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iF700 Anti-human IgD Antibody

Catalog Number:	121303, 121304
Size:	25 tests, 100 tests
Target Name:	IgD, immunoglobulin D, Ig delta chain C region
Regulatory Status:	RUO

PRODUCT DETAILS

Clone:	IgDAM2a
Application:	Flow Cytometry
Reactivity:	Human
Format:	iF700
Isotype:	mouse IgG2a
Antibody Type:	Monoclonal
Formulation:	Phosphate-buffered solution, pH 7.2, containing 0.09% sodium azide and 0.2% (w/v) BSA
Protein Concentration:	Supplied at a lot-specific concentration.
Storage&Handling:	The antibody solution should be stored undiluted between 2°C and 8°C, and protected from prolonged exposure to light. Do not freeze.
Recommended Usage:	For flow cytometric staining, it is recommended to use 5 µL of this reagent per 0.5-1.0 million cells in a 100 µL volume. Optimal reagent performance should be determined by titration for each specific application. iF700 has an excitation max at 690 nm and an emission max at 710 nm.
Excitation Laser:	Red Laser (633 nm)
Isotype Controls:	301521
Antibody Family:	Human Antibodies
Storage & Handling:	The antibody solution should be stored undiluted between 2°C and 8°C, and protected from prolonged exposure to light. Do not freeze.
Isotype Control:	301521

BACKGROUND INFORMATION

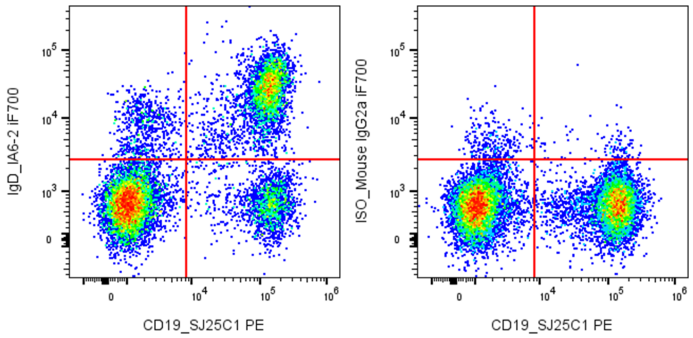
Human immunoglobulin D (IgD) is one of the five major classes of antibodies and plays an important role in B-cell development, activation, and immune regulation. It is predominantly expressed on the surface of mature naïve B lymphocytes, where it functions as part of the B-cell antigen receptor (BCR) complex, together with IgM. IgD helps B cells recognize foreign antigens and initiate immune responses, contributing to the development and regulation of adaptive humoral immunity. A small amount of IgD is also secreted into the circulation and mucosal tissues, where it may participate in immune surveillance and inflammatory responses.

IgD is a glycoprotein composed of two identical heavy chains and two identical light chains, forming a characteristic Y-shaped antibody structure with a molecular mass of approximately 180 kDa. Its heavy chains belong to the delta (δ) subclass and contain one variable domain and three constant domains. The molecule includes two antigen-binding Fab regions and an Fc region responsible for interactions with other immune components. IgD is expressed together with IgM through alternative RNA processing of the immunoglobulin heavy-chain transcript. Its antigen-binding specificity is determined by the variable regions, allowing recognition of a wide range of antigens. Proposed IgD-binding partners include basophil-associated receptors and certain innate immune cell-surface molecules, although its receptor interactions are less well characterized than those of other antibody classes.

IgD is implicated in several immune-related conditions. Elevated serum IgD levels have been observed in hyper-IgD syndrome, certain chronic inflammatory conditions, and some autoimmune diseases. Hyper-IgD syndrome, now commonly classified as mevalonate kinase deficiency, is an autoinflammatory disorder associated with recurrent inflammatory episodes. IgD may also contribute to mucosal immunity and inflammation through interactions with innate immune cells.

Therapeutically, IgD is being investigated as a potential target for modulating B-cell activity and inflammatory responses. Anti-IgD antibodies may help regulate or deplete IgD-expressing B-cell populations, while IgD-based antibodies and Fc-engineering approaches offer opportunities for antibody research and therapeutic development.

PRODUCT DATA



Human peripheral blood mononuclear cells were stained with PE Anti-Human CD19 clone SJ25C1 and iF700 Anti-Human IgD clone IgDAM2a (left) or an isotype control (right).

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