

PRODUCT INFORMATION SHEET
Monoclonal antibodies detecting human antigens

CD3 FITC **CD4** R-PE REF IQP-253FR IVD 50 tests

IVD  **In Vitro Diagnostic medical device**



Description

- CD3** Clone **UCHT1** Isotype **murine IgG1**
For detailed description of this particular single reagent, please refer to IQP-519, CD3 (UCHT1)
- CD4** Clone **Edu-2** Isotype **murine IgG2a**
For detailed description of this particular single reagent, please refer to IQP-535, CD4 (Edu-2)

Intended use

CD3/CD4 dual combination, IQP-253FR, is a direct immunofluorescence reagent used for the detection of mature human T helper/inducer lymphocytes in whole blood (either lysed or non-lysed) using flow cytometry.

Summary

Human lymphocytes are, based on biological function and cell-surface antigen expression, divided in three populations: T, and B lymphocytes, and natural killer (NK) lymphocytes. T lymphocytes participate in antigen-specific cell-mediated immunity and regulate the secretion of immunoglobulin by B lymphocytes. T lymphocytes may also be classified based on their functional properties as helper/inducer and suppressor/cytotoxic.

Applications

Helper/inducer lymphocytes are a subset of T lymphocytes (CD3+) that are CD4+. The amount of helper/inducer T-lymphocyte (CD3+ CD4+) may be used to characterize and monitor some forms of immunodeficiency and autoimmune diseases. IQP-253FR allows helper/inducer T lymphocytes to be discriminated from contaminating CD3-CD4+ monocytes. The amount of helper/inducer T lymphocytes may be useful in monitoring human immunodeficiency virus (HIV)-infected patients. They typically show a steady decrease of helper/ inducer T lymphocytes during progress of infection.

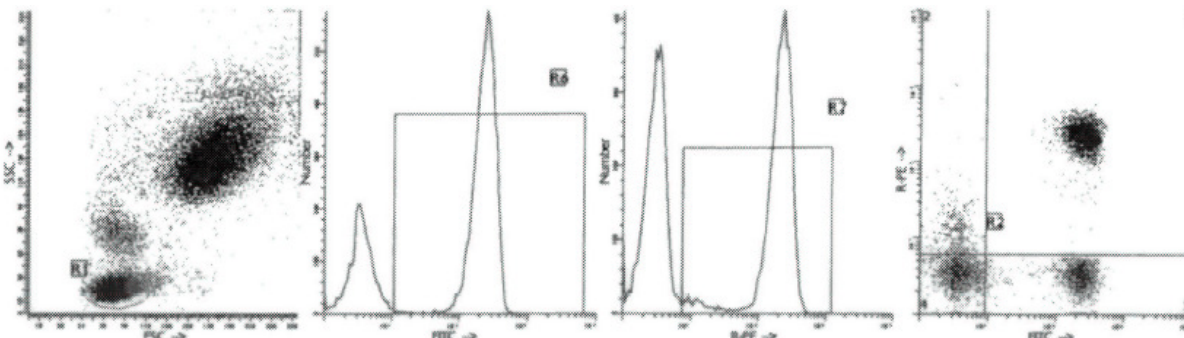
Note: Not all the application mentioned are performed using IQ Products reagents.

Note: The Centers for Disease Control (CDC) recommends using a dual color reagent combination containing CD3 and CD8 antibodies for determining the percentage of CD8+ T lymphocytes, and a dual color reagent combination containing CD3 and CD4 antibodies for determining the percentage of CD4+ T lymphocytes in human immunodeficiency virus (HIV)-infected patients.

Usage

All these reagents are effectively formulated for direct immunofluorescent staining of human tissue for flow cytometric analysis using 10 µL/10⁶ leukocytes for singles and 20 µL/10⁶ leukocytes in case of dual and triple combinations. Since applications vary, each investigator should titrate the reagent to obtain optimal results.

Representative Data



Reproducibility

Monoclonal antibodies from IQ Products were tested by flow cytometry using a 'lyse-wash' method on whole blood from healthy donors. Obtained data support the premise that these reagents are equivalent in their reactivity with peripheral blood lymphocytes. Values are expressed in terms of % of the total lymphocyte count (see table)

Reagent	n	Mean % positive	S.D.	% CV	Product code
CD3 FITC	10	67,25	5,03	7,48	IQP-253FR
CD4 R-PE	10	49,67	6,29	12,67	IQP-253FR

Limitations

1. Conjugates with brighter fluorochromes, like PE and APC, will have a greater separation than those with dyes like FITC and CyQ. When populations overlap, the percentage of positive cells using a selected marker can be affected by the choice of fluorescent label.
2. Use of monoclonal antibodies in patient treatment can interfere with antigen target recognition by this reagent. This should be taken into account when samples are analyzed from patients treated in this fashion. IQ Products has not characterized the effect of the presence of therapeutic antibodies on the performance of this reagent.
3. Reagents can be used in different combinations, therefore laboratories need to become familiar performance characteristics of each antibody in relation with the combined markers in normal and abnormal samples.
4. Reagent data performance is based on EDTA-treated blood. Reagent performance can be affected by the use of other anticoagulants.

Reagents and materials required but not supplied

1. Flow cytometer
2. Flow cytometry disposable 12 x 75-mm capped polystyrene test tubes
3. Micropipette with disposable tips
4. Vortex mixer
5. Centrifuge
6. IQ Lyse - erythrocyte lysing solution (IQP-199)
7. IQ Starfix - fixation and permeabilization solution (IQP-200)
8. PBS (phosphate-buffered saline)
9. 1% Heparin
10. 1% paraformaldehyde solution in PBS (store at 2-8 °C in amber glass for up to 1 week)

Immunofluorescence staining and lysing protocol

Flow cytometry method for use with dual and triple combinations

1. Add 100 µl of EDTA-treated blood (i.e. approx. 10⁶ leukocytes) to a 5 ml reagent tube. The content of one tube is sufficient to perform one test.
For combinations with anti-kappa and/or anti-lambda Ig see application note below.
2. Add to each tube 20 µl of labeled monoclonal antibody combination.*
3. Vortex the tube to ensure thorough mixing of antibody and cells.
4. Incubate the tube for 15 minutes at room temperature in the dark.
5. Add 100 µl of IQ Lyse (IQP-199 ready-to-use) and mix immediately.
6. Incubate for 10 minutes at room temperature in the dark.
7. Add 2 ml of demineralized water and incubate for 10 minutes in the dark.
8. Centrifuge the labeled cell suspension for 2 minutes at 1000 x g.
9. Remove the supernatant and resuspend the cells in 200 µl of PBS.**
10. Analyze by flow cytometry within four hours (alternatively, the cells may be fixed by 0.05% of formaline in buffered saline for analysis the next day. Some antigens are readily destroyed upon fixation and this should be taken into account when using this alternative).

* *Appropriate mouse Ig isotype control samples should always be included in any labeling study*

** *PBS: Phosphate Buffered Saline, pH 7.2*

Application note for anti-kappa and/or anti-lambda Ig combinations

Add 2 ml of PBS containing 0.001% (v/v) Heparin (**prewarmed to 37 °C**) to the cell suspension
Vortex, centrifuge (2 min at 300x g) and discard the supernatant
Repeat this step twice
Resuspend the pelleted blood cells in 100 µl PBS containing 0.001% (v/v) Heparin



Handling and Storage

Antibodies are supplied either as 100 tests per vial (1 ml) for singles or 50 tests per vial (1 ml) for dual and triple combinations. They are supplied in 0.01 M sodium phosphate, 0.15 M NaCl; pH 7.3, 0.2% BSA, 0.09% sodiumazide (NaN₃). Store the vials at 2-8 °C. Monoclonal antibodies should be protected from prolonged exposure to light. Reagents are stable for the period shown on the vial label when stored properly

Warranty Products sold hereunder are warranted only to conform to the quantity and contents stated on the label at the time of delivery to the customer. There are no warranties, expressed or implied, which extend beyond the description on the label of the product. IQ Products is not liable for property damage, personal injury, or economic loss caused by the product

Characterization To ensure consistently high-quality reagents, each batch of monoclonal antibody is tested for conformance with characteristics of a standard reagent. Representative flow cytometric data is included in this data sheet

Warning All products contain sodiumazide. This chemical is poisonous and hazardous. Handling should be done by trained staff only

Explanation of used symbols

	Consult instructions for use
	Catalogue number
	Sufficient for
	In Vitro Diagnostic medical device
	Caution, consult accompanying document
	Keep away from (sun)light
	Biological risks
	Temperature limitation (°C)
	For Research Use Only
	Batch code
	Use by yyyy-mm-dd
	Manufacturer
	Authorized Representative in the European Community
	Conformité Européenne (European Conformity)

		Label - tandem	Ex -max (nm)	Em -max (nm)
P	PURE	purified material	-	-
F	FITC	FITC	488	519
R	R-PE	PE	488, 532	578
C	CyQ	PE-Cy5.18	488, 532	667
A	APC		595, 633, 635, 647	660
PC	PerCP		488, 532	678
PCC	PerCP-Cy5.5		488, 532	695



IQ Products BV
Rozenburglaan 13a
9727 DL Groningen, The Netherlands

+31 (0)50 57 57 000
 +31 (0)50 57 57 002
 Technical marketing@iqproducts.nl
 Orders orders@iqproducts.nl
 www.iqproducts.nl

