

RIG-I (E-5): sc-376882

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 κ 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

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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 ϵ . *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 β 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.
6. Kato, H., et al. 2006. Cell type specific involvement of RIG-I in antiviral responses. *Nippon Rinsho* 64: 1244-1247.
7. Paz, S., et al. 2006. Induction of IRF-3 and IRF-7 phosphorylation following activation of the RIG-I pathway. *Cell. Mol. Biol.* 52: 17-28.
8. Samanta, M., et al. 2006. EB virus-encoded RNAs are recognized by RIG-I and activate signaling to induce type I IFN. *EMBO J.* 25: 4207-4214.

CHROMOSOMAL LOCATION

Genetic locus: DDX58 (human) mapping to 9p21.1.

SOURCE

RIG-I (E-5) is a mouse monoclonal antibody raised against amino acids 1-281 mapping at the N-terminus of RIG-I of human origin.

PRODUCT

Each vial contains 200 μ g IgG₁ in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

RESEARCH USE

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

APPLICATIONS

RIG-I (E-5) is recommended for detection of RIG-I of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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).

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

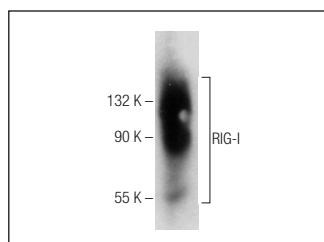
Molecular Weight of RIG-I: 101 kDa.

Positive Controls: T24 cell lysate: sc-2292 or SK-MEL-28 cell lysate: sc-2236.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:32,000) or Cruz Marker™ compatible goat anti-mouse IgG-HRP: sc-2031 (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 goat anti-mouse IgG-FITC: sc-2010 (dilution range: 1:100-1:400) or goat anti-mouse IgG-TR: sc-2781 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



RIG-I (E-5): sc-376882. Western blot analysis of RIG-I expression in T24 whole cell lysate.

STORAGE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.