

# RCAN2/3 (B-9): sc-374454

## BACKGROUND

RCAN2, also known as Calcipressin-2 or thyroid hormone-responsive protein ZAKI-4, is a 197 amino acid protein that belongs to the RCAN family. RCAN2 is a known inhibitor of calcineurin-dependent transcriptional responses by binding to the catalytic domain of calcineurin A and could play a role during central nervous system development. It is suggested that RCAN2 is constitutively expressed in endothelial cells and acts similar to DSCR1 (Down syndrome candidate region 1) in inhibiting calcineurin activity and restraining VEGF-mediated angiogenesis. RCAN2 is expressed in fibroblasts, heart, brain, liver and skeletal muscle but not in placenta, lung, kidney and pancreas. Expression of RCAN2 is upregulated by physiologic concentrations of triiodothyroxine. RCAN3 (regulator of calcineurin 3), also known as Calcipressin-3, DSCR1L2 (Down syndrome candidate region 1-like protein 2) and MCIP3 (myocyte-enriched calcineurin-interacting protein 3), is a 241 amino acid protein that potentially is involved in central nervous system development. As its name suggests, RCAN3 binds to calcineurin. Overexpression of RCAN3 results in inhibition of calcineurin activity towards the nuclear factor of activated T-cells (NFAT) transcription factors and also downregulates NFAT-dependent cytokine gene expression in activated Jurkat T-cells. Though expressed ubiquitously at low levels, high expression of RCAN3 is found in kidney, heart, liver, peripheral blood lymphocytes and skeletal muscle. RCAN3 also interacts with cardiac Troponin I, suggesting that it may play a role in cardiac contraction events.

## REFERENCES

1. Qin, L., et al. 2006. Down syndrome candidate region 1 isoform 1 mediates angiogenesis through the calcineurin-NFAT pathway. *Mol. Cancer Res.* 4: 811-820.
2. Mulero, M.C., et al. 2007. RCAN3, a novel calcineurin inhibitor that downregulates NFAT-dependent cytokine gene expression. *Biochim. Biophys. Acta* 1773: 330-341.

## CHROMOSOMAL LOCATION

Genetic locus: RCAN2 (human) mapping to 6p21.1, RCAN3 (human) mapping to 1p36.11; Rcan2 (mouse) mapping to 17 B3, Rcan3 (mouse) mapping to 4 D3.

## SOURCE

RCAN2/3 (B-9) is a mouse monoclonal antibody raised against amino acids 30-241 mapping at the C-terminus of RCAN3 of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>2a</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

RCAN2/3 (B-9) is available conjugated to agarose (sc-374454 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-374454 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-374454 PE), fluorescein (sc-374454 FITC), Alexa Fluor® 488 (sc-374454 AF488), Alexa Fluor® 546 (sc-374454 AF546), Alexa Fluor® 594 (sc-374454 AF594) or Alexa Fluor® 647 (sc-374454 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-374454 AF680) or Alexa Fluor® 790 (sc-374454 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

## APPLICATIONS

RCAN2/3 (B-9) is recommended for detection of RCAN2 and RCAN3 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Molecular Weight of RCAN2: 22 kDa.

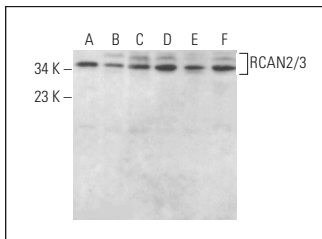
Molecular Weight of RCAN3: 27 kDa.

Positive Controls: A-10 cell lysate: sc-3806, PC-3 cell lysate: sc-2220 or NCI-H460 whole cell lysate: sc-364235.

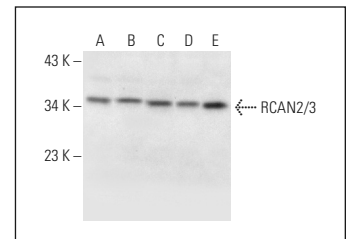
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## DATA



RCAN2/3 (B-9): sc-374454. Western blot analysis of RCAN2/3 expression in MCF7 (A), A-10 (B), Sol8 (C), P19 (D), M1 (E) and C6 (F) whole cell lysates.



RCAN2/3 (B-9): sc-374454. Western blot analysis of RCAN2/3 expression in HT-29 (A), PC-3 (B), NCI-H460 (C), MCF7 (D) and HeLa (E) whole cell lysates.

## STORAGE

Store at 4° C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.

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