p53 shRNA Plasmid (m): sc-29436-SH

**BACKGROUND**

p53, a DNA-binding, oligomerization domain- and transcription activation domain-containing tumor suppressor, upregulates growth arrest and apoptosis-related genes in response to stress signals, thereby influencing programmed cell death, cell differentiation and cell cycle control mechanisms. p53 localizes to the nucleus, yet can be chaperoned to the cytoplasm by the negative regulator, MDM2. MDM2 is an E3 ubiquitin ligase that is upregulated in the presence of active p53, where it poly-ubiquitinates p53 for proteasome targeting. p53 fluctuates between latent and active DNA-binding conformations and is differentially activated through posttranslational modifications, including phosphorylation and acetylation. Mutations in the DNA-binding domain of p53, amino acids 110-286, can compromise energetically-favorable association with *cis* elements and are implicated in several human cancers.

**REFERENCES**


**CHROMOSOMAL LOCATION**

Genetic locus: Trp53 (mouse) mapping to 11 B3.

**PRODUCT**

p53 shRNA Plasmid (m) is a pool of 4 target-specific lentiviral vector plasmids each encoding 19-25 nt (plus hairpin) shRNAs designed to knock down gene expression. Each plasmid contains a puromycin resistance gene for the selection of cells stably expressing shRNA. Each vial contains 20 µg of lyophilized shRNA plasmid DNA. Suitable for up to 20 transfections. Also see p53 siRNA (m): sc-29436 and p53 shRNA (m) Lentiviral Particles: sc-29436.

**STORAGE AND RESUSPENSION**

Store lyophilized shRNA plasmid DNA at 4°C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at 4°C for short term storage or -80°C for long term storage. Avoid repeated freeze thaw cycles.

Resuspend lyophilized shRNA plasmid DNA in 200 µl of the deionized water provided. Resuspension of the shRNA plasmid DNA in 200 µl of deionized water makes a 0.1 µg/µl solution in a 10 mM Tris, 1 mM EDTA buffered solution.

**APPLICATIONS**

p53 shRNA Plasmid (m) is recommended for the inhibition of p53 expression in mouse cells.

**SUPPORT REAGENTS**

For optimal shRNA Plasmid transfection efficiency, Santa Cruz Biotechnology’s shRNA Plasmid Transfection Reagent: sc-108061 (0.2 ml) and shRNA Plasmid Transfection Medium: sc-108062 (20 ml) are recommended. Control shRNAs are available as 20 µg lyophilized plasmid DNA. Each encodes a scrambled shRNA sequence that will not lead to the specific degradation of any known cellular mRNA. Control shRNA Plasmids include: sc-108060, sc-108065 and sc-108066.

**GENE EXPRESSION MONITORING**

p53 (A-1): sc-393031 is recommended as a control antibody for monitoring of p53 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).

To ensure optimal results, the following support reagents are recommended:

1) Western Blotting: use m-IgG® HRP: sc-516102 or m-IgG® 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) Immunofluorescence: use m-IgG® HRP: sc-516140 or m-IgG® PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

**RT-PCR REAGENTS**

Semi-quantitative RT-PCR may be performed to monitor p53 gene expression knockdown using RT-PCR Primer: p53 (m)-PR: sc-29436-PR (20 µl, 482 bp). Annealing temperature for the primers should be 55-60°C and the extension temperature should be 68-72°C.

**SELECT PRODUCT CITATIONS**


**RESEARCH USE**

The purchase of this product conveys to the buyer the nontransferable right to use the purchased amount of the product and all replicates and derivatives for research purposes conducted by the buyer in his laboratory only (whether the buyer is an academic or for-profit entity). The buyer cannot sell or otherwise transfer (a) this product (b) its components or (c) materials made using this product or its components to a third party, or otherwise use this product or its components or materials made using this product or its components for Commercial Purposes.