SANTA CRUZ BIOTECHNOLOGY, INC.

# TIEG2 siRNA (h): sc-38546

## BACKGROUND

Originally isolated from osteoblastic cells, the TGFβ-inducible early gene 1 (TIEG1) is a Krüppel-like zinc finger transcription factor that regulates cellular growth and differentiation. TIEG1 is regulated as an early response gene by TGFβ1. It is expressed in both acinar and ductular epithelial cells from exocrine pancreas and may serve as an early response gene in pancreatic cells, and overexpression of TIEG1 in TGFβ-sensitive epithelial cells induces apoptosis. TIEG1 is expressed at high levels in PBLs, spleen and colon, and at lower levels in thymus, small intestine, ovary, prostate and skeletal muscle. The nuclear TIEG2 protein, which shares significant homology with TIEG1, was originally isolated from globin-expressing human fetal erythroid cells. TIEG2 is expressed in fetal liver, and overexpression of TIEG2 in cultured epithelial cells inhibits cellular proliferation. TIEG2 expression is upregulated by TGFβ1 and serum deprivation.

## REFERENCES


1. Asano, H., et al. 1999. FKLF, a novel Krüppel-like factor that activates human embryonic and fetal β-like globin genes. Mol. Cell. Biol. 19: 3571-3579.
2. Ellenrieder, V., et al. 2002. Signaling disrupts mSin3A binding to the Mad1-like Sin3-interacting domain of TIEG2, an Sp1-like repressor. EMBO J. 21: 2451-2460.
3. Ou, X.M., et al. 2004. Dual functions of transcription factors, transforming growth factor β-inducible early gene (TIEG)2 and Sp3, are mediated by CACCC element and Sp1 sites of human monoamine oxidase (MAO) B gene. J. Biol. Chem. 279: 21021-21028.
4. Blau, C.A., et al. 2005. γ-globin gene expression in chemical inducer of dimerization (CID)-dependent multipotential cells established from human β-globin locus yeast artificial chromosome (β-YAC) transgenic mice. J. Biol. Chem. 280: 36642-36647.
5. Zhang, P., et al. 2005. A functional screen for Krüppel-like factors that regulate the human γ-globin gene through the CACCC promoter element. Blood Cells Mol. Dis. 35: 227-235.
6. Narayan, A.D., et al. 2005. The effect of hypoxia and stem cell source on haemoglobin switching. Br. J. Haematol. 128: 562-570.


## CHROMOSOMAL LOCATION

Genetic locus: KLF11 (human) mapping to 2p25.1.

## PRODUCT

TIEG2 siRNA (h) 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 TIEG2 shRNA Plasmid (h): sc-38546-SH and TIEG2 shRNA (h) Lentiviral Particles: sc-38546-V as alternate gene silencing products.

For independent verification of TIEG2 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-38546A, sc-38546B and sc-38546C.

## 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

TIEG2 siRNA (h) is recommended for the inhibition of TIEG2 expression in human 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 TIEG2 gene expression knockdown using RT-PCR Primer: TIEG2 (h)-PR: sc-38546-PR (20 µl, 524 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## SELECT PRODUCT CITATIONS


1. Ou, X.M., et al. 2009. Glyceraldehyde-3-phosphate dehydrogenase-monoamine oxidase B-mediated cell death-induced by ethanol is prevented by Rasagiline and 1-R-Aminoindan. Neurotox. Res. 16: 148-159.
2. Grunewald, M., et al. 2012. Mechanistic role for a novel glucocorticoid-KLF11 (TIEG2) protein pathway in stress-induced monoamine oxidase A expression. J. Biol. Chem. 287: 24195-24206.
3. Leduc, C., et al. 2016. TGF-β-induced early gene-1 overexpression promotes oxidative stress protection and Actin cytoskeleton rearrangement in human skin fibroblasts. Biochim. Biophys. Acta 1860: 1071-1078.


## 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.