SANTA CRUZ BIOTECHNOLOGY, INC.

RWDD3 siRNA (h): sc-88097

BACKGROUND

RWDD3 (RWD domain containing protein 3), also known as RSUME (RWD-containing sumoylation enhancer), is a 267 amino acid protein localized to the nucleus and cytoplasm. RWDD3 contains one RWD domain, a conserved region of about 110 amino acid residues. RWD domains are found in many RING finger proteins, DEAD-like helicases and WD repeat containing proteins. It is believed that RWD domains may be involved in protein interaction. Induced by hypoxia, RWDD3 interacts with UBC9 and enhances the sumoylation of many proteins, including PIAS, HIF-1α and IκB. Widely expressed, RWDD3 has highest levels found in kidney, heart, liver, pituitary, cerebellum, stomach, spleen and prostate. RWDD3 is expressed as three isoforms produced by alternative splicing events.

REFERENCES

1. Wiemann, S., Weil, B., Wellenreuther, R., Gassenhuber, J., Glassl, S., Ansorge, W., Böcher, M., Blöcker, H., Bauersachs, S., Blum, H., Lauber, J., Düsterhöft, A., Beyer, A., Köhrer, K., Strack, N., Mewes, H.W., et al. 2001. Toward a catalog of human genes and proteins: sequencing and analysis of 500 novel complete protein coding human cDNAs. Genome Res. 11: 422-435.
2. Brandenberger, R., Wei, H., Zhang, S., Lei, S., Murage, J., Fisk, G.J., Li, Y., Xu, C., Fang, R., Guegler, K., Rao, M.S., Mandalam, R., Lebkowski, J. and Stanton, L.W. 2004. Transcriptome characterization elucidates signaling networks that control human ES cell growth and differentiation. Nat. Biotechnol. 22: 707-716.
3. Carbia-Nagashima, A., Gerez, J., Perez-Castro, C., Paez-Pereda, M., Silberstein, S., Stalla, G.K., Holsboer, F. and Arzt, E. 2007. RSUME, a small RWD-containing protein, enhances SUMO conjugation and stabilizes HIF-1α during hypoxia. Cell 131: 309-323.
4. Kang, N., Chen, D., Wang, L., Duan, L., Liu, S., Tang, L., Liu, Q., Cui, L. and He, W. 2008. RWDD1, a thymus aging related molecule, is a new member of the intrinsically unstructured protein family. Cell. Mol. Immunol. 5: 333-339.
5. Giacomini, D., Haedo, M., Gerez, J., Druker, J., Páez-Pereda, M., Labeur, M., Stalla, G.K. and Arzt, E. 2009. Differential gene expression in models of pituitary prolactin-producing tumoral cells. Horm. Res. 71: 88-94.

CHROMOSOMAL LOCATION

Genetic locus: RWDD3 (human) mapping to 1p21.3.

PRODUCT

RWDD3 siRNA (h) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see RWDD3 shRNA Plasmid (h): sc-88097-SH and RWDD3 shRNA (h) Lentiviral Particles: sc-88097-V as alternate gene silencing products.

For independent verification of RWDD3 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-88097A, sc-88097B and sc-88097C.

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

RWDD3 siRNA (h) is recommended for the inhibition of RWDD3 expression in human cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 µM in 66 µl. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor RWDD3 gene expression knockdown using RT-PCR Primer: RWDD3 (h)-PR: sc-88097-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Chen, X., Kuang, W., Huang, H., Li, B., Zhu, Y., Zhou, B. and Yan, L. 2018. Knockdown of RWD domain containing 3 inhibits the malignant phenotypes of glioblastoma cells via inhibition of phosphoinositide 3-kinase/protein kinase B signaling. Exp. Ther. Med. 16: 384-393.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.