Qty: 100 µg/200 µL

Mouse anti-CUL-5/VACM-1

Catalog No. 39-9000

Lot No.

Mouse anti-CUL-5/VACM-1

FORM

This monoclonal antibody is supplied as a 200 µL aliquot at a concentration of 0.5 mg/mL in PBS, pH 7.4, containing 0.1% sodium azide. This antibody is highly purified from mouse ascites by protein A chromatography.

CLONE: ZC009 **ISOTYPE:** Mouse IgG1-kappa

IMMUNOGEN

Synthetic peptide derived from the N-terminal region of the mouse and rat CUL-5/VACM-1 proteins, which are 89% homologous to human

SPECIFICITY

This antibody is specific for the CUL-5 (cullin-5, VACM-1, vasopressin-activated calcium-mobilizing receptor 1) protein. On Western blots, it identifies target bands at ~82 and ~63 kDa in MDA-MB231 cell lysates.

REACTIVITY

Reactivity has been confirmed with human MDA-MB231 cell lysates. Based on amino acid sequence homology, reactivity with mouse and rat is also expected.

Sample	ELISA	Western Blotting
Human	ND	+++
Mouse	ND	ND
Rat	ND	ND
Immunogen	+++	N/A

(Excellent +++, Good++, Poor +, No reactivity 0, Not applicable N/A, Not Determined ND)

USAGE

Working concentrations for specific applications should be determined by the investigator. Appropriate concentrations will be affected by several factors, including secondary antibody affinity, antigen concentration, sensitivity of detection method, temperature and length of incubations, etc. The suitability of this antibody for applications other than those listed below has not been determined. The following concentration ranges are recommended starting points for this product.

ELISA: 0.1 – 1.0 µg/mL
Western Blotting: 1-3 µg/mL

STORAGE

Store at 2-8°C for up to one month. Store at –20°C for long-term storage. Avoid repeated freezing and thawing.

(cont'd)

BACKGROUND

CUL-5 (cullin-5, VACM-1, vasopressin-activated calcium-mobilizing receptor) is a cell surface protein involved in intracellular signal transduction.[1] It is one component of the ECS (elongin B/C-cul2/cul5-SOCS box protein) E3 ubiquitin ligase complex, which mediates the ubiquitination and subsequent proteasomal degradation of target proteins. CUL-5 is ubiquitously expressed in the central nervous system and in many peripheral organs.[2] Human immunodeficiency virus-1 (HIV-1) protein Vif forms a Skp1-cullin-F-box (SCF)-like complex with CUL-5/VACM-1 and elongins B and C.[3] The ability of Vif to suppress the antiviral activity of APOBEC3G, which induces hypermutations in newly synthesized viral DNA, is specifically dependent on CUL-5-SCF function, as it allows Vif to interact with APOBEC3G and induce its ubiquitination and degradation.[3] The CUL-5-SCF pathway used by Vif is thus a potential target for antiviral development.[3]

The CUL-5 gene product is also known as VACM-1. Unlike the membrane-integrated AVP receptors or the cytosolic/nuclear cul-1 and cul-2 proteins, the VACM-1 protein can be either nuclear/cytosolic or a cell membrane protein. CUL-5/VACM-1 inhibits cellular growth by a mechanism that involves MAPK and p53 signaling pathways.[4] In rabbits, mRNA is expressed in kidney medulla, brain, heart and ovaries.[5] In human tissues expression in kidney, brain, heart, placenta, and skeletal muscle is observed. The expression of CUL-5/VACM-1 is dependent on the cell cycle. This protein virtually disappears during the S phase and localizes to the cytosol during cell division and to the cell membrane at the completion of cytokinesis in rat adrenal medulla endothelial cells.[6] CUL-5/VACM-1 is also expressed in both breast epithelial cells and breast cancer cells. 82% of breast cancers demonstrate decreased CUL-5/VACM-1 expression versus matched normal tissues.[7] This finding supports the hypothesis that decreased expression of CUL-5/VACM-1 may play a role in breast tumorigenesis. Further evidence for this finding is observed in T47D breast cancer cells in which overexpression of CUL-5/VACM-1 significantly attenuates cellular proliferation and MAPK phosphorylation when compared to control cells.[8]

REFERENCES

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7. Fay MJ, et al. *Mol Cancer* 2:40, 2003.
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RELATED PRODUCTS

Product	*Conjugate*	*Cat. No.*
Protein A	Sepharose® 4B	10-1041
rec-Protein G	Sepharose® 4B	10-1241

Conjugate	ZyMAX™ Goat x Rabbit IgG (H+L)	ZyMAX™ Goat x Mouse IgG (H+L)
Purified	81-6100	81-6500
FITC	81-6111	81-6511
TRITC	81-6114	81-6514
Cy™3	81-6115	81-6515
Cy™5	81-6116	81-6516
HRP	81-6120	81-6520
AP	81-6122	81-6522
Biotin	81-6140	81-6540

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