

MHC class II (ER-TR3): sc-59318

BACKGROUND

Major histocompatibility complex (MHC) molecules, also designated human leukocyte antigen (HLA) molecules, are cell-surface receptors that bind foreign peptides and present them to T lymphocytes. MHC class I molecules consist of two polypeptide chains, an α or heavy chain and β -2-Microglobulin, a non-covalently associated protein. Cytotoxic T lymphocytes bind antigenic peptides presented by MHC class I molecules. Antigens that bind to MHC class I molecules are typically 8-10 residues in length and are stabilized in a peptide binding groove. MHC class II molecules are encoded by polymorphic MHC genes and consist of a non-covalent complex of an α and β chain. Helper T lymphocytes bind antigenic peptides presented by MHC class II molecules. MHC class II molecules bind 13-18 amino acid antigenic peptides. Accumulating in endosomal/lysosomal compartments and on the surface of B cells, HLA-DM and -DO molecules regulate binding of exogenous peptides to class II molecules (HLA-DR) by sustaining a conformation that favors peptide exchange. The differential structural properties of MHC class I and class II molecules account for their respective roles in activating different populations of T lymphocytes.

CHROMOSOMAL LOCATION

Genetic locus: HLA-DRA (human) mapping to 6p21.32; H2-Ea-ps (mouse) mapping to 17 B1.

SOURCE

MHC class II (ER-TR3) is a rat monoclonal antibody raised against full length MHC class II of mouse origin.

PRODUCT

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

MHC class II (ER-TR3) is available conjugated to agarose (sc-59318 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-59318 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-59318 PE), fluorescein (sc-59318 FITC), Alexa Fluor® 488 (sc-59318 AF488), Alexa Fluor® 546 (sc-59318 AF546), Alexa Fluor® 594 (sc-59318 AF594) or Alexa Fluor® 647 (sc-59318 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-59318 AF680) or Alexa Fluor® 790 (sc-59318 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

MHC class II (ER-TR3) is recommended for detection of MHC class II of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], 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), flow cytometry (1 μ g per 1 x 10⁶ cells) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

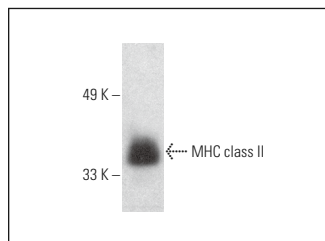
Molecular Weight of MHC class II α/β : 34/29 kDa.

Positive Controls: mouse spleen extract: sc-2391.

STORAGE

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

DATA



MHC class II (ER-TR3) HRP: sc-59318 HRP. Direct western blot analysis of MHC class II expression in mouse spleen tissue extract.

SELECT PRODUCT CITATIONS

- Chen, K.T., et al. 2011. A role for intestinal alkaline phosphatase in the maintenance of local gut immunity. *Dig. Dis. Sci.* 56: 1020-1027.
- Bang, M.A., et al. 2015. *Bacillus subtilis* KCTC 11782BP-produced alginate oligosaccharide effectively suppresses asthma via T-helper cell type 2-related cytokines. *PLoS ONE* 10: e0117524.
- Lee, S.Y., et al. 2018. *Mycocleptodonoides aitchisonii* suppresses asthma via Th2 and Th1 cell regulation in an ovalbumin-induced asthma mouse model. *Mol. Med. Rep.* 17: 11-20.
- Li, T.F., et al. 2019. Doxorubicin-polyglycerol-nanodiamond composites stimulate glioblastoma cell immunogenicity through activation of autophagy. *Acta Biomater.* 86: 381-394.
- McKenzie, B.A., et al. 2020. Activation of the executioner caspases-3 and -7 promotes microglial pyroptosis in models of multiple sclerosis. *J. Neuroinflammation* 17: 253.
- Li, T.F., et al. 2021. Efficient delivery of chlorin e6 by polyglycerol-coated iron oxide nanoparticles with conjugated doxorubicin for enhanced photodynamic therapy of melanoma. *Mol. Pharm.* 18: 3601-3615.
- Park, M.C., et al. 2022. Two distinct receptor-binding domains of human glycyl-tRNA synthetase 1 displayed on extracellular vesicles activate M1 polarization and phagocytic bridging of macrophages to cancer cells. *Cancer Lett.* 539: 215698.
- Li, L.G., et al. 2023. A dihydroartemisinin-loaded nanoreactor motivates anti-cancer immunotherapy by synergy-induced ferroptosis to activate Cgas/STING for reprogramming of macrophage. *Adv. Healthc. Mater.* 12: e2301561.

RESEARCH USE

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

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