

PRODUCT INFORMATION



RIG-I helicase domain (human, recombinant)

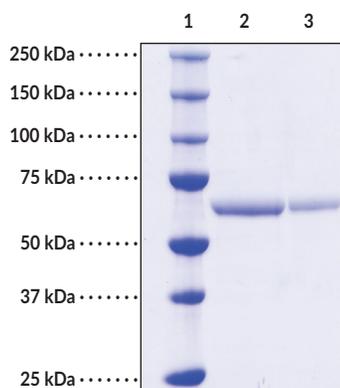
Item No. 25620

Overview and Properties

Synonyms:	DEAD Box Protein 58, Probable ATP-dependent RNA Helicase DDX58, Retinoic Acid-inducible Gene 1 Protein
Source:	Recombinant N-terminal histidine-tagged RIG-I helicase domain purified from <i>E. coli</i>
Amino Acids:	232-794
Uniprot No.:	O95786
Molecular Weight:	66.47 kDa
Storage:	-80°C (as supplied)
Stability:	≥1 year
Purity:	<i>batch specific</i> (≥80% estimated by SDS-PAGE)
Supplied in:	50 mM HEPES, pH 8.0, with 150 mM sodium chloride and 10% glycerol
Protein Concentration:	<i>batch specific</i> mg/ml

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Image



Lane 1: MW Markers
Lane 2: RIG-I helicase domain (4 µg)
Lane 3: RIG-I helicase domain (2 µg)

Representative gel image shown; actual purity may vary between each batch.

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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Description

Retinoic acid-inducible gene I (RIG-I), also known as DDX58, is a cytosolic DExD/H-box RNA helicase and an immune sensing receptor encoded by *DDX58* in humans.¹ It is composed of a C-terminal repressor domain, a central RNA helicase domain, and two N-terminal caspase recruitment domains (CARDs).^{1,2} Following recognition of viral dsRNA by the C-terminal and helicase domains, the helicase domain induces an ATP-dependent conformational change, allowing for interaction of the CARD domains with mitochondrial antiviral-signaling protein (MAVS) and induction of a type I interferon (IFN) response.¹⁻³ A single amino acid substitution of phenylalanine for cysteine at position 268 in the RIG-I helicase domain (RIG-I^{C268F}) leads to enhanced NF- κ B activity and expression of IFN- β in basal and poly (I:C)-stimulated cells.⁴ Overexpression of RIG-I^{C268F} in human trabecular meshwork (HTM) cells induces cell death and is positively correlated with glaucoma, a core symptom in the type I interferonopathy atypical Singleton-Merten syndrome.

References

1. Hartmann, G. Nucleic acid immunity. *Advances in Immunology* **133**, 121-169 (2017).
2. Matsumiya, T. and Stafforini, D.M. Function and regulation of retinoic acid-inducible gene-I. *Crit. Rev. Immunol.* **30(6)**, 489-513 (2010).
3. Takeuchi, O. and Akira, S. Innate immunity to virus infection. *Immunol. Rev.* **277(1)**, 75-86 (2009).
4. Lu, C. and MacDougall, M. RIG-I-like receptor signaling in Singleton-Merten syndrome. *Front. Genet.* **8:118** (2017).

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