

TECHNICAL DATA SHEET

redFluor™ 710 Anti-Human CD3 (UCHT1)

Catalog Number: 80-0038

PRODUCT INFORMATION

Contents: redFluor™ 710 Anti-Human CD3 (UCHT1)

Isotype: Mouse IgG1, kappa

Concentration: 5 uL (0.5 ug)/test

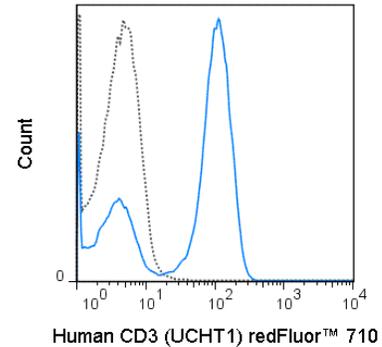
Clone: UCHT1

Reactivity: Human

Use By: 12 months from date of receipt

Storage Conditions: 2-8°C protected from light

Formulation: 10 mM NaH₂PO₄, 150 mM NaCl, 0.09% NaN₃, 0.1% gelatin, pH7.2



Human peripheral blood lymphocytes were stained with 5 uL (0.5 ug) redFluor™ 710 Anti-Human CD3 (80-0038) (solid line) or 0.5 ug redFluor™ 710 Mouse IgG1 isotype control (dashed line).

DESCRIPTION

The UCHT1 antibody is specific for human CD3e, also known as CD3 epsilon, a 20 kDa subunit of the T cell receptor complex, along with CD3 gamma and CD3 delta. These integral membrane protein chains assemble with additional chains of the T cell receptor (TCR), as well as CD3 zeta chain, to form the T cell receptor – CD3 complex. Together with co-receptors CD4 or CD8, the complex serves to recognize antigens bound to MHC molecules on antigen-presenting cells. These interactions promote T cell receptor signaling (T cell activation), inducing cell proliferation, differentiation, production of cytokines or activation-induced cell death. CD3 is differentially expressed during thymocyte-to-T cell development and on all mature T cells. The UCHT1 antibody is a widely used phenotypic marker for human T cells. In addition, binding/cross-linking of UCHT1 antibody to CD3e can induce cell activation. A recent publication of the crystal structure of a CD3e- antibody complex provides insight as to the action of commonly used agonist antibodies, as well as specific epitope-binding data for the human CD3 antibodies UCHT1 and OKT3 (Fernandes, R.A. et al. 2012. J. Biol. Chem. 287: 13324-13335). UCHT1 antibody reacts with both surface-expressed and intracellular CD3e protein, in contrast to an alternative human CD3 clone, HIT3a, which will stain only the extracellular (membrane-expressed) CD3e protein.

PREPARATION & STORAGE

This monoclonal antibody was purified from tissue culture supernatant via affinity chromatography. The purified antibody was conjugated under optimal conditions, with unreacted dye removed from the preparation. It is recommended to store the product undiluted at 4°C, and protected from prolonged exposure to light. Do not freeze.

APPLICATION NOTES

This antibody preparation has been pre-titrated and quality-tested for flow cytometry using an appropriate cell type. The antibody has been diluted for use at 5 uL per test, defined as the amount of antibody that will stain a cell sample in a final volume of approximately 100 uL. The number of cells within a sample should be determined empirically, but typically ranges between 1x10⁵ to 1x10⁸ cells.

redFluor™ 710 dye is excited by the red (633-647 nm) laser and has a peak emission of 710 nm. The recommended band pass filter for this dye is 710/50. redFluor™ 710 can be used as an alternative for Alexa Fluor® 700. Confirm that your cytometer is configured to detect this fluorochrome.

REFERENCES

Harris SJ, Parry RV, Foster JG, Blunt MD, Wang A, Marelli-Berg F, Westwick J, and Ward SG. Apr. 2011. J. Immunol. 186: 4936-4945. (in vitro activation) Beriou G, Bradshaw EM, Lozano E, Costantino CM, Hastings WD, Orban T, Elyaman W, Khoury SJ, Kuchroo VK, Baecher-Allan C, and Hafler DA. 2010. J. Immunol. 185: 46-54. (in vitro activation) Soto PC, Stein LL, Hurtado-Ziola N, Hedrick SM, and Varki A. 2010. J. Immunol. 184: 4185-4195. (Flow cytometry – Chimpanzee) Edelbauer M, Datta D, Vos IHC, Basu A, Stack MP, Reinders MEJ, Sho M, Calzadilla K, Ganze P, and Briscoe DM. 2010. Blood. 116:1980-1989. (Immunohistochemistry – acetone fixed, frozen sections; Immunofluorescence microscopy) Varghese JC and Kane KP. 2008. J. Immunol. 181: 6002-6009. (in vitro activation) Mack CL, Tucker RM, Sokol RJ, Darrer FM, Kotzin BL, Whittington PF and Miller SD. 2004. Pediatr. Res. 56(1):79-87. (Immunohistochemistry – frozen tissue) Sakkas LI, Scanzello C, Johanson N, Burkholder J, Mitra A, Salgame P, Katsetos CD, and Platsoucas CD. 1998. Clin. Diagn. Lab. Immun. 5:430.

Tonbo Biosciences tests all antibodies by flow cytometry. Citations are provided as a resource for additional applications that have not been validated by Tonbo Biosciences. Please choose the appropriate format for each application and consult Materials and Methods sections for additional details about the use of any product in these publications.

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