

# MDA5 ABfinity™ Recombinant Rabbit Monoclonal Antibody - Purified



**REF** Catalog no. 700360

(See product label for lot information)

**Clone/PAD:** 33H12L34  
**Isotype:** IgG  
**Gene ID:** 64135  
**Protein Acc. No.:** Q9BYX4  
**Qty:** 100 µg  
**Volume:** 200 µl  
**Concentration:** 0.5 mg/ml

## Formulation

PBS + 0.09% azide

## Immunogen

A recombinant protein corresponding to amino acids 883-1025 of Q9BYX4.

## Immunogen sequence

EKKMKTkRNIAKHYNPslITFLCKNCS  
VLACSGEDIHVIEKMHVNMTPFKELYIV  
RENKALQKKCADYQINGEIIICKCGQAWGT  
MMVHKGLDLPLCKIRNFVVVFKNNSTKKQ  
YKKWVELPITFPNLDYSECCLFSDSD

## Reactivity

This antibody reacts with Human MDA5. Based on sequence similarity, reactivity to Rhesus monkey, mouse, rat, swine, and bovine is expected.

## Storage

2-8°C for up to 1 mo, -20°C for long term storage. Avoid repeated freezing and thawing.



## Expiration Date

Expires one year from date of receipt when stored as instructed.

## Validated Applications:

	Species	Test Material	Concentration
Western Blotting	human	293 + MDA5-FLAG	4-6 µg/ml
Immunofluorescence	human	293 + MDA5-FLAG	4-6 µg/ml

## Background

Melanoma differentiation associated gene 5, MDA5, is a pattern recognition receptor (PRR) involved in the recognition of viral dsRNA (1). Along with RIG-I, MDA5 detects viral dsRNA and activates the innate immune response. Both MDA5 and RIG-I are RNA helicases and they perform overlapping as well as distinct roles. RIG-I is activated by dsRNAs without a 5'-triphosphate end and short dsRNAs, whereas MDA5 is activated by long dsRNAs (2). Like RIG-I, MDA5 uses a DExD/H-Box helicase motif to sense viral RNA and an N-terminal caspase recruitment domain (CARD) to transmit the signal (1). Once activated, both proteins signal through IPS-1 activating transcription factors NF-κB and IRF-3 (3) and ultimately activating apoptosis, cytokine signaling, and inflammation (4). RIG-I is essential for signaling by influenza A, influenza B, human respiratory syncytial virus (4), paromyxoviruses, Japanese encephalitis virus (5). MDA5 is essential for signaling by picornavirus (5). Both RIG-I and MDA5 are responsible for signaling by West Nile virus (6).

## References

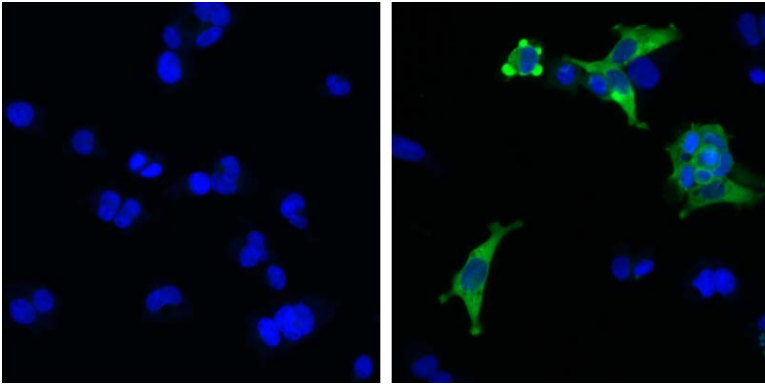
1. Yoneyama, M. et al. (2005) Shared and unique functions of the DExD/H-box helicases RIG-I, MDA5, and LGP2 in antiviral innate immunity. *J. Immunol.* 2851-2858.
2. Kato, H. et al. (2008) Length-dependent recognition of double-stranded ribonucleic acids by retinoic acid-inducible gene-I and melanoma differentiation-associated gene 5. *J. Exp. Med.* 205: 1601-1610.
3. Yoneyama, M et al (2004) The RNA helicase RIG-I has an essential function in double-stranded RNA-induced innate antiviral responses. *Nat. Immunol.* 5: 730-736.
4. Loo, Y-M. et al. (2008) Distinct RIG-I and MDA5 signaling by RNA viruses in innate immunity. *J. Virol.* 82: 335-345.
5. Kato, H. et al. (2006) Differential roles of MDA5 and RIG-I helicases in the recognition of RNA viruses. *Nature* 441: 101-105.
6. Fredericksen, B.L. (2008) Establishment and maintenance of the innate antiviral response to West Nile virus involves both RIG-I and MDA5 signaling through IPS-1. *J. Virol.* 82:609-616.

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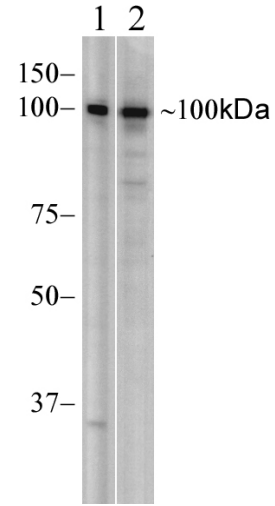
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**Immunocytochemistry of MDA5-transfected 293 cells labeled with rabbit anti-MDA5 (Cat. No. 700360).**

Rabbit anti-MDA5 (5 µg/ml) was used to label MDA5 in 293 cells transfected with (right) or without (left) MDA5. Alexa Fluor® 488 goat anti-rabbit (Cat. No. A11008) at 1:1000 was used as secondary antibody. Hoescht staining of nucleus (blue), AF488 signal (MDA5, green).



**Western blot of 293 lysates labeled with rabbit anti-MDA5 (Cat. No. 700360).**

Rabbit anti-MDA5 (5 µg/ml) was used to label FLAG-tagged MDA5 in transfected 293 lysates (lane 2). Anti-FLAG was used as a control (lane 1).

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