SANTA CRUZ BIOTECHNOLOGY, INC.

# ALR siRNA (m): sc-72225

## BACKGROUND

ALR (augmenter of liver regeneration), also called Erv1-like growth factor, hepatopoietin (HPO) or hepatic regenerative stimulation substance (HSS), is a hepatotrophic growth factor and flavin-linked sulfhydryl oxidase expressed in various tissues. ALR exists as a homodimer and belongs to the Erv1/ALR family of proteins. This family can be found in higher and lower eukaryotes. ALR has two forms: a cytosolic form and a nuclear form. The nuclear form regulates the transcriptional activity of AP-1. The cytosolic form plays a role in the biogenesis of Fe/S proteins and contributes to cellular iron homeostasis. In addition, ALR induces the expression of S-adenosylmethionine decarboxylase and ornithine decarboxylase (ODC), which each play an important role in the synthesis of polyamines. Through stimulation of polyamine synthesis, ALR heavily contributes to the regulation of the different stages of liver regeneration.

## REFERENCES


1. Thasler, W.E., et al. 2005. Expression of augmenter of liver regeneration (ALR) in human liver cirrhosis and carcinoma. Histopathology 47: 57-66.
2. Mathews, C.E., et al. 2005. Mechanisms underlying resistance of pancreatic islets from ALR/Lt mice to cytokine-induced destruction. J. Immunol. 175: 1248-1256.
3. Li, Q., et al. 2005. Effects of augmentation of liver regeneration recombinant plasmid on rat hepatic fibrosis. World J. Gastroenterol. 11: 2438-2443.
4. Zhang, L.M., et al. 2005. Effect of naked eukaryotic expression plasmid encoding rat augmenter of liver regeneration on acute hepatic injury and hepatic failure in rats. World J. Gastroenterol. 11: 3680-3685.
5. Tury, A., et al. 2005. Expression of the sulfhydryl oxidase ALR (Augmenter of Liver Regeneration) in adult rat brain. Brain Res. 1048: 87-97.
6. Farrell, S.R., et al. 2005. Augmenter of liver regeneration: a flavin-dependent sulfhydryl oxidase with cytochrome c reductase activity. Biochemistry 44: 1532-1541.
7. Dayoub, R., et al. 2006. Regulation of polyamine synthesis in human hepatocytes by hepatotrophic factor augmenter of liver regeneration. Biochem. Biophys. Res. Commun. 345: 181-187.


## CHROMOSOMAL LOCATION

Genetic locus: Gfer (mouse) mapping to 17 A3.3.

## PRODUCT

ALR 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see ALR shRNA Plasmid (m): sc-72225-SH and ALR shRNA (m) Lentiviral Particles: sc-72225-V as alternate gene silencing products.

For independent verification of ALR (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-72225A, sc-72225B and sc-72225C.

## 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

ALR siRNA (m) is recommended for the inhibition of ALR 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 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.

## GENE EXPRESSION MONITORING

ALR (E-7): sc-365885 is recommended as a control antibody for monitoring of ALR 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 ALR gene expression knockdown using RT-PCR Primer: ALR (m)-PR: sc-72225-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## 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.