

2'-PDE (S-14): sc-102278

BACKGROUND

C-C or β chemokine family members are characterized by a pair of adjacent cysteine residues and serve as potent chemoattractants and activators of monocytes and T cells. However, this receptor family has also been shown to facilitate viral infection. 2'-PDE, also designated PDE12, is a member of the CCR4/Nocturin family and a key component of the 2-5A system. The 2-5A system is a major pathway induced by interferons (IFNs), in which unusual oligoadenylates, referred to as 2-5As, modulate RNA degradation in cells. 2'-PDE degrades 2-5A to AMP and ATP. Viral infection of cells induces the secretion of IFNs, which upregulate 2',5'-OASs. Suppression of 2'-PDE results in significant reduction of viral replication, whereas overexpression of 2'-PDE has been shown to protect cells from IFN-induced antiproliferative activity. Therefore, 2'-PDE may act as a potential target for antiviral and antitumor treatments.

REFERENCES

- Schmidt, A., Zilberstein, A., Shulman, L., Federman, P., Berissi, H. and Revel, M. 1978. Interferon action: isolation of nuclease F, a translation inhibitor activated by interferon-induced (2'-5') oligo-isoadenylate. *FEBS Lett.* 95: 257-264.
- Severin, E.S., Itkes, A.V., Kartasheva, O.N., Tunitskaya, V.L., Turpaev, K.T. and Kafiani, C.A. 1985. Regulation of 2-5 A phosphodiesterase activity by cAMP-dependent phosphorylation: mechanism and biological role. *Adv. Enzyme Regul.* 23: 365-376.
- Saarma, M., Toots, U., Raukas, E., Zhelkovsky, A., Pivazian, A. and Neuman, T. 1986. Nerve growth factor induces changes in (2'-5')oligo(A) synthetase and 2'-phosphodiesterase activities during differentiation of PC12 pheochromocytoma cells. *Exp. Cell Res.* 166: 229-236.
- Dragic, T., Litwin, V., Allaway, G.P., Martin, S.R., Huang, Y., Nagashima, K.A., Cayanan, C., Maddon, P.J., Koup, R.A., Moore, J.P. and Paxton, W.A. 1996. HIV-1 entry into CD4⁺ cells is mediated by the chemokine receptor CC-KR-5. *Nature* 381: 667-673.
- Deng, H., Liu, R., Ellmeier, W., Choe, S., Unutmaz, D., Burkhart, M., Di Marzio, P., Marmon, S., Sutton, R.E., Hill, C.M., Davis, C.B., Peiper, S.C., Schall, T.J., Littman, D.R. and Landau, N.R. 1996. Identification of a major co-receptor for primary isolates of HIV-1. *Nature* 381: 661-666.
- Feng, Y., Broder, C.C., Kennedy, P.E. and Berger, E.A. 1996. HIV-1 entry cofactor: functional cDNA cloning of a seven-transmembrane, G protein-coupled receptor. *Science* 272: 872-877.
- Kubota, K., Nakahara, K., Ohtsuka, T., Yoshida, S., Kawaguchi, J., Fujita, Y., Ozeki, Y., Hara, A., Yoshimura, C., Furukawa, H., Haruyama, H., Ichikawa, K., Yamashita, M., Matsuo, T. and Iijima, Y. 2004. Identification of 2'-phosphodiesterase, which plays a role in the 2-5A system regulated by interferon. *J. Biol. Chem.* 279: 37832-37841.

CHROMOSOMAL LOCATION

Genetic locus: PDE12 (human) mapping to 3p14.3; Pde12 (mouse) mapping to 14 A3.

SOURCE

2'-PDE (S-14) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping near the C-terminus of 2'-PDE of human origin.

PRODUCT

Each vial contains 100 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-102278 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

2'-PDE (S-14) is recommended for detection of 2'-PDE 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

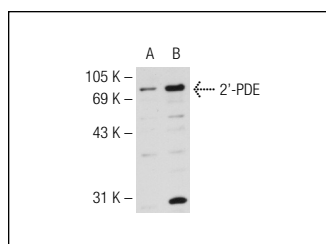
2'-PDE (S-14) is also recommended for detection of 2'-PDE in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for 2'-PDE siRNA (h): sc-78240, 2'-PDE siRNA (m): sc-108585, 2'-PDE shRNA Plasmid (h): sc-78240-SH, 2'-PDE shRNA Plasmid (m): sc-108585-SH, 2'-PDE shRNA (h) Lentiviral Particles: sc-78240-V and 2'-PDE shRNA (m) Lentiviral Particles: sc-108585-V.

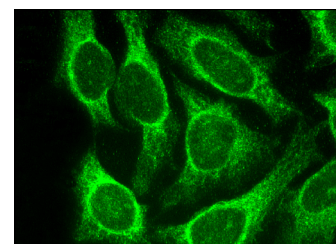
Molecular Weight of 2'-PDE: 65 kDa.

Positive Controls: 2'-PDE (h3): 293T Lysate: sc-176773.

DATA



2'-PDE (S-14): sc-102278. Western blot analysis of 2'-PDE expression in non-transfected: sc-117752 (A) and human 2'-PDE transfected: sc-176773 (B) 293T whole cell lysates.



2'-PDE (S-14): sc-102278. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

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.