molecular probes
by life technologies

Qdot® CD4 Mouse Anti-Human Antibody Conjugates

Product	Form	Volume	Tests	Peak		Recommended Filter (nm)
				Excitation (nm)†	Emission (nm)	
Q10480	Qdot® 605	25 µL	25 min.	405 (488)	605	605/20
Q10007	Qdot® 655	100 µL	100 min.	405 (488)	655	655/20
Q10482	Qdot® 655	25 µL	25 min.	405 (488)	655	655/20
Q10060	Qdot® 705	100 µL	100 min.	405 (488)	705	720/20
Q10485	Qdot® 705	25 µL	25 min.	405 (488)	705	720/20
Q22153	Qdot® 800	25 µL	25 min.	405 (488)	800	780/60
Isotype Control: Mouse $IgG2_a$						
Q10014	Qdot® 605	100 µL	100 min.	405 (488)	605	605/20
Q10015	Qdot® 655	100 µL	100 min.	405 (488)	655	660/40
Q10076	Qdot® 705	100 µL	100 min.	405 (488)	705	720/20

†Qdot® nanocrystals excite optimally in the UV to 405 nm range, but can also be excited with wavelengths shorter than their emission maximum, such as with a 488-nm laser.

Product Description

Mouse monoclonal antibody to the human CD4 antigen

Product Specifications

Clone: S3.5

Clonality: Monoclonal

Isotype: Mouse $IgG2_a$

Lot No.: See product label

Buffer: 50 mM borate, 1 M betaine, pH 8.3

Preservative: 0.05% sodium azide. Sodium azide is an extremely toxic and dangerous compound, particularly when combined with acids or metals. Properly dispose of solutions containing sodium azide.

Storage and Handling

Store reagents at 2–8°C. **Do not freeze**. Because Qdot® nanocrystals are conjugated to biological materials, some loss of activity may be observed with prolonged storage.

Qdot® Antibody (Ab) conjugates are photostable, and do not need to be protected from light. However, if using Qdot® Ab conjugates in combination with conventional fluorochrome conjugated antibodies, minimize light exposure during handling, incubation with cells, and prior to analysis. We recommend analysis of cells within 18 hours of staining. If dilute reagent is used, dilute only the quantity of reagent to be used within one day.

The Qdot® Ab conjugates contain cadmium and selenium in an inorganic crystalline form. Dispose of the material in compliance with all applicable local, state, and federal regulations for disposal of these classes of material. For more information on the composition of these materials, consult the Safety Data Sheets (SDSs).

Stability

When stored as instructed, expires six months from date of receipt unless otherwise indicated on product label.

Qdot® Primary Antibody Conjugates

Qdot® Ab conjugates possess a bright fluorescence emission that makes them well suited for the detection of low-abundance extracellular proteins. Approximately the same size as R-phycoerythrin (R-PE) and compatible with existing organic fluorophore conjugates, Qdot® Ab conjugates can be excited with any wavelength below their emission maximum, but are best excited by UV or violet light. The narrow, symmetric emission profiles of Qdot® Ab conjugates allow for minimal compensation when using a single excitation source, and the very long stoke shifts enable better, more efficient multicolor assays using the 405 nm violet laser. Available in multiple colors for use flow cytometry, these advantages make Qdot® Ab conjugates powerful tools for antibody labeling and staining[1, 2].

Product Characterization

Antigen Specificity: This antibody recognizes the CD4 antigen also known as T4 and L3T4.[3–10] CD4 serves as a co-receptor during T cell activation through the binding of MHC Class II molecules. CD4 is expressed on helper T cells, thymocyte subsets, and to a lesser extent on peripheral blood monocytes.

Leukocyte Workshop Status: Leukocyte Typing V

Product Use

Staining: Stain cells in any standard staining buffer, such as phosphate-buffered saline (PBS) with 1% bovine serum albumin (BSA). We recommend titrating the antibody conjugate to determine the optimal conditions for use in your specific system. Qdot® Ab conjugates may be mixed with other antibodies, but use the diluted conjugates on the day of dilution. Qdot® Ab conjugates can be used for surface staining applications with most conventional sample preparation reagents, such as Cal-Lyse™ Lysing Solution and FIX & PERM® reagents, with minimal effect on fluorescence. We have observed some batches of BD FACS™ Lysing Solution to interfere with Qdot® Ab conjugate fluorescence.

Instrument setup: Qdot® Ab conjugate are excited optimally with UV or 405 nm light, although excitation can be obtained with any wavelength below the emission wavelength of a given nanocrystal. Make sure the cytometer has an appropriate emission filter for the Qdot® Ab conjugate being used. The table above has filter recommendations; alternate filters can be used as long as they capture the emission maximum, but filter width impacts spectral overlap corrections.

Note: Qdot® Ab conjugates can be used on cytometers that do not have UV or violet excitation sources as long as they have appropriate emission filters. Be sure to check for Qdot® Ab conjugate emission in any channel that can capture nanocrystal emission off of other lasers on the cytometer.

Product Quality Control

Each lot has been tested by flow cytometry using human peripheral blood leukocytes. See reverse for representative flow cytometry data.

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References

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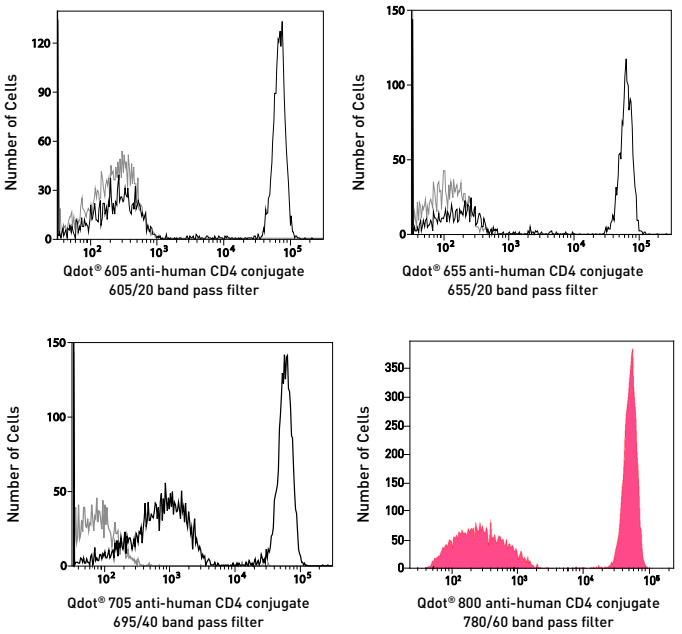
Related Products

Catalog no.	Product Name	Unit Size
GAS-010	Cal-Lyse™ Whole Blood Lysing Solution	25 mL
GAS-010S-100	Cal-Lyse™ Whole Blood Lysing Solution	100 mL
HYL-250	High-Yield Lyse Fixative	500 mL
GAS001S-5	FIX & PERM® Reagent A (Individual)	5 mL
GAS001S-100	FIX & PERM® Reagent A (Bulk)	100 mL
GAS002S-5	FIX & PERM® Reagent B (Individual)	5 mL
GAS002S-100	FIX & PERM® Reagent B (Bulk)	100 mL

Limited Product Warranty

Life Technologies Corporation and/or its affiliate(s) warrant their products as set forth in the Life Technologies' General Terms and Conditions of Sale found on Life Technologies' website at **www.lifetechnologies.com/termsandconditions**. If you have any questions, please contact Life Technologies at **www.lifetechnologies.com/support**.



Histogram of gated human lymphocytes labeled with CD4 Mouse Anti-Human mAb (clone S3.5) Qdot® Ab conjugates. Samples were acquired and analyzed using 405 nm excitation specified band pass emission filter on a BD LSR II flow cytometer (BD Biosciences, San Jose, CA). The black line and solid fill histograms represent cells stained with anti-human CD4 antibody conjugate, and the gray line represents unstained cells

Note: Flow cytometric data shown may not necessarily have been generated using the enclosed lot of reagent. For this reason, and due to differences in flow cytometers and cytometer settings, results may vary from those illustrated above. We recommend titrating reagents to determine optimal conditions for use in your systems.

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