SANTA CRUZ BIOTECHNOLOGY, INC.

RAP80 siRNA (h): sc-92007

BACKGROUND

Receptor-associated protein 80 (RAP80), also known as Ubiquitin interaction motif-containing protein 1 (UIMC1) or retinoid X receptor-interacting protein 110 (RXRIP110), is a 719 amino acid protein. Acting as a transcription repressor, RAP80 interacts with GCNF, thereby blocking GCNF interaction with the corepressor N-CoR. Localized to the nucleus, RAP80 is phosphorylated upon DNA damage. RAP80 contains two nuclear localization signals and one UIM (ubiquitin-interacting motif) repeat in the N-terminus, while the C-terminus contains two zinc fingers, a third nuclear localization signal and a potential PEST sequence. RAP80 is expressed as four isoforms produced by alternative splicing and is present in thymus, testis, heart and ovary.

REFERENCES

1. Yan, J., et al. 2007. RAP80 interacts with the SUMO-conjugating enzyme UBC9 and is a novel target for sumoylation. Biochem. Biophys. Res. Commun. 362: 132-138.
2. Yan, J., et al. 2007. The ubiquitin-interacting motif containing protein RAP80 interacts with BRCA1 and functions in DNA damage repair response. Cancer Res. 67: 6647-6656.
3. Wang, B. and Elledge, S.J. 2007. UBC13/RNF8 ubiquitin ligases control foci formation of the RAP80/Abraxas/BRCA1/BRCC36 complex in response to DNA damage. Proc. Natl. Acad. Sci. USA 104: 20759-20763.
4. Online Mendelian Inheritance in Man, OMIM™. 2007. Johns Hopkins University, Baltimore, MD. MIM Number: 609433. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. Yan, J. and Jetten, A.M. 2008. RAP80 and RNF8, key players in the recruitment of repair proteins to DNA damage sites. Cancer Lett. 271: 179-190.
6. Yan, J., et al. 2008. RAP80 responds to DNA damage induced by both ionizing radiation and UV irradiation and is phosphorylated at Ser 205. Cancer Res. 68: 4269-4276.
7. Osorio, A., et al. 2009. Evaluation of the BRCA1 interacting genes RAP80 and CCDC98 in familial breast cancer susceptibility. Breast Cancer Res. Treat. 113: 371-376.
8. Akbari, M.R., et al. 2009. Germline RAP80 mutations and susceptibility to breast cancer. Breast Cancer Res. Treat. 113: 377-381.

CHROMOSOMAL LOCATION

Genetic locus: UIMC1 (human) mapping to 5q35.2.

PRODUCT

RAP80 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 RAP80 shRNA Plasmid (h): sc-92007-SH and RAP80 shRNA (h) Lentiviral Particles: sc-92007-V as alternate gene silencing products.

For independent verification of RAP80 (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-92007A, sc-92007B and sc-92007C.

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

RAP80 siRNA (h) is recommended for the inhibition of RAP80 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 RAP80 gene expression knockdown using RT-PCR Primer: RAP80 (h)-PR: sc-92007-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. Li, Y., et al. 2012. Induction of pancreatic cancer cell apoptosis and enhancement of gemcitabine sensitivity by RAP80 siRNA. Dig. Dis. Sci. 57: 2072-2078.
2. Jin, G., et al. 2019. RAP80 expression in breast cancer and its relationship with apoptosis in breast cancer cells. Onco Targets Ther. 12: 625-634.

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.