

# Lfc (Y-20): sc-49684

## 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.
- 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.
- 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<sub>1</sub>/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: 9: 1861-1872.

## CHROMOSOMAL LOCATION

Genetic locus: ARHGEF2 (human) mapping to 1q22; Arhgef2 (mouse) mapping to 3 F1.

## SOURCE

Lfc (Y-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Lfc of human origin.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-49684 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

Lfc (Y-20) is recommended for detection of Lfc of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Lfc (Y-20) is also recommended for detection of Lfc in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for Lfc siRNA (h): sc-41723, Lfc siRNA (m): sc-41724, Lfc shRNA Plasmid (h): sc-41723-SH, Lfc shRNA Plasmid (m): sc-41724-SH, Lfc shRNA (h) Lentiviral Particles: sc-41723-V and Lfc shRNA (m) Lentiviral Particles: sc-41724-V.

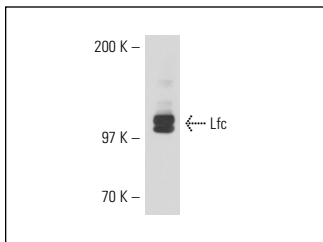
Molecular Weight of Lfc: 100 kDa.

Positive Controls: Lfc (h): 293 Lysate: sc-112758, MES-SA/Dx5 cell lysate: sc-2284 or PC-3 cell lysate: sc-2220.

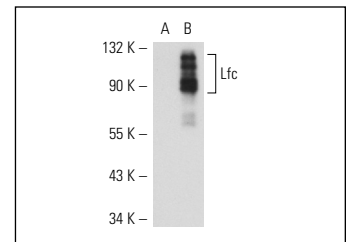
## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## DATA



Lfc (Y-20): sc-49684. Western blot analysis of Lfc expression in NIH/3T3 whole cell lysate



Lfc (Y-20): sc-49684. Western blot analysis of Lfc expression in non-transfected: sc-110760 (A) and human Lfc transfected: sc-112758 (B) 293 whole cell lysates.

## STORAGE

Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.