



MALT1 shRNA Plasmid (h): sc-35845-SH

BACKGROUND

Mucosa associated lymphoid tissue lymphoma translocation gene 1 (MALT1) is found in extranodal low-grade B cell lymphomas. MALT1 encodes two Ig-like C2-type domains and fuses with an API2 gene, which is highly expressed in adult lymphoid tissue. The translocation of this MALT1 gene, which maps to human chromosome 18q21.32, and the apoptosis-inhibiting API2 gene results in an increased development of MALT lymphomas and apoptosis inhibition. Sites at which this API2-MALT1 (11;18)(q21;q21) translocation commonly occurs are within human lung and kidney tissue. MALT lymphoma expresses nuclear Bcl10, which mediates the oligomerization and activation of a MALT1 caspase-like domain. The MALT1-API2 fusion protein activates NFκB and creates a signaling pathway, which is influenced by this Bcl10-MALT1 complex. MALT1 mRNA is found in pre-B cells, mature B cells and plasma cells.

REFERENCES

1. Akagi, T., et al. 1999. A novel gene, MALT1 at 18q21, is involved in t(11;18)(q21;q21) found in low-grade B cell lymphoma of mucosa associated lymphoid tissue. *Oncogene* 18: 5785-5794.
2. Dierlamm, J., et al. 1999. The apoptosis inhibitor gene API2 and a novel 18q gene, MLT, are recurrently rearranged in the t(11;18)(q21;q21) associated with mucosa associated lymphoid tissue lymphomas. *Blood* 93: 3601-3609.
3. Uren, A.G., et al. 2000. Identification of paracaspases and metacaspases: two ancient families of caspase-like proteins, one of which plays a key role in MALT lymphoma. *Mol. Cell* 6: 961-967.
4. Stoffel, A., et al. 2001. The API2/MALT1 fusion product may lead to germinal center B cell lymphomas by suppression of apoptosis. *Hum. Hered.* 51: 1-7.
5. Liu, H., et al. 2001. T(11;18)(q21;q21) is associated with advanced mucosa associated lymphoid tissue lymphoma that expresses nuclear BCL10. *Blood* 98: 1182-1187.
6. Lucas, P.C., et al. 2001. Bcl10 and MALT1, independent targets of chromosomal translocation in malt lymphoma, cooperate in a novel NFκB signaling pathway. *J. Biol. Chem.* 276: 19012-19019.
7. Inagaki, H., et al. 2001. API2-MALT1 fusion transcripts involved in mucosa-associated lymphoid tissue lymphoma: multiplex RT-PCR detection using formalin-fixed paraffin-embedded specimens. *Am. J. Pathol.* 158: 699-706.

CHROMOSOMAL LOCATION

Genetic locus: MALT1 (human) mapping to 18q21.32.

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.

PRODUCT

MALT1 shRNA Plasmid (h) is a pool of 3 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 MALT1 siRNA (h): sc-35845 and MALT1 shRNA (h) Lentiviral Particles: sc-35845-V as alternate gene silencing products.

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

MALT1 shRNA Plasmid (h) is recommended for the inhibition of MALT1 expression in human 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

MALT1 (B-12): sc-46677 is recommended as a control antibody for monitoring of MALT1 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-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-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-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-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 MALT1 gene expression knockdown using RT-PCR Primer: MALT1 (h)-PR: sc-35845-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.