SANTA CRUZ BIOTECHNOLOGY, INC.

ERAL1 siRNA (m): sc-144919

BACKGROUND

In *E. coli*, Era is a GTPase that is crucial for cell cycle progression and proper cell division, playing a key role in cellular proliferation. ERAL1 (Era G-protein-like 1), also known as ERA, ERAL1A, HERA-A, HERA-B or CEGA (conserved ERA-like GTPase), is a 437 amino acid human homolog of Era. Functioning as a probable GTP-binding protein, ERAL1 contains the same structural domains as its yeast counterpart, namely a conserved BoxA sequence, a C-terminal KH domain and an N-terminal GTP-binding domain. Due to the high level of structural similarity with Era, ERAL1 may participate in cell cycle events, including cellular proliferation and cell division. ERAL1 contains one KH type-2 domain and is expressed as two isoforms, designated HERA-A and HERA-B, which are produced due to alternative splicing events.

REFERENCES

1. Gollop, N., et al. 1991. A GTP-binding protein (Era) has an essential role in growth rate and cell cycle control in *Escherichia coli*. J. Bacteriol. 173: 2265-2270.
2. Sayed, A., et al. 1999. Era, an essential *Escherichia coli* small G-protein, binds to the 30S ribosomal subunit. Biochem. Biophys. Res. Commun. 264: 51-54.
3. Chen, X., et al. 1999. Purification, characterization and crystallization of ERA, an essential GTPase from *Escherichia coli*. FEBS Lett. 445: 425-430.
4. Zhao, G., et al. 1999. Biochemical and molecular analyses of the C-terminal domain of Era GTPase from *Streptococcus pneumoniae*. Microbiology 145: 791-800.
5. Britton, R.A., et al. 2000. Isolation and preliminary characterization of the human and mouse homologues of the bacterial cell cycle gene era. Genomics 67: 78-82.
6. Meier, T.I., et al. 2000. Era GTPase of *Escherichia coli*: binding to 16S rRNA and modulation of GTPase activity by RNA and carbohydrates. Microbiology 146: 1071-1083.
7. Akiyama, T., et al. 2001. Mammalian homologue of *E. coli* Ras-like GTPase (ERA) is a possible apoptosis regulator with RNA binding activity. Genes Cells 6: 987-1001.

CHROMOSOMAL LOCATION

Genetic locus: Eral1 (mouse) mapping to 11 B5.

PRODUCT

ERAL1 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 ERAL1 shRNA Plasmid (m): sc-144919-SH and ERAL1 shRNA (m) Lentiviral Particles: sc-144919-V as alternate gene silencing products.

For independent verification of ERAL1 (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-144919A, sc-144919B and sc-144919C.

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

ERAL1 siRNA (m) is recommended for the inhibition of ERAL1 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor ERAL1 gene expression knockdown using RT-PCR Primer: ERAL1 (m)-PR: sc-144919-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.