

Human BD Fc Block™

Blocks non-specific binding of antibodies to Fc receptors

Features

Minimizes non-specific binding of immunoglobulins to Fc receptors

Does not interfere with specific binding or second-step antibodies

Easy to titer recombinant formulation provides consistent results throughout experiments

Safer than human-derived products

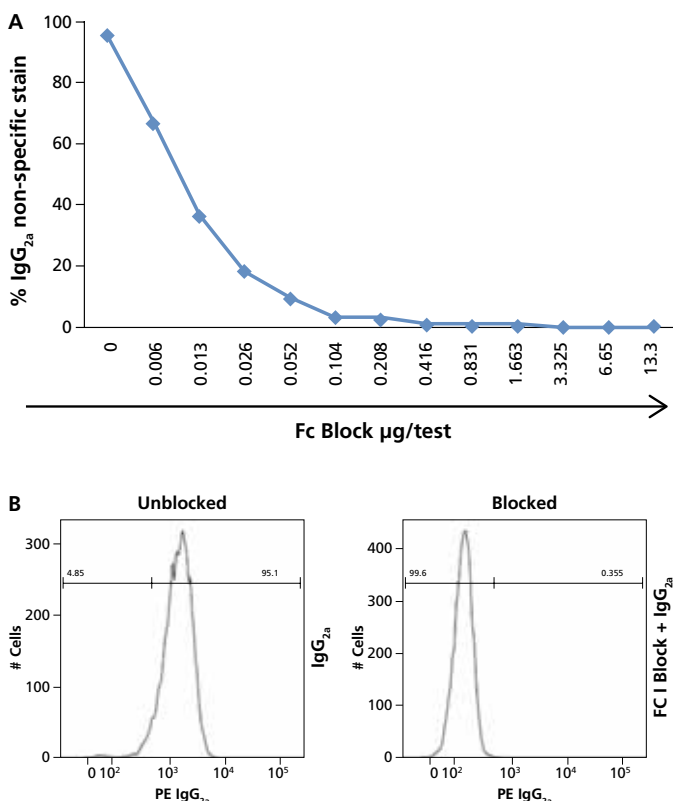


Figure 1. Single-color analysis of the expression of mouse IgG_{2a} (msIgG_{2a}) on THP-1 cells.

THP-1 cells were incubated at room temperature with Human Fc block (Cat. No. 564220) and then stained with mslgG_{2a} PE (Cat. No. 554648). **A.** Data representing mslgG_{2a} PE expression combined with varying levels of Fc block titrations. **B.** Data demonstrating high levels of mslgG_{2a} PE expression in THP-1 cells without Human Fc block due to non-specific binding. THP-1 cells incubated with Human Fc block prior to staining did not show mslgG_{2a} PE expression.

BD Biosciences offers a purified recombinant Fc protein that blocks non-specific binding of Fc receptor expressing cells, such as myeloid and B cells. The 250 μg -size of Human BD Fc Block™ is sufficient for 100 tests at the recommended concentration of 2.5 μg per 1×10^6 cells. However, the optimal concentration of the Fc block is dependent on the cell type and number. Human Fc block should be titrated for optimal results.

Reducing high background and inaccurate results

False-positive (non-specific) results are often observed after immunofluorescence staining of FcR cells due to FcR-mediated Ig Fc binding. Human Fc block inhibits non-specific binding in human samples during flow cytometry. Preventing non-specific binding reduces high background and focuses research on accurate results. Additionally, Fc block can increase the specificity of antibody labeling in extremely rare target cells such as antigen-specific B cells, fetal cells in maternal blood, hematopoietic progenitor cells, or disseminated epithelial tumor cells. While non-specific binding is reduced, second-step antibodies and specific binding sites are not negatively affected by Fc block.

In studies conducted by BD, cells were incubated with varying levels of Human BD Fc block for 10 minutes prior to staining with a single-color antibody. Cells incubated with Fc block before being stained with the antibody displayed minimal levels of non-specific binding expression. Cells that were not incubated with Fc block exhibited non-specific binding when stained with the antibody.

Recombinant formulation provides benefits beyond precise results

The Human BD Fc block is a recombinant protein derived from immunoglobulin. This formulation yields uniform batches which generate consistent results between experiments. The Fc block is formatted to be easily titrated and accommodates many different types of cells. Furthermore, the Fc block's recombinant nature ensures a safe alternative to human-derived products.

Fc receptors' role in biological detection

Fc γ receptors belong to the immunoglobulin superfamily and are expressed at varying levels in multiple cell lineages. High expression is observed particularly in myeloid and B cells. The major function of the Fc receptors is to serve as protection for the immune system. There are multiple different types of Fc receptors, reflecting a variety of different biological activities. The Fc receptors become modulated when they are aggregated by multivalent antigen-antibody complexes.

Human BD Fc Block™

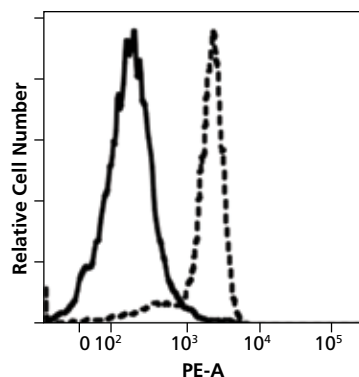


Figure 2. Blocking of non-specific Fc receptor-mediated antibody binding.

Peripheral blood mononuclear cells (PBMCs) were treated with Human Fc Block and stained with a PE mouse IgG_{2a} isotype control. The histogram shows Fc block-treated (solid line) or untreated PBMCs (dotted line) gated on monocytes.

Ordering Information

Description	Format	Size	Cat.No.
Human BD Fc Block™	Purified	50 µg	564219
		0.25 mg	564220
	NA/LE	0.25 mg	564765

Related Human Reagents

Description	Clone	Isotype	Format	Size	Cat.No.
CD10	W8E7	Mouse IgG _{2a} , κ	Purified	100 Tests	347500
			FITC	100 Tests	347503
CD24	ML5	Mouse IgG _{2a} , κ	Purified	0.1 mg	555426
			Alexa Fluor® 647	50 Tests	561644
			BD Horizon™ BV421	100 Tests	562789
			BD Horizon™ BV510	50 Tests	563035
			BD Horizon™ BV605	100 Tests	562788
			BD Horizon™ BV650	100 Tests	563720
			BD Horizon™ BV711	25 Tests	563371
				100 Tests	563401
			FITC	100 Tests	555427
			PE	100 Tests	555428
			BD Horizon™ PE-CF594	100 Tests	562405
CD102	CBR-1C2/2	Mouse IgG _{2a} , κ	PerCP-Cy™5.5	50 Tests	561647
			PE-Cy™7	50 Tests	561646
HLA-DR	G46-6	Mouse IgG _{2a} , κ	PE	100 Tests	558080
			APC	100 Tests	559866
			APC-H7	50 Tests	561358
			BD Horizon BV421	25 Tests	562805
				100 Tests	562804
			BD Horizon BV605	25 Tests	562844
				100 Tests	562845
			BD Horizon BV510	50 Tests	563083
			BD Horizon BV711	50 Tests	563696
			BD Horizon PE-CF594	100 Tests	562231
			BD Horizon™ V450	50 Tests	561359
			BD Horizon™ V500	25 Tests	561225
				100 Tests	561224
			FITC	100 Tests	555811
			PE	100 Tests	556644
			PerCP-Cy5.5	50 Tests	560652
			PE-Cy7	50 Tests	560651

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23-15994-01



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