

CD2AP (350-639): sc-4348 WB

BACKGROUND

CD2-associated protein (CD2AP, CMS) is a cytoplasmic protein critical for the integrity of kidney glomerular filtration and T cell function. CD2AP is an adapter molecule that can bind to the cytoplasmic domain of nephrin, a component of the glomerular slit diaphragm. Nephrin and CD2AP interact with the p85 regulatory subunit of phosphoinositide 3-OH kinase (PI3K) *in vivo*, recruit PI3K to the plasma membrane, and, together with podocin, stimulate PI3K-dependent AKT signaling in podocytes (visceral glomerular epithelial cells of the kidney). Targeted disruption of CD2AP leads to proteinuria, suggesting that CD2AP is essential for the integrity of glomerular podocytes. VEGF can stimulate colocalization of Flt-1, CD2AP, and c-Cbl in endocytic vesicles.

REFERENCES

1. Li, C., et al. 2000. CD2AP is expressed with nephrin in developing podocytes and is found widely in mature kidney and elsewhere. *Am. J. Physiol. Renal. Physiol.* 279: F785-792.
2. Kirsch, K.H., et al. 2001. The adapter type protein CMS/CD2AP binds to the proto-oncogenic protein c-Cbl through a tyrosine phosphorylation-regulated Src homology 3 domain interaction. *J Biol Chem* 276: 4957-4963.
3. Schwarz, K., et al. 2001. Podocin, a raft-associated component of the glomerular slit diaphragm, interacts with CD2AP and nephrin. *J. Clin. Invest.* 108: 1621-1629.
4. Badour, K., et al. 2003. The Wiskott-Aldrich syndrome protein acts downstream of CD2 and the CD2AP and PSTPIP1 adaptors to promote formation of the immunological synapse. *Immunity* 18: 141-154.
5. Cormont, M., et al. 2003. CD2AP/CMS regulates endosome morphology and traffic to the degradative pathway through its interaction with Rab4 and c-Cbl. *Traffic* 4: 97-112.
6. Lynch, D.K., et al. 2003. A Cortactin-CD2-associated protein (CD2AP) complex provides a novel link between epidermal growth factor receptor endocytosis and the actin cytoskeleton. *J. Biol. Chem.* 278: 21805-21813.
7. Huber, T.B., et al. 2003. Nephrin and CD2AP associate with phosphoinositide 3-OH kinase and stimulate AKT-dependent signaling. *Mol Cell Biol* 23: 4917-4928.
8. Kobayashi, S., et al. 2004. The c-Cbl/CD2AP complex regulates VEGF-induced endocytosis and degradation of Flt-1 (VEGFR-1). *FASEB J.* 18: 929-931.

SOURCE

CD2AP (350-639) is expressed in *E. coli* as a 59 kDa tagged fusion protein corresponding to amino acids 350-639 of CD2AP of human origin.

PRODUCT

CD2AP (350-639) is purified from bacterial lysates (>98%) by column chromatography; supplied as 10 µg protein in 0.1 ml SDS-PAGE loading buffer.

APPLICATIONS

CD2AP (350-639) is suitable as a Western blotting control for sc-8764 and sc-9137.

STORAGE

Store at -20° C; stable for one year from the date of shipment.

RESEARCH USE

For research use only, not for use in diagnostic procedures.