# Lfc (h2): 293T Lysate: sc-170219



The Power to Question

## **BACKGROUND**

Guanine nucleotide exchange factors (GEFs) regulate the activity of the small GTP-binding proteins of the Ras superfamily. The Ras family of proteins participate in a diverse array of functions, including signal transduction, cytoskeleton dynamics and intracellular trafficking. Ras proteins cycle between a biologically inactive GDP-bound state and an active GTP-bound state. GEFs catalyze the release of GDP from inactive Ras proteins to enable GTP binding. Lfc, also designated Rho/Rac guanine nucleotide exchange factor 2, lymphoid blast crisis-like 1, ARHGEF2, GEF-H1, KIAA0651 and LFP40, is an 894 amino acid GEF for RhoA, a member of the Ras family that regulates the Actin cytoskeleton during the formation of stress fibers. Lfc directly interacts with cingulin, a junctional adapter that inhibits RhoA, thus preventing phorbol-12-myristate-13-acetate-induced contraction and apoptosis. Mutations in the p53 gene transcriptionally activate Lfc, thereby increasing tumor cell proliferation.

# **REFERENCES**

- Krendel, M., Zenke, F.T. and Bokoch, G.M. 2002. Nucleotide exchange factor GEF-H1 mediates cross-talk between microtubules and the Actin cytoskeleton. Nat. Cell Biol. 4: 294-301.
- 2. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 607560. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
- 3. Brecht, M., Steenvoorden, A.C., Collard, J.G., Luf, S., Erz, D., Bartram, C.R. and Janssen, J.W. 2004. Activation of GEF-H1, a guanine nucleotide exchange factor for RhoA, by DNA transfection. Int. J. Cancer 113: 533-540.
- Zenke, F.T., Krendel, M., DerMardirossian, C., King, C.C., Bohl, B.P. and Bokoch, G.M. 2004. p21-activated kinase 1 phosphorylates and regulates 14-3-3 binding to GEF-H1, a microtubule-localized Rho exchange factor. J. Biol. Chem. 279: 18392-18400.
- 5. Aijaz, S., D'Atri, F., Citi, S., Balda, M.S. and Matter, K. 2005. Binding of GEF-H1 to the tight junction-associated adaptor cingulin results in inhibition of Rho signaling and  $G_1/S$  phase transition. Dev. Cell 8: 777-786.
- Callow, M.G., Zozulya, S., Gishizky, M.L., Jallal, B. and Smeal, T. 2005.
  PAK4 mediates morphological changes through the regulation of GEF-H1.
  J. Cell Sci. 118: 1861-1872.
- Birukova, A.A., Adyshev, D., Gorshkov, B., Bokoch, G.M., Birukov, K.G. and Verin, A.D. 2006. GEF-H1 is involved in agonist-induced human pulmonary endothelial barrier dysfunction. Am. J. Physiol. Lung Cell. Mol. Physiol. 290: L540-L548.
- Chang, Z.F. and Lee, H.H. 2006. Rho A signaling in phorbol ester-induced apoptosis. J. Biomed. Sci. 13: 173-180.

## CHROMOSOMAL LOCATION

Genetic locus: ARHGEF2 (human) mapping to 1q22.

# **PRODUCT**

Lfc (h2): 293T Lysate represents a lysate of human Lfc transfected 293T cells and is provided as 100  $\mu g$  protein in 200  $\mu l$  SDS-PAGE buffer.

#### **APPLICATIONS**

Lfc (h2): 293T Lysate is suitable as a Western Blotting positive control for human reactive Lfc antibodies. Recommended use: 10-20 µl per lane.

Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

### **STORAGE**

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

### **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.

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