

# RIG-I (D-12): sc-376845

## 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.

## CHROMOSOMAL LOCATION

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

## SOURCE

RIG-I (D-12) is a mouse monoclonal antibody raised against amino acids 5-300 mapping at the N-terminus of RIG-I of mouse origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG $_1$  kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

RIG-I (D-12) is available conjugated to agarose (sc-376845 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-376845 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376845 PE), fluorescein (sc-376845 FITC), Alexa Fluor<sup>®</sup> 488 (sc-376845 AF488), Alexa Fluor<sup>®</sup> 546 (sc-376845 AF546), Alexa Fluor<sup>®</sup> 594 (sc-376845 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-376845 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-376845 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-376845 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

## APPLICATIONS

RIG-I (D-12) is recommended for detection of RIG-I of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

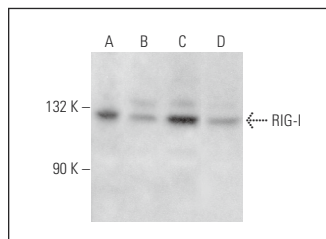
Suitable for use as control antibody for RIG-I siRNA (h): sc-61480, RIG-I siRNA (m): sc-61481, RIG-I siRNA (r): sc-270587, RIG-I shRNA Plasmid (h): sc-61480-SH, RIG-I shRNA Plasmid (m): sc-61481-SH, RIG-I shRNA Plasmid (r): sc-270587-SH, RIG-I shRNA (h) Lentiviral Particles: sc-61480-V, RIG-I shRNA (m) Lentiviral Particles: sc-61481-V and RIG-I shRNA (r) Lentiviral Particles: sc-270587-V.

Molecular Weight of RIG-I: 101 kDa.

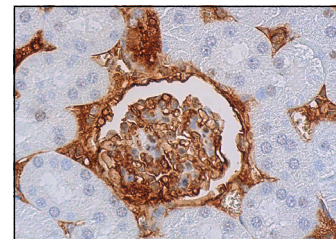
## STORAGE

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

## DATA



RIG-I (D-12): sc-376845. Western blot analysis of RIG-I expression in Jurkat (A), THP-1 (B), HUV-EC-C (C) and A-431 (D) whole cell lysates.



RIG-I (D-12): sc-376845. Immunoperoxidase staining of formalin fixed, paraffin-embedded mouse kidney tissue showing cytoplasmic and perinuclear staining of cells in glomeruli and cytoplasmic staining of endothelial cells.

## SELECT PRODUCT CITATIONS

- Sheng, W., et al. 2018. LSD1 ablation stimulates anti-tumor immunity and enables checkpoint blockade. *Cell* 174: 549-563.e19.
- Ren, X., et al. 2019. RIG-I selectively discriminates against 5'-monophosphate RNA. *Cell Rep.* 26: 2019-2027.e4.
- Chen, S.T., et al. 2019. NLRP12 regulates anti-viral RIG-I activation via interaction with TRIM25. *Cell Host Microbe* 25: 602-616.e7.
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- Di Marco, T., et al. 2020. COPZ1 depletion in thyroid tumor cells triggers type I IFN response and immunogenic cell death. *Cancer Lett.* 476: 106-119.
- Pozzi, B., et al. 2020. Dengue virus targets RBM10 deregulating host cell splicing and innate immune response. *Nucleic Acids Res.* 48: 6824-6838.
- Seo, J.H., et al. 2020. MTFMT deficiency correlates with reduced mitochondrial integrity and enhanced host susceptibility to intracellular infection. *Sci. Rep.* 10: 11183.
- Zhang, X., et al. 2020. Foot-and-mouth disease virus 3B protein interacts with pattern recognition receptor RIG-I to block RIG-I-mediated immune signaling and inhibit host antiviral response. *J. Immunol.* 205: 2207-2221.
- Hardy, S., et al. 2020. Classical swine fever virus Npro antagonises IRF3 to prevent IFN-independent TLR3 and RIG-I-mediated apoptosis. *J. Virol.* 95: e01136-20.

## RESEARCH USE

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

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