

LGP2 (D3I3L) Rabbit mAb

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For Research Use Only. Not for Use in Diagnostic Procedures.

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W	H	Endogenous	77	Rabbit IgG	#Q96C10	79132

Product Usage Information**Application**

Western Blotting

Dilution

1:1000

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. Do not aliquot the antibody.

Specificity/Sensitivity

LGP2 (D3I3L) Rabbit mAb recognizes endogenous levels of total LGP2 protein.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Val478 of human LGP2 protein.

Background

Antiviral innate immunity depends on the combination of parallel pathways triggered by virus detecting proteins in the Toll-like receptor (TLR) family and RNA helicases, such as Rig-I (retinoic acid-inducible gene I) and MDA-5 (melanoma differentiation-associated antigen 5), which promote the transcription of type I interferons (IFN) and antiviral enzymes (1-3). TLRs and helicase proteins contain sites that recognize the molecular patterns of different virus types, including DNA, single-stranded RNA (ssRNA), double-stranded RNA (dsRNA), and glycoproteins. These antiviral proteins are found in different cell compartments; TLRs (i.e. TLR3, TLR7, TLR8, and TLR9) are expressed on endosomal membranes and helicases are localized to the cytoplasm. Rig-I expression is induced by retinoic acid, LPS, IFN, and viral infection (4,5). Both Rig-I and MDA-5 share a DExD/H-box helicase domain that detects viral dsRNA and two amino-terminal caspase recruitment domains (CARD) that are required for triggering downstream signaling (4-7). Rig-I binds both dsRNA and viral ssRNA that contains a 5'-triphosphate end not seen in host RNA (8,9). Though structurally related, Rig-I and MDA-5 detect a distinct set of viruses (10,11). The CARD domain of the helicases, which is sufficient to generate signaling and IFN production, is recruited to the CARD domain of the MAVS/VISA/Cardif/IPS-1 mitochondrial protein, which triggers activation of NF-κB, TBK1/IKKε, and IRF-3/IRF-7 (12-15). The DExD/H-box family helicase laboratory of genetics and physiology 2 (LGP2, DHX58) is a Rig-I-like receptor (RLR) that lacks the CARD domain and associated signaling ability (6,16). Research studies demonstrate that LGP2 helicase binds dsRNA and inhibits the Rig-I-like receptors Rig-I and MDA-5. Expression of LGP2 is induced by interferon, dsRNA, and viral infection (17). Studies using LGP2-deficient animals demonstrate a complicated interaction between LGP2 and the other RLRs that involves both positive and negative effects on interferon regulation (18-20). In addition, LGP2 may regulate apoptosis, contribute to CD8+ T cell survival, and protect cancer cells from ionizing radiation (21,22).

Background References

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Species Reactivity	Species reactivity is determined by testing in at least one approved application (e.g., western blot).
Western Blot Buffer	IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.
Applications Key	W: Western Blotting
Cross-Reactivity Key	H: Human
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