt modulators (1-3). Dkk proteins contain a signal peptide and two conserved cysteine-rich domains that are separated by a linker region. The second cysteine-rich domain mediates Dkk-2 binding activities, and its interaction with β-propeller domains of LRP-5/6 has been mapped (2-4, 7). The 226 amino acid (aa), ~35 kDa mature human Dkk-2 shares 96%, 97%, 97%, 97%, 97% and 98% aa identity with mouse, rat, canine, equine, bovine and porcine Dkk-2, respectively. Mouse Dkk-2 can activate the canonical Wnt signaling pathway in *Xenopus* embryos, showing evolutionary conservation of function (5). Dkk proteins modify Wnt engagement of a receptor complex composed of a Frizzled protein and a low-density lipoprotein receptor-related protein, either LRP-5 or LRP-6 (3). Also, Kremen-1 and Kremen-2 are high affinity receptors for Dkk-1 and Dkk-2 (9). When LRP-6 is over-expressed, direct high-affinity binding of Dkk-2 to LRP can enhance canonical Wnt signaling (6-8). However, when Dkk-2 and LRP-6 form a ternary complex with Kremen-2, Wnt signaling is inhibited due to internalization of Dkk-2/LRP6/Krm2 complexes (9, 10). Thus, depending on the cellular context, Dkk-2 can either activate or inhibit canonical Wnt signaling (3). In contrast, binding of Dkk-1 or Dkk-4 to LRP is consistently antagonistic (3). Dkk proteins are expressed in mesenchymal tissues and control epithelial transformations. Dkk-2 expression has been studied most in bone and eye, although it is expressed as early as periimplantation in mice (11). Mouse Dkk-1 or Dkk-2 deficiencies have opposite effects on bone homeostasis, despite down-regulating Wnt antagonism in both cases (12, 13). Dkk-2 expression is induced by Wnts in bone, and is thought to enhance bone density by promoting terminal differentiation of osteoblasts and mineral deposition (12). In contrast, Dkk-1 negatively regulates late osteoblast proliferation, which limits bone density (13). Dkk-2-deficient mice are blind, exhibiting faulty differentiation of corneal epithelium and ectopic blood vessels in the periocular mesenchyme (14, 15).

References:

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Human Dkk-2 Alexa Fluor® 750-conjugated Antibody

Monoclonal Mouse IgG_{2A} Clone # 994930

Catalog Number: IC6628S

100 µg

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