

EBV LMP-2A (15F9): sc-101315

BACKGROUND

Epstein-Barr virus (EBV) is a human herpes virus that ubiquitously infects the majority of the human population. Although most EBV infections are asymptomatic, the virus itself is associated with epithelioid and lymphoid malignancies. EBV LMP-2A (Epstein-Barr virus latent membrane protein 2A), also known as LMP2A, is a 497 amino acid EBV protein that exists on the surface of EBV-infected cells and consists of a short C-terminal tail, 12 membrane-spanning domains and a long N-terminal segment. Expressed in most EBV-associated malignancies, EBV LMP-2A associates with protein tyrosine kinases and, via this association, activates the PI 3-kinase (phosphatidylinositol 3-kinase) pathway, thereby preventing apoptosis. Through its ability to regulate PI 3-kinase signaling events, EBV LMP-2A provides growth and developmental survival signals to infected cells, thus facilitating EBV-induced tumorigenesis. Additionally, EBV LMP-2A can mimic B-cell receptor complex (BCR) signaling in BCR-negative cells, further implicating EBV LMP-2A as an important factor in the survival of mutated cells.

REFERENCES

1. Fruehling, S., et al. 1996. Identification of latent membrane protein 2A (LMP2A) domains essential for the LMP2A dominant-negative effect on B-lymphocyte surface immunoglobulin signal transduction. *J. Virol.* 70: 6216-6226.
2. Wang, H., et al. 2006. EBV latent membrane protein 2A induces autoreactive B cell activation and TLR hypersensitivity. *J. Immunol.* 177: 2793-2802.
3. Mancao, C. and Hammerschmidt, W. 2007. Epstein-Barr virus latent membrane protein 2A is a B cell receptor mimic and essential for B cell survival. *Blood* 110: 3715-3721.
4. Rovedo, M. and Longnecker, R. 2007. Epstein-Barr virus latent membrane protein 2B (LMP2B) modulates LMP2A activity. *J. Virol.* 81: 84-94.
5. Fukuda, M. and Longnecker, R. 2007. Epstein-Barr virus latent membrane protein 2A mediates transformation through constitutive activation of the Ras/PI3-K/Akt pathway. *J. Virol.* 81: 9299-9306.
6. Gerle, B., et al. 2007. Acetylated Histone H3 and H4 mark the upregulated LMP2A promoter of Epstein-Barr virus in lymphoid cells. *J. Virol.* 81: 13242-13247.
7. Ikeda, M. and Longnecker, R. 2007. Cholesterol is critical for Epstein-Barr virus latent membrane protein 2A trafficking and protein stability. *Virology* 360: 461-468.
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SOURCE

EBV LMP-2A (15F9) is a rat monoclonal antibody raised against bacterial TrpE-LMP2A fusion protein.

PRODUCT

Each vial contains 200 µg IgG₁ in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

EBV LMP-2A (15F9) is available conjugated to agarose (sc-101315 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-101315 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-101315 PE), fluorescein (sc-101315 FITC), Alexa Fluor® 488 (sc-101315 AF488), Alexa Fluor® 546 (sc-101315 AF546), Alexa Fluor® 594 (sc-101315 AF594) or Alexa Fluor® 647 (sc-101315 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-101315 AF680) or Alexa Fluor® 790 (sc-101315 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

EBV LMP-2A (15F9) is recommended for detection of LMP-2A of EBV origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Molecular Weight of EBV LMP-2A: 54 kDa.

SELECT PRODUCT CITATIONS

1. Fox, C.P., et al. 2010. A novel latent membrane 2 transcript expressed in Epstein-Barr virus-positive NK- and T-cell lymphoproliferative disease encodes a target for cellular immunotherapy. *Blood* 116: 3695-3704.
2. Ma, S.D., et al. 2012. An Epstein-Barr virus (EBV) mutant with enhanced BZLF1 expression causes lymphomas with abortive lytic EBV infection in a humanized mouse model. *J. Virol.* 86: 7976-7987.
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5. Jiang, Y., et al. 2021. LMP2A suppresses the role of AHR pathway through ERK signal pathway in EBV-associated gastric cancer. *Virus Res.* 297: 198399.
6. Liu, D., et al. 2022. LMP2A inhibits the expression of KLF5 through the mTORC1 pathway in EBV-associated gastric carcinoma. *Virus Res.* 315: 198792.

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.