

#### DESCRIPTION

|                           |                                                                                                                                                                                                                                                                             |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Species Reactivity</b> | Human                                                                                                                                                                                                                                                                       |
| <b>Specificity</b>        | Detects human Crossveinless-2/CV-2 in direct ELISAs and Western blots. In these formats, approximately 10% cross-reactivity with recombinant mouse CV-2 is observed.                                                                                                        |
| <b>Source</b>             | Polyclonal Sheep IgG                                                                                                                                                                                                                                                        |
| <b>Purification</b>       | Antigen Affinity-purified                                                                                                                                                                                                                                                   |
| <b>Immunogen</b>          | Mouse myeloma cell line NS0-derived recombinant human Crossveinless-2/CV-2 (R&D Systems, Catalog # 1956-CV)<br>Val34-Arg685<br>Accession # Q8N8U9                                                                                                                           |
| <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<br><br>*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>Immunocytochemistry</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

Crossveinless-2 (CV-2), also known as bone morphogenetic protein-binding endothelial cell precursor-derived regulator (BMPER), is a secreted chordin-like protein that modulates the BMP signaling pathway (1-3). Human CV-2 is synthesized as a 685 amino acid (aa) residue precursor protein with a putative 39 aa signal peptide, five tandem chordin-like cysteine-rich (CR) domains, a partial von Willebrand factor type D domain (vWD), and a carboxyl trypsin inhibitor-like cysteine-rich domain (TIL) (1, 4). Secreted CV-2 is reported to be proteolytically cleaved to generate two fragments that are disulfide-linked (1, 2). The GDPH sequence is conserved in CV-2 from other species. It is also found in multiple proteins that undergo a similar type of cleavage (5). Human CV-2 message is detected in many tissues, with the highest expression detected in adult brain and adult and fetal lung (1). It is also expressed in flk-1<sup>+</sup> endothelial cell precursors and in primary chondrocytes (2). During embryonic development, CV-2 is expressed in regions of high BMP signaling, such as the posterior primitive streak and the ventral tail bud (4). Human CV-2 shares 92% and 34% aa sequence identity with the mouse and *Drosophila* homologs, respectively (1, 4). Results from biochemical experiments using recombinant CV-2 show that CV-2 directly interacts with BMP-2, -4, and -6 to antagonize BMP signaling, which can regulate a wide range of differentiation processes (1, 2). In contrast, genetic data from *Drosophila* suggest that CV-2 potentiates BMP-signaling (6). It is possible that like TSG, CV-2 can positively and negatively modulate BMP signal transduction depending on the cell context (7).

#### PRODUCT SPECIFIC NOTICES

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