

## Technical Data Sheet

**R718 Mouse Anti-Human KIR2DL1/S1/S3/S5 (CD158)**

## Product Information

Material Number:	752518
Size:	50 µg
Clone:	HP-MA4
Alternative Name:	KIR2DL1 (CD158a/NKAT-1); KIR2DS1 (CD158h); KIR2DS3 (NKAT-7); KIR2DS5 (CD158g/NKAT-9)
Reactivity:	Tested in Development: Human
Isotype:	Mouse BALB/c IgG2b, 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 HP-MA4 monoclonal antibody specifically recognizes several Killer Cell Immunoglobulin-like Receptors (KIRs) which are also known as CD158 molecules. HP-MA4 recognizes Killer cell immunoglobulin-like receptor 2DL1 (encoded by KIR2DL1; aka, CD158a and NKAT-1), Killer cell immunoglobulin-like receptor 2DS1 (KIR2DS1; CD158h), Killer cell immunoglobulin-like receptor 2DS3 (KIR2DS3; NKAT-7), and Killer cell immunoglobulin-like receptor 2DS5 (KIR2DS5; CD158g, NKAT-9) which are collectively known as KIR2DL1/S1/S3/S5 (CD158). These type I transmembrane glycoproteins are encoded by polymorphic genes and have 2 extracellular Ig-like domains (KIR2D, domains D1 and D2) followed by a transmembrane region and either long (L) or short (S) cytoplasmic domains. Various CD158 molecules are differentially expressed by CD56dim natural killer (NK) cells and some T cells and can regulate their cytotoxic effector functions. Although different KIR gene content varies amongst haplotypes for individuals, certain "framework" genes including KIR3DL3, KIR3DP1, KIR3DL4, and KIR3DL2, are found in all haplotypes. KIR2DL1 has a long cytoplasmic domain with two tyrosine-based inhibitory motifs (ITIM) that enables inhibitory signal transduction by ligand-bound KIR2DL1 leading to reduced cytotoxic effector cell activity. KIR2DS1, KIR2DS3, KIR2DS5 (KIR2DS1/S3/S5) proteins each have a short cytoplasmic tail with a positively charged amino acid in their transmembrane region which allows association with the DAP12 transmembrane protein. DAP12 acts as an activating signal transduction element through its immunoreceptor tyrosine-based activation motifs (ITAMs) in its cytoplasmic domain leading to upregulated cytotoxic effector cell function. Some MHC class I molecules can serve as ligands for CD158 molecules, with HLA-C ligands reported for KIR2DL1, KIR2DS1, and KIR2DS5.

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
564219	Human BD Fc Block™	50 µg
554656	Stain Buffer (FBS)	500 mL
554657	Stain Buffer (BSA)	500 mL
349202	Lysing Solution 10X Concentrate	100 mL
555899	Lysing Buffer	100 mL
566952	R718 Mouse IgG2b, κ Isotype Control	50 µg

## 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 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](http://www.bdbiosciences.com/us/s/resources) for technical protocols.
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## References

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