Human Crossveinless-2/CV-2 Alexa Fluor® 532-conjugated Antibody

Monoclonal Rat IgG_{2A} Clone # 355304

Catalog Number: FAB1956X

100 µg

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human Crossveinless-2/CV-2 in direct ELISAs and Western blots. In Western blots, 25% cross-reactivity with recombinant mouse CV-2 is observed.
Source	Monoclonal Rat IgG_{2A} Clone # 355304
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant human Crossveinless-2/CV-2 Val34-Arg685 Accession # Q8N8U9
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.*

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

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) 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 cleavage site of R&D Systems' recombinant CV-2 is found to be between Asp369 and Pro370 in the GDPH sequence within the vWD domain. This cleavage is likely due to an autocatalytic mechanism triggered by low pH comparable to that of the late secretory pathway (5). 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 $Flk\text{-}1^+$ 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).

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