

PRODUCT INFORMATION



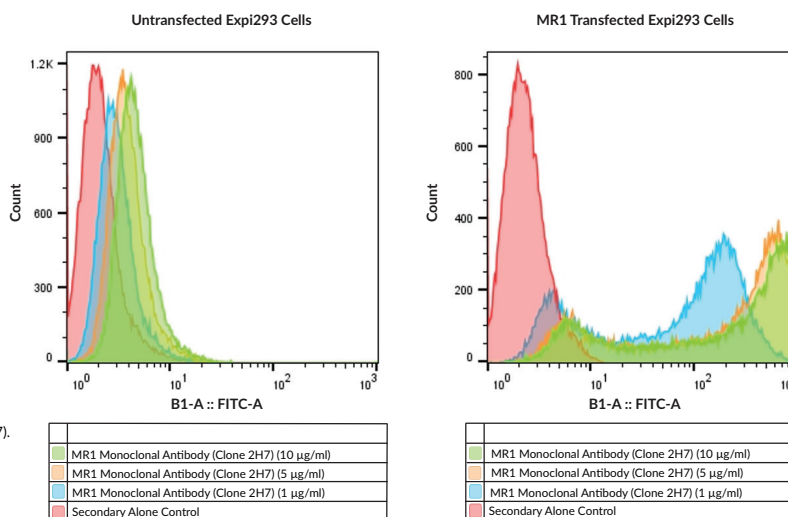
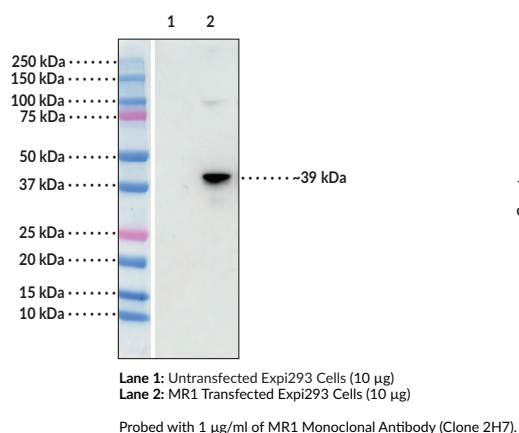
MR1 Monoclonal Antibody (Clone 2H7)

Item No. 34257

Overview and Properties

Contents: This vial contains 100 µg of protein G-affinity purified monoclonal antibody.
Synonyms: Class I Histocompatibility Antigen-like Protein, Major Histocompatibility Complex Class I-related Gene Protein, MHC Class I-related Gene Protein
Immunogen: Recombinant human MR1 (AA 22-292) Protein
Cross Reactivity: (+) MR1
Species Reactivity: (+) Human; other species not tested
Molecular Weight: 39 kDa
Uniprot No.: Q95460
Form: Liquid
Storage: -20°C (as supplied)
Stability: ≥3 years
Storage Buffer: PBS, pH 7.2, with 50% glycerol and 0.02% sodium azide
Clone: 2H7
Host: Mouse
Isotype: IgG1
Applications: ELISA, Flow Cytometry (FC), Immunoprecipitation (mass spec confirmed) (IP), and Western blot (WB); the recommended starting dilution for WB and ELISA is 1:1,000 and 1:100-1:200 for FC. 5-10 µg per test should be used for IP. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

Images



Expi293 cells were fixed with 3.7% formaldehyde and blocked with 1% FBS. Cells were probed with the indicated amounts of MR1 Monoclonal Antibody (Clone 2H7) followed by Cayman's Goat Anti-Mouse (IgG+IgM) FITC (Item No. 10006617).

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

Major histocompatibility complex (MHC) class I-related gene protein (MR1) is a non-polymorphic MHC class Ib antigen-presenting cell surface molecule that is required for T cell receptor-mediated activation of mucosal-associated invariant T (MAIT) cells.^{1,2} It is composed of $\alpha 1$ and $\alpha 2$ domains, which form an antigen-binding pocket, and an $\alpha 3$ domain that interacts with $\beta 2$ -microglobulin.² MR1 mRNA is ubiquitously expressed and, following translation, MR1 protein is localized to the endoplasmic reticulum in a partially folded state. Upon binding of a riboflavin-derived microbial antigen, MR1 undergoes a conformational change and translocates to the cell surface where it induces MAIT cell activation *via* an interaction with the MAIT cell T cell receptor and activates various immunomodulatory effects, including cytokine release, initiation of adaptive immune responses, and promotion of tissue repair.³ Cayman's MR1 Monoclonal Antibody (Clone 2H7) can be used for ELISA, flow cytometry (FC), immunoprecipitation (mass spec confirmed) (IP), and Western blot (WB) applications. The antibody recognizes MR1 at approximately 39 kDa from human samples.

References

1. Lamichhane, R. and Ussher, J.E. Expression and trafficking of MR1. *Immunology* **151**(3), 270-279 (2017).
2. Krovi, S.H. and Gapin, L. Structure and function of the non-classical major histocompatibility complex molecule MR1. *Immunogenetics* **68**(8), 549-559 (2016).
3. McWilliam, H.E.G. and Salio, M. Understanding and modulating the MR1 metabolite antigen presentation pathway. *Mol. Immunol.* **129**, 121-126 (2021).

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