



Ly-6C (ER-MP20): sc-52650

BACKGROUND

The gene encoding the mouse alloantigen, Ly-6C, maps to chromosome 15 D3 and encodes a 131 amino acid protein that belongs to the Ly-6 family of glycosyl-phosphatidylinositol (GPI)-linked proteins. Ly-6 family members share amino acid homology throughout a distinctive cysteine rich protein domain that incorporates O-linked carbohydrates. Murine Ly-6 molecules have unique patterns of tissue expression during hematopoiesis from multipotential stem cells to lineage committed precursor cells, and on specific leukocyte subpopulations in the peripheral lymphoid tissues. Ly-6C is predominantly expressed on murine peripheral CD8 T cells. Ly-6C is involved in endothelial adhesion, the killing of target cells by CTLs, inducing TCR-mediated activation of IL-2 and IFN- γ production in CD8 T cells and the homing of CD8 T cells. In addition, Ly-6C may act as a signaling molecule of LFA-1 activation.

REFERENCES

1. Philbrick, W.M., et al. 1990. A recombination event in the 5' flanking region of the Ly-6C gene correlates with impaired expression in the NOD, NZB and ST strains of mice. *EMBO J.* 9: 2485-2492.
2. Classon, B.J. and Coverdale, L. 1994. Mouse stem cell antigen Sca-2 is a member of the Ly-6 family of cell surface proteins. *Proc. Natl. Acad. Sci. USA* 91: 5296-5300.
3. Gumley, T.P., et al. 1995. Tissue expression, structure and function of the murine Ly-6 family of molecules. *Immunol. Cell Biol.* 73: 277-296.
4. Takikawa, O., et al. 1996. Multiple expression of Ly-6C and accumulation of a Ly-6C pre-mRNA in activated macrophages involved in rejection of an allografted tumor. *Biochem. Biophys. Res. Commun.* 226: 247-253.
5. Classon, B.J. and Boyd, R.L. 1998. Thymic-shared antigen-1 (TSA-1). A lymphostromal cell membrane Ly-6 superfamily molecule with a putative role in cellular adhesion. *Dev. Immunol.* 6: 149-156.
6. Ding, L. and Shevach, E.M. 2001. Inhibition of the function of the Fc γ RIIB by a monoclonal antibody to thymic shared antigen-1, a Ly-6 family antigen. *Immunology* 104: 28-36.
7. Zammit, D.J., et al. 2002. Essential role for the lymphostromal plasma membrane Ly-6 superfamily molecule thymic shared antigen 1 in development of the embryonic adrenal gland. *Mol. Cell. Biol.* 22: 946-952.
8. Jaakkola, I., et al. 2003. Ly-6C induces clustering of LFA-1 (CD11a/CD18) and is involved in subtype-specific adhesion of CD8 T cells. *J. Immunol.* 170: 1283-1290.
9. Nagendra, S. and Schlueter, A.J. 2004. Absence of cross-reactivity between murine Ly-6C and Ly-6G. *Cytometry A* 58: 195-200.

CHROMOSOMAL LOCATION

Genetic locus: Ly6c1 (mouse) mapping to 15 D3.

SOURCE

Ly-6C (ER-MP20) is a rat monoclonal antibody raised against a macrophage cell line of mouse origin.

PRODUCT

Each vial contains 200 μ g IgG_{2a} in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Ly-6C (ER-MP20) is available conjugated to either phycoerythrin (sc-52650 PE) or fluorescein (sc-52650 FITC), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM.

APPLICATIONS

Ly-6C (ER-MP20) is recommended for detection of Ly-6C of mouse origin by immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1 μ g per 1 x 10⁶ cells).

Suitable for use as control antibody for Ly-6C siRNA (m): sc-42943, Ly-6C shRNA Plasmid (m): sc-42943-SH and Ly-6C shRNA (m) Lentiviral Particles: sc-42943-V.

Molecular Weight of Ly-6C: 14-16 kDa.

Positive Controls: BW5147 cell lysate: sc-3800 or mouse lymph node extract: sc-364243.

SELECT PRODUCT CITATIONS

1. Wondimu, Z., et al. 2010. Protective role of interleukin-17 in murine NKT cell-driven acute experimental hepatitis. *Am. J. Pathol.* 177: 2334-2346.
2. Han, H., et al. 2015. Flaxseed oil containing α -linolenic acid ester of plant sterol improved atherosclerosis in apoE deficient mice. *Oxid. Med. Cell. Longev.* 2015: 958217.
3. Tripathi, D., et al. 2018. Alcohol enhances type 1 interferon- α production and mortality in young mice infected with *Mycobacterium tuberculosis*. *PLoS Pathog.* 14: e1007174.
4. Ye, Z., et al. 2019. A peptide analogue of selectin ligands attenuated atherosclerosis by inhibiting monocyte activation. *Mediators Inflamm.* 2019: 8709583.
5. Zhang, W., et al. 2020. Ly-6C^{high} inflammatory-monocyte recruitment is regulated by p38 MAPK/MCP-1 activation and promotes ventilator-induced lung injury. *Int. Immunopharmacol.* 78: 106015.
6. Martínez-Carmona, M., et al. 2021. Ly6c as a new marker of mouse blood vessels: qualitative and quantitative analyses on intact and ischemic retinas. *Int. J. Mol. Sci.* 23: 19.
7. Li, X., et al. 2024. Immune cells promote BDNF expression by infiltrated macrophages via interleukin 4 in the cerebral ischemia of male rats. *J. Neurosci. Res.* 102: e25379.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.