

## RIG-I (N-14): sc-48932

### BACKGROUND

The innate immune system senses viral infection by recognizing many different viral components and triggering specific antiviral responses. Intracellular double-stranded RNA (dsRNA) is a major sign of replication for many viruses. Retinoic acid inducible gene I (RIG-I) is a 925 amino acid, interferon-inducible cellular DExD/H box RNA helicase that activates type I interferon (IFN), an important effector of the innate immune system that is sensitive to these dsRNA viruses. dsRNA is normally present in very low quantities in cells, so when a virus is present, the elevated levels of dsRNA act as a sign telling RIG-I to activate the production of IFN. RIG-I does this by using its helicase domain to bind to viral dsRNA, thus transmitting the activation signal for IFN through I $\kappa$ B kinase-related kinases and inducing IFN expression. RIG-I is expressed in the cytoplasm of fibroblasts and conventional dendritic cells and can distinguish between many different RNA viruses.

### REFERENCES

1. Sumpter, R., et al. 2005. Regulating intracellular antiviral defense and permissiveness to hepatitis C virus RNA replication through a cellular RNA helicase, RIG-I. *J. Virol.* 79: 2689-2699.
2. Breiman, A., et al. 2005. Inhibition of RIG-I-dependent signaling to the interferon pathway during hepatitis C virus expression and restoration of signaling by IKK $\epsilon$ . *J. Virol.* 79: 3969-3978.
3. Fensterl, V., et al. 2005. Hepatitis A virus suppresses RIG-I-mediated IRF-3 activation to block induction of  $\beta$  interferon. *J. Virol.* 79: 10968-10977.
4. Kato, H., et al. 2005. Cell type-specific involvement of RIG-I in antiviral response. *Immunity* 23: 19-28.
5. Heim, M.H. 2005. RIG-I: an essential regulator of virus-induced interferon production. *J. Hepatol.* 42: 431-433.

### CHROMOSOMAL LOCATION

Genetic locus: DDX58 (human) mapping to 9p21.1; Ddx58 (mouse) mapping to 4 A5.

### SOURCE

RIG-I (N-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of RIG-I of human origin.

### PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-48932 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

### 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.

### APPLICATIONS

RIG-I (N-14) is recommended for detection of RIG-I of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

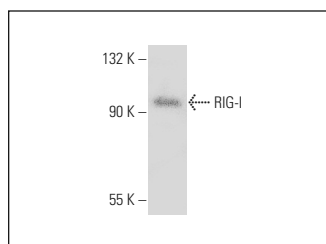
RIG-I (N-14) is also recommended for detection of RIG-I in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for RIG-I siRNA (h): sc-61480, RIG-I siRNA (m): sc-61481, RIG-I shRNA Plasmid (h): sc-61480-SH, RIG-I shRNA Plasmid (m): sc-61481-SH, RIG-I shRNA (h) Lentiviral Particles: sc-61480-V and RIG-I shRNA (m) Lentiviral Particles: sc-61481-V.

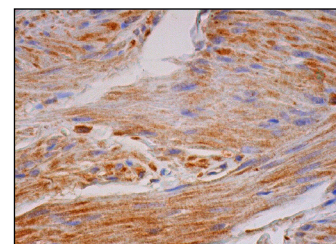
Molecular Weight of RIG-I: 101 kDa.

Positive Controls: SK-MEL-28 cell lysate: sc-2236 or HUV-EC-C whole cell lysate: sc-364180.

### DATA



RIG-I (N-14): sc-48932. Western blot analysis of RIG-I expression in HUV-EC-C whole cell lysate.



RIG-I (N-14): sc-48932. Immunoperoxidase staining of formalin fixed, paraffin-embedded human smooth muscle tissue showing cytoplasmic staining of smooth muscle cells.

### SELECT PRODUCT CITATIONS

1. Fan, L., et al. 2010. Z proteins of New World arenaviruses bind RIG-I and interfere with type I interferon induction. *J. Virol.* 84: 1785-1791.
2. Li, D., et al. 2013. Hemoglobin subunit  $\beta$  interacts with the capsid protein and antagonizes the growth of classical swine fever virus. *J. Virol.* 87: 5707-5717.

### PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.



Try **RIG-I (D-12): sc-376845**, our highly recommended monoclonal alternative to RIG-I (N-14).