

## DESCRIPTION

|                                                                                                                                                                                                         |                                                                                                   |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| <b>Species Reactivity</b>                                                                                                                                                                               | Mouse                                                                                             |
| <b>Specificity</b>                                                                                                                                                                                      | Detects mouse Dkk-2 in Western blots.                                                             |
| <b>Source</b>                                                                                                                                                                                           | Polyclonal Goat IgG                                                                               |
| <b>Purification</b>                                                                                                                                                                                     | Antigen Affinity-purified                                                                         |
| <b>Immunogen</b>                                                                                                                                                                                        | Mouse myeloma cell line NS0-derived recombinant mouse Dkk-2<br>Ser26-Ile259<br>Accession # Q9QYZ8 |
| <b>Conjugate</b>                                                                                                                                                                                        | Alexa Fluor 647<br>Excitation Wavelength: 650 nm<br>Emission Wavelength: 668 nm                   |
| <b>Formulation</b>                                                                                                                                                                                      | 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.

|                             |                                                                        |
|-----------------------------|------------------------------------------------------------------------|
| <b>Western Blot</b>         | Optimal dilution of this antibody should be experimentally determined. |
| <b>Immunohistochemistry</b> | Optimal dilution of this antibody should be experimentally determined. |

## PREPARATION AND STORAGE

|                                |                                                                                                                   |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------|
| <b>Shipping</b>                | The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below. |
| <b>Stability &amp; Storage</b> | 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, which shows a configuration of cysteines conserved in prokineticin and colipase families, mediates Dkk-2 binding activities (2-4). The 226 amino acid (aa), ~35 kDa mature mouse Dkk-2 shares 41% and 34% aa identity with mouse Dkk-1 and Dkk-4, respectively. It also shares 99%, 96%, 96%, 96% and 94% aa identity with rat, human, canine, equine and bovine Dkk-2, respectively, and can activate the canonical Wnt signaling pathway in *Xenopus* embryos (5). Dkk proteins modify Wnt engagement of a receptor complex composed of a Frizzled protein and a low-density lipoprotein receptor-related protein, either LRP5 or LRP6 (3). When LRP6 is overexpressed, direct high-affinity binding of Dkk-2 to LRP can enhance canonical Wnt signaling (6-8). However, when Dkk-2 and LRP6 form a ternary complex with Kremen2, 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. Mouse Dkk-1 or Dkk-2 deficiencies have opposite effects on bone homeostasis, despite downregulating Wnt antagonism in both cases (11, 12). 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 (11). In contrast, Dkk-1 negatively regulates late osteoblast proliferation, which limits bone density (12). Dkk-2-deficient mice are blind due to faulty differentiation of corneal epithelium (13).

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