

TECHNICAL DATA SHEET

CyFlow™ CD4 PerCP-Cy5.5 **Anti-Hu; Clone MEM-241**

REF **AZ142430**

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

Specifications

Antigen	CD4
Alternative Names	T4, Leu3a
Clone	MEM-241
Clonality	monoclonal
Format	PerCP-Cy5.5
Host / Isotype	Mouse / IgG1
Species Reactivity	Human
Negative Species Reactivity	—
Quantity	100 tests
Immunogen	2 N-terminal domains of human CD4 fused to human IgG1 Fc

Specificity

The mouse monoclonal antibody MEM-241 recognizes CD4 antigen, a 55 kDa transmembrane glycoprotein expressed on a subset of T lymphocytes ("helper" T-cells) and also on monocytes, tissue macrophages and granulocytes.

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

CD4 (T4) is a single chain transmembrane glycoprotein and belongs to immunoglobulin supergene family. In extracellular region there are 4 immunoglobulin-like domains (1 Ig-like V-type and 3 Ig-like C2-type). Transmembrane region forms 25 aa, cytoplasmic tail consists of 38 aa. Domains 1,2 and 4 are stabilized by disulfide bonds. The intracellular domain of CD4 is associated with p56Lck, a Src-like protein tyrosine kinase. It was described that CD4 segregates into specific detergent-resistant T-cell membrane microdomains.

Extracellular ligands: MHC class II molecules (binds to CDR2-like region in CD4 domain 1); HIV envelope protein gp120 (binds to CDR2-like region in CD4 domain 1); IL-16 (binds to CD4 domain 3), Human seminal plasma glycoprotein gp17 (binds to CD4 domain 1), L-selectin

Intracellular ligands: p56LckCD4 is a co-receptor involved in immune response (co-receptor activity in binding to MHC class II molecules) and HIV infection (human immunodeficiency virus; CD4 is primary receptor for HIV-1 surface glycoprotein gp120). CD4 regulates T-cell activation, T/B-cell adhesion, T-cell differentiation, T-cell selection and signal transduction.

Defects in antigen presentation (MHC class II) cause dysfunction of CD4⁺ T-cells and their almost complete absence in patients blood, tissue and organs (SCID immunodeficiency).

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

References

- Millan J, Cerny J, Horejsi V, Alonso MA: CD4 segregates into specific detergent-resistant T-cell membrane microdomains. *Tissue Antigens*. 1999 Jan; 53(1):33-40. < PMID: 10082429 >
- Foti M, Phelouzat MA, Holm A, Rasmusson BJ, Carpentier JL: p56Lck anchors CD4 to distinct microdomains on microvilli. *Proc Natl Acad Sci USA*. 2002 Feb 19; 99(4):2008-13. < PMID: 11854499 >
- Clapham PR, McKnight A: Cell surface receptors, virus entry and tropism of primate lentiviruses. *J Gen Virol*. 2002 Aug; 83(8):1809-29. < PMID: 12124446 >
- Brdicková N, Brdicka T, Angelisová P, Horváth O, Spicka J, Hilgert I, Paces J, Simeoni L, Kliche S, Merten C, Schraven B, Horejsí V: LIME: a new membrane Raft-associated adaptor protein involved in CD4 and CD8 coreceptor signaling. *J Exp Med*. 2003 Nov 17; 198(10):1453-62. < PMID: 14610046 >
- Zola H, Swart B, Banham A, Barry S, Beare A, Bensussan A, Boumsell L, Buckley C, Buhring HJ, Clark G, Engel P, Fox D, Jin BQ, Macardle PJ, Malavasi F, Mason D, Stockinger H, Yang X: CD molecules 2006: human cell differentiation molecules. *J Immunol Methods*. 2007 Jan 30; 319(1-2):1-5. < PMID: 17174972 >
- Manasa J, Musabaike H, Masimirembwa C, Burke E, Luthy R, Mudzori J: Evaluation of the Partec flow cytometer against the BD FACSCalibur system for monitoring immune responses of human immunodeficiency virus-infected patients in Zimbabwe. *Clin Vaccine Immunol*. 2007 Mar; 14(3):293-8. < PMID: 17267593 >
- Anderson AE, Sayers BL, Haniffa MA, Swan DJ, Diboll J, Wang XN, Isaacs JD, Hilkens CM: Differential regulation of naïve and memory CD4+ T cells by alternatively activated dendritic cells. *J Leukoc Biol*. 2008 Jul; 84(1):124-33. < PMID: 18430785 >
- Karlsson KR, Cowley S, Martinez FO, Shaw M, Minger SL, James W: Homogeneous monocytes and macrophages from human embryonic stem cells following coculture-free differentiation in M-CSF and IL-3. *Exp Hematol*. 2008 Sep; 36(9):1167-75. < PMID: 18550257 >
- Hovden AO, Karlsen M, Jonsson R, Aarstad HJ, Appel S: Maturation of monocyte derived dendritic cells with OK432 boosts IL-12p70 secretion and conveys strong T-cell responses. *BMC Immunol*. 2011 Jan 5; 12:2. < PMID: 21208424 >

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

Cy and CyDye are trademarks of GE Healthcare.

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

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