



MacroH2A1 shRNA Plasmid (m): sc-149209-SH

BACKGROUND

Eukaryotic histones are water soluble, basic nuclear proteins that form hetero-octameric nucleosome particles by wrapping 146 base pairs of DNA in a left-handed super-helical turn sequentially to form chromosomal fiber. Two molecules of each of the four core histones (H2A, H2B, H3, and H4) form the octamer. The octamer consists of two H2A-H2B dimers and two H3-H4 dimers, forming two nearly symmetrical halves by tertiary structure. MacroH2A1, also known as H2AFY (H2A histone family, member Y), MacroH2A1.2, MacroH2A1.1, H2A/y, H2AFJ or mH2A1, is a 372 amino acid ubiquitously expressed nuclear histone variant that is enriched in inactive X chromosome chromatin and senescence-associated heterochromatin. Involved in augmentation of signal-regulated transcription, MacroH2A1 exists as three alternatively spliced isoforms, contains one histone H2A domain and a single Macro domain.

REFERENCES

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2. Pehrson, J.R., Costanzi, C. and Dharia, C. 1997. Developmental and tissue expression patterns of histone MacroH2A1 subtypes. *J. Cell. Biochem.* 65: 107-113.
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6. Kustatscher, G., Hothorn, M., Pugieux, C., Scheffzek, K. and Ladurner, A.G. 2005. Splicing regulates NAD metabolite binding to histone MacroH2A. *Nat. Struct. Mol. Biol.* 12: 624-625.

CHROMOSOMAL LOCATION

Genetic locus: H2afy (mouse) mapping to 13 B1.

PRODUCT

MacroH2A1 shRNA Plasmid (m) is a target-specific lentiviral vector plasmid encoding a 19-25 nt (plus hairpin) shRNA designed to knock down gene expression. Each vial contains 20 µg of lyophilized shRNA plasmid DNA. Suitable for up to 20 transfections. Also see MacroH2A1 siRNA (m): sc-149209 and MacroH2A1 shRNA (m) Lentiviral Particles: sc-149209-V as alternate gene silencing products.

PROTOCOLS

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

APPLICATIONS

MacroH2A1 shRNA Plasmid (m) is recommended for the inhibition of MacroH2A1 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor MacroH2A1 gene expression knockdown using RT-PCR Primer: MacroH2A1 (m)-PR: sc-149209-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

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.

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.