

## MDA5 Antibody

*MDA5 (CT): Melanoma differentiation-associated protein 5, Interferon-induced with helicase C domain protein 1, IFIH1*

**CATALOG No.:**4037

### BACKGROUND:

The innate immune system detects viral infection by recognizing various viral components and triggers antiviral responses (1,2). Like the toll-like receptor 3 (TLR3), the melanoma differentiation-associated protein 5 (MDA5) recognizes double-stranded (ds) RNA, a molecular pattern associated with viral infection. MDA5, a member of the DEAD/DEAH-box RNA helicase family (3), consists of an amino-terminal caspase recruitment domain (CARD) and a carboxyl-terminal RNA helicase domain similar to that of the related protein RIG-1. When stimulated by dsRNA, MDA5 recruits the adaptor protein VISA and ultimately causes the activation of IRF-3 and NF- $\kappa$ B (4). MDA5 and RIG-1 recognize different types of dsRNA, with MDA5 recognizing poly (I:C). MDA5-null mice were highly susceptible to infection with picornaviruses, which possess such sequences, demonstrating the importance of MDA5 in innate immunity (5).

### SOURCE:

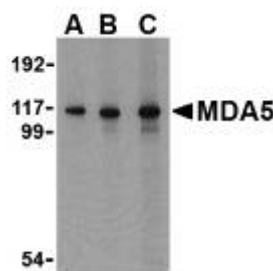
Rabbit polyclonal MDA5 antibody was raised against a 16 amino acid peptide from near the carboxy terminus of human MDA5 (GenBank accession no. NP\_071451).

### APPLICATION:

MDA5 antibody can be used for detection of MDA5 by Western blot at 1 – 2  $\mu$ g/ml. (Optimal dilution should be determined by user.) Daudi cell lysate can be used as positive control. MDA5 antibody is human and mouse reactive. **For research use only.**

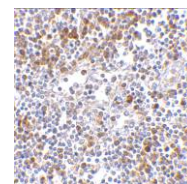
### STORAGE:

MDA5 antibody is supplied as immunoaffinity purified IgG in PBS containing 0.02% sodium azide. Store at 4°C, stable for one year.



Western blot analysis of MDA5 in Daudi cell lysate with MDA5 antibody at (A) 1, (B) 2 and (C) 4  $\mu$ g/ml.

Immunohistochemistry of MDA5 in human lymph node tissue with MDA5 antibody at 5  $\mu$ g/ml.



### RELATED PRODUCTS:

Blocking Peptide, Catalog No. **4037P**.  
Daudi Cell Lysate, Catalog No. **1224**.  
MDA5 Antibody (IN), Catalog No. **4039**.  
TLR3 Antibody (CT), Catalog No. **3643**.  
RIG-1 Antibody, Catalog No. **3953**.  
VISA Antibody (NT), Catalog No. **4053**.  
IRF-3 Antibody (CT), Catalog No. **3397**.

### REFERENCES:

1. Akira S, Uematsu S, and Takeuchi O. Pathogen recognition and innate immunity. *Cell* 2006; 124:783-801.
2. Hiscott J, Nguyen T-LA, Arguello M, et al. Manipulation of the nuclear factor- $\kappa$ B pathway and the innate immune response by viruses. *Oncogene* 2006; 25:6844-67.
3. Kang D, Gopalrishnan RV, Lin L, et al. Expression analysis and genomic characterization of human melanoma differentiation associated gene-5, mda-5: a novel type I interferon-responsive apoptosis-inducing gene. *Oncogene* 2004; 23:1789-800.
4. Andrejeva J, Childs KS, Young DF, et al. The V proteins of the paramyxoviruses bind the IFN-inducible RNA helicase, mda-5, and inhibit its activation of the IFN-beta promoter. *Proc. Natl. Acad. Sci. USA* 2004; 101:17264-9.
5. Kato H, Takeuchi O, Sato S, et al. Differential roles of MDA5 and RIG-I helicases in the recognition of RNA viruses. *Nature* 2006; 441:101-5. (08-01D)