SANTA CRUZ BIOTECHNOLOGY, INC.

RIG-I (C-15): sc-48929

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 IκB 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.

CHROMOSOMAL LOCATION

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

SOURCE

RIG-I (C-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of RIG-I 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-48929 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

RESEARCH USE

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

APPLICATIONS

RIG-I (C-15) 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 µg per 100-500 µg 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 (C-15) is also recommended for detection of RIG-I in additional species, including equine and bovine.

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.

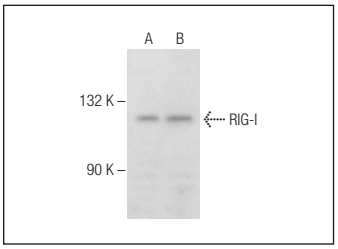
Molecular Weight of RIG-I: 101 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, THP-1 cell lysate: sc-2238 or SK-MEL-28 cell lysate: sc-2236.

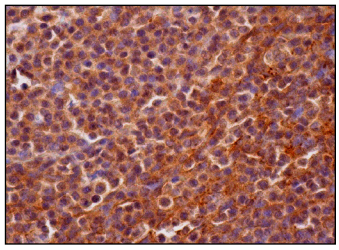
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use 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. 4) Immunohistochemistry: use ImmunoCruz™: sc-2053 or ABC: sc-2023 goat IgG Staining Systems.

DATA



RIG-I (C-15): sc-48929. Western blot analysis of RIG-I expression in Jurkat (**A**) and THP-1 (**B**) whole cell lysates.



RIG-I (C-15): sc-48929. Immunoperoxidase staining of formalin fixed, paraffin-embedded human tonsil tissue showing cytoplasmic staining of cells in germinal centers and cells in non-germinal centers.

SELECT PRODUCT CITATIONS

1. Kalali, B.N., et al. 2008. Double-stranded RNA induces an antiviral defense status in epidermal keratinocytes through TLR3-, PKR-, and MDA5/RIG-I-mediated differential signaling. J. Immunol. 181: 2694-2704.
2. Lu, C., et al. 2010. The structural basis of 5' triphosphate double-stranded RNA recognition by RIG-I C-terminal domain. Structure 18: 1032-1043.
3. Kocic, G., et al. 2011. Circulating ribonucleic acids and metabolic stress parameters may reflect progression of autoimmune or inflammatory conditions in juvenile type 1 diabetes. ScientificWorldJournal 11: 1496-1508.
4. Klimmeck, D., et al. 2012. Proteomic cornerstones of hematopoietic stem cell differentiation: distinct signatures of multipotent progenitors and myeloid committed cells. Mol. Cell. Proteomics 11: 286-302.

STORAGE

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

MONOS Satisfaction Guaranteed

Try **RIG-I (D-12): sc-376845**, our highly recommended monoclonal alternative to RIG-I (C-15).