

YAP siRNA (m): sc-38638

BACKGROUND

The Yes-associated protein, otherwise known as YAP, is a 14-3-3-binding molecule that was originally recognized by virtue of its ability to bind to the SH3 domain of Yes. The binding of YAP to 14-3-3 requires the phosphorylation of a homologous serine residue (Ser 112) in the YAP 14-3-3-binding motif. The highly conserved and ubiquitously expressed 14-3-3 proteins regulate differentiation, cell cycle progression and apoptosis by binding intracellular phosphoproteins involved in signal transduction. YAP may link events at the plasma membrane and cytoskeleton to inhibition of transcription in the nucleus in a manner regulated by 14-3-3 proteins. YAP shares homology with the WW domain of TAZ, transcriptional co-activator with PDZ-binding motif, which functions as a transcriptional co-activator by binding to the PPXY motif present in transcription factors. YAP is expressed at high levels in the lung, placenta, prostate, ovary and testis.

REFERENCES

1. Sudol, M., et al. 1995. Characterization of the mammalian YAP (Yes-associated protein) gene and its role in defining a novel protein module, the WW domain. *J. Biol. Chem.* 270: 14733-14741.
2. Basu, S., et al. 2003. Akt phosphorylates the Yes-associated protein, YAP, to induce interaction with 14-3-3 and attenuation of p73-mediated apoptosis. *Mol. Cell* 11: 11-23.

CHROMOSOMAL LOCATION

Genetic locus: Yap1 (mouse) mapping to 9 A1.

PRODUCT

YAP siRNA (m) 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see YAP shRNA Plasmid (m): sc-38638-SH and YAP shRNA (m) Lentiviral Particles: sc-38638-V as alternate gene silencing products.

For independent verification of YAP (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-38638A, sc-38638B and sc-38638C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

YAP siRNA (m) is recommended for the inhibition of YAP expression in mouse 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 μ M in 66 μ l. 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.

GENE EXPRESSION MONITORING

YAP (G-6): sc-376830 is recommended as a control antibody for monitoring of YAP gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor YAP gene expression knockdown using RT-PCR Primer: YAP (m)-PR: sc-38638-PR (20 μ l, 549 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Lee, M.J., et al. 2014. YAP and TAZ regulate skin wound healing. *J. Invest. Dermatol.* 134: 518-525.
2. Mao, Y., et al. 2016. Targeting TEAD/YAP-transcription-dependent necrosis, TRIAD, ameliorates Huntington's disease pathology. *Hum. Mol. Genet.* 25: 4749-4770.
3. Zhang, C., et al. 2018. Oroxylin A prevents angiogenesis of LSECs in liver fibrosis via inhibition of YAP/HIF-1 α signaling. *J. Cell. Biochem.* 119: 2258-2268.
4. Yin, X., et al. 2019. Hexokinase 2 couples glycolysis with the profibrotic actions of TGF- β . *Sci. Signal.* 12: eaax4067.
5. Tanaka, H., et al. 2020. YAP-dependent necrosis occurs in early stages of Alzheimer's disease and regulates mouse model pathology. *Nat. Commun.* 11: 507.
6. Kang, J.H., et al. 2020. Transforming growth factor β induces fibroblasts to express and release the immunomodulatory protein PD-L1 into extracellular vesicles. *FASEB J.* 34: 2213-2226.
7. Kim, H.Y., et al. 2021. Low-temperature argon plasma regulates skin moisturizing and melanogenesis-regulating markers through Yes-associated protein. *Int. J. Mol. Sci.* 22: 1895.
8. Jun, J.H., et al. 2022. Reduced expression of TAZ inhibits primary cilium formation in renal glomeruli. *Exp. Mol. Med.* 54: 169-179.

RESEARCH USE

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