

TECHNICAL DATA SHEET

CyFlow™ CD3 Pacific Orange™ Anti-Hu; Clone UCHT1

REF AR027461

**For Research Use Only.
Not for use in diagnostic or therapeutic procedures.**

Specifications

Antigen	CD3
Alternative Names	T3, Leu4
Clone	UCHT1
Clonality	monoclonal
Format	Pacific Orange™
Host / Isotype	Mouse / IgG1
Species Reactivity	Human, Non-Human Primates
Negative Species Reactivity	—
Quantity	100 tests
Immunogen	Human thymocytes followed by Sezary T cells

Specificity

The mouse monoclonal antibody UCHT1 recognizes the CD3 antigen of the TCR/CD3 complex on mature human T cells. The UCHT1 antibody reacts with the ϵ chain of the CD3 complex. The monoclonal antibodies UCHT1 and SK7 recognize overlapping epitopes.

Contact Information:

Sysmex Partec GmbH • Am Flugplatz 13 • 02828 Görlitz • Germany
Tel +49 3581 8746 0 • Fax +49 3581 8746 70 • E-mail: info@sysmex-partec.com

Application

The reagent is designed for Flow Cytometry analysis of human blood cells. Recommended usage is 4 µl reagent / 100 µl of whole blood or 10⁶ cells in a suspension. The content of a vial (0.4 ml) is sufficient for 100 tests.

Other usages may be determined from the scientific literature.

Storage Buffer

The reagent is provided in stabilizing phosphate buffered saline (PBS) solution, pH ≈7.4, containing 0.1% (w/v) sodium azide.

Storage and Stability

Storage	Avoid prolonged exposure to light. Store in the dark at 2-8°C. Do not freeze.
Stability	Do not use after expiration date stamped on vial label.

Background Information

CD3 complex is crucial in transducing antigen-recognition signals into the cytoplasm of T cells and in regulating the cell surface expression of the TCR complex. T cell activation through the antigen receptor (TCR) involves the cytoplasmic tails of the CD3 subunits CD3 γ, CD3 δ, CD3 ε and CD3 ζ. These CD3 subunits are structurally related members of the immunoglobulins super family encoded by closely linked genes on human chromosome 11. The CD3 components have long cytoplasmic tails that associate with cytoplasmic signal transduction molecules. This association is mediated at least in part by a double tyrosine-based motif present in a single copy in the CD3 subunits. CD3 may play a role in TCR-induced growth arrest, cell survival and proliferation. The CD3 antigen is present on 68-82% of normal peripheral blood lymphocytes, 65-85% of thymocytes and Purkinje cells in the cerebellum. It is never expressed on B or NK cells. Decreased percentages of T lymphocytes may be observed in some autoimmune diseases.

References

- Garson JA, Beverley PC, Coakham HB, Harper EI: Monoclonal antibodies against human T lymphocytes label Purkinje neurones of many species. *Nature*. 1982 Jul 22; 298(5872):375-7. < PMID: 6178042 >
- McMichael AJ, Beverley PCL, Cobbold S, et al. (Eds): *Leucocyte Typing III, White Cell Differentiation Antigens*. Oxford University Press, Oxford. 1987; 1-1050. < NLM ID: 8913266 >

Contact Information:

Sysmex Partec GmbH • Am Flugplatz 13 • 02828 Görlitz • Germany
Tel +49 3581 8746 0 • Fax +49 3581 8746 70 • E-mail: info@sysmex-partec.com

- Fisch P, Malkovsky M, Braakman E, Sturm E, Bolhuis RL, Prieve A, Sosman JA, Lam VA, Sondel PM: Gamma/delta T cell clones and natural killer cell clones mediate distinct patterns of non-major histocompatibility complex-restricted cytotoxicity. *J Exp Med.* 1990 May 1; 171(5):1567-79. < PMID: 2185329 >
- Barclay, Brown, et al.: *The Leukocyte Antigen FactsBook*; 2nd edition. Harcourt Brace & Company, London. 1997; < No PMID >
- Kishimoto T, Goyert S, Kikutani H, Mason D, Miyasaka M, Moretta L, Ohno T, Okumura K, Shaw S, Springer TA, Sugamura K, Sugawara H, von dem Borne AEGK, Zola H (Eds): *Leucocyte Typing VI*. Garland Publishing Inc, New York. 1997; 1-1342. < NLM ID: 9712219 >
- le Gouvello S, Manceau V, Sobel A: Serine 16 of stathmin as a cytosolic target for Ca²⁺/calmodulin-dependent kinase II after CD2 triggering of human T lymphocytes. *J Immunol.* 1998 Aug 1; 161(3):1113-22. < PMID: 9686569 >
- Torres PS, Alcover A, Zapata DA, Arnaud J, Pacheco A, Martín-Fernández JM, Villasevil EM, Sanal O, Regueiro JR: TCR dynamics in human mature T lymphocytes lacking CD3 gamma. *J Immunol.* 2003 Jun 15; 170(12):5947-55. < PMID: 12794121 >
- Huang Y, Wange RL: T cell receptor signaling: beyond complex complexes. *J Biol Chem.* 2004 Jul 9; 279(28):28827-3. < PMID: 15084594 >
- Arnett KL, Harrison SC, Wiley DC: Crystal structure of a human CD3-epsilon/delta dimer in complex with a UCHT1 single-chain antibody fragment. *Proc Natl Acad Sci USA.* 2004 Nov 16; 101(46):16268-73. < PMID: 15534202 >
- Demedts IK, Brusselle GG, Vermaelen KY, Pauwels RA: Identification and characterization of human pulmonary dendritic cells. *Am J Respir Cell Mol Biol.* 2005 Mar; 32(3):177-84. < PMID: 15576669 >
- Lin CW, Liu TY, Chen SU, Wang KT, Medeiros LJ, Hsu SM: CD94 1A transcripts characterize lymphoblastic lymphoma/leukemia of immature natural killer cell origin with distinct clinical features. *Blood.* 2005 Nov 15; 106(10):3567-74. < PMID: 16046525 >
- Kuhns MS, Davis MM, Garcia KC: Deconstructing the form and function of the TCR/CD3 complex. *Immunity.* 2006 Feb; 24(2):133-9. < PMID: 16473826 >
- Alarcón B, Swamy M, van Santen HM, Schamel WW: T-cell antigen-receptor stoichiometry: pre-clustering for sensitivity. *EMBO Rep.* 2006 May; 7(5):490-5. < PMID: 16670682 >
- Rieux-Laucat F, Hivroz C, Lim A, Mateo V, Pellier I, Selz F, Fischer A, Le Deist F: Inherited and somatic CD3zeta mutations in a patient with T-cell deficiency. *N Engl J Med.* 2006 May 4; 354(18):1913-21. < PMID: 16672702 >

Contact Information:

Sysmex Partec GmbH • Am Flugplatz 13 • 02828 Görlitz • Germany
Tel +49 3581 8746 0 • Fax +49 3581 8746 70 • E-mail: info@sysmex-partec.com

- Siegers GM, Swamy M, Fernández-Malavé E, Minguet S, Rathmann S, Guardo AC, Pérez-Flores V, Regueiro JR, Alarcón B, Fisch P, Schamel WW: Different composition of the human and the mouse gammadelta T cell receptor explains different phenotypes of CD3gamma and CD3delta immunodeficiencies. J Exp Med. 2007 Oct 29; 204(11):2537-44. < PMID: 17923503 >

The Safety Data Sheet for this product is available at www.sysmex-partec.com/services.

This product is provided under an intellectual property license from Life Technologies Corporation. The transfer of this product is conditioned on the buyer using the purchased product solely in research conducted by the buyer, excluding contract research or any fee for service research, and the buyer must not sell or otherwise transfer this product or its components for (a) diagnostic, therapeutic or prophylactic purposes; (b) testing, analysis or screening services, or information in return for compensation on a per-test basis; (c) manufacturing or quality assurance or quality control, or (d) resale, whether or not resold for use in research. For information on purchasing a license to this product for purposes other than as described above, contact Life Technologies Corporation, 5791 Van Allen Way, Carlsbad, CA 92008 USA or outlicensing@lifetech.com.

Contact Information:

Sysmex Partec GmbH • Am Flugplatz 13 • 02828 Görlitz • Germany
Tel +49 3581 8746 0 • Fax +49 3581 8746 70 • E-mail: info@sysmex-partec.com