

Technical Data Sheet

R718 Rat Anti-Mouse H-2 Class I

Product Information

Material Number:	751875
Size:	50 µg
Clone:	M1/42
Alternative Name:	H-2 Class I; H2 Class I; Mouse MHC Class I; Mouse MHC-I
Reactivity:	Tested in Development: Mouse
Isotype:	Rat DA, also known as DA/HA IgG2a, κ
Application:	Flow cytometry (Qualified)
Concentration:	0.2 mg/ml
Storage Buffer:	Aqueous buffered solution containing ≤0.09% sodium azide.
Regulatory Status:	RUO

Description

The M1/42 monoclonal antibody (mAb) specifically recognizes intact Histocompatibility-2 Region (H-2) class I antigens (Ags), also known as mouse Major Histocompatibility Complex class I (MHC-I) Ags. This mAb reportedly binds to one or more of the H-2 Ags (H-2K, H-2D, and likely H-2L) that are primarily expressed on most nucleated somatic cells of hematopoietic and nonhematopoietic origin. H-2 class I molecules are comprised of a ~45-50 kDa type I transmembrane heavy chain glycoprotein that is noncovalently linked to ~13 kDa β2-microglobulin (β2-m). The extracellular region of the polymorphic heavy chains is comprised of three globular domains (α1, α2, and α3), followed by a transmembrane region and a cytoplasmic tail. Sequence variations are manifest in regions of the α1 and α2 domains that line the peptide-binding cleft involved in Ag presentation. The M1/42 mAb reportedly binds to H-2 class I Ags from multiple mouse haplotypes including a, b, d, j, k, s, and u. It does not bind to separated H-2 class I heavy chains or β2-m. Cell surface CD8 molecules bind to invariant sites of the H-2 heavy chains and can provide coreceptor signaling for Ag-mediated activation through the T cell receptor. H-2 class I molecules that present self-Ags can lead to self-tolerance of maturing CD8+ T cells due to thymic selection. Alternatively, these molecules can present foreign peptide Ags to mature peripheral CD8+ T cells resulting in cell-mediated immune responses against foreign Ags. H-2 class I Ags also serve as ligands for activating and inhibitory receptors expressed by NK cells and some T cells. The M1/42 antibody is useful for analyzing H-2 class I Ag expression on cells or cell lines. Cells from different experimental systems, eg, stressed cells that have undergone infection or transformation, may express little or no H-2 class I Ag. In contrast, cells undergoing activation or responding to certain factors (eg, interferons) may express upregulated levels of these Ags.

The antibody was conjugated to BD Horizon Red 718, which has been developed exclusively for BD Biosciences as a better alternative to Alexa Fluor® 700. BD Horizon Red 718 can be excited by the red laser (628 – 640 nm) and, with an Em Max around 718 nm, it can be detected using a 730/45 nm filter. Due to similar excitation and emission properties, we do not recommend using R718 in combination with APC-R700 or Alexa Fluor® 700.

Preparation and Storage

Store undiluted at 4°C and protected from prolonged exposure to light. Do not freeze. The monoclonal antibody was purified from tissue culture supernatant or ascites by affinity chromatography. The antibody was conjugated to the dye under optimum conditions that minimize unconjugated dye and antibody.

Recommended Assay Procedure

BD™ CompBeads can be used as surrogates to assess fluorescence spillover (Compensation). When fluorochrome conjugated antibodies are bound to BD CompBeads, they have spectral properties very similar to cells. However, for some fluorochromes there can be small differences in spectral emissions compared to cells, resulting in spillover values that differ when compared to biological controls. It is strongly recommended that when using a reagent for the first time, users compare the spillover on cells and BD CompBead to ensure that BD CompBeads are appropriate for your specific cellular application.

Suggested Companion Products

Catalog Number Name

Size

553141	Purified Rat Anti-Mouse CD16/CD32 (Mouse BD Fc Block™)	0.1 mg
554656	Stain Buffer (FBS)	500 mL
554657	Stain Buffer (BSA)	500 mL
555899	Lysing Buffer	100 mL
566941	R718 Rat IgG2a, κ Isotype Control	50 μ g

Product Notices

1. Researchers should determine the optimal concentration of this reagent for their individual applications.
2. The production process underwent stringent testing and validation to assure that it generates a high-quality conjugate with consistent performance and specific binding activity. However, verification testing has not been performed on all conjugate lots.
3. An isotype control should be used at the same concentration as the antibody of interest.
4. Caution: Sodium azide yields highly toxic hydrazoic acid under acidic conditions. Dilute azide compounds in running water before discarding to avoid accumulation of potentially explosive deposits in plumbing.
5. Alexa Fluor® is a registered trademark of Life Technologies Corporation.
6. Please refer to <http://regdocs.bd.com> to access safety data sheets (SDS).
7. Please refer to www.bdbiosciences.com/us/s/resources for technical protocols.
8. This product is provided under an Agreement between Biotium and BD Biosciences. This product, and only in the amount purchased by buyer, may be used solely for buyer's own internal research, in a manner consistent with the accompanying product literature. No other right to use, sell or otherwise transfer (a) this product, or (b) its components is hereby granted expressly, by implication or by estoppel. This product is for research use only. Diagnostic uses require a separate license from Biotium, Inc. For information on purchasing a license to this product including for purposes other than research, contact Biotium, Inc., 3159 Corporate Place, Hayward, CA 94545, Tel: (510) 265-1027. Fax: (510) 265-1352. Email: btinfo@biotium.com.

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