

# P2Y1 (E-1): sc-377324

## BACKGROUND

Nucleotides are emerging as important extracellular signaling molecules that mediate several effects, such as proliferation, differentiation, chemotaxis and cytokine release. The P2 receptor family is activated by the binding of nucleotides and is divided into two subfamilies, P2X and P2Y. The P2X receptor family is comprised of ligand-gated ion channels that allow for the increased permeability of calcium into the cell in response to extracellular ATP. The P2Y receptor family are G protein-coupled receptors which mediate the effects of extracellular nucleotides, primarily through the activation of phospholipase C. To some extent, the P2Y receptors can also activate potassium channels or, alternatively, inhibit adenylate cyclase and N-type calcium channels in response to extracellular nucleotides. The P2Y receptors are differentially expressed in several tissue types, such as heart, lung and brain. However, all P2Y receptors are expressed in leukocytes, which suggests a role for the P2Y receptor family in the activation of leukocytes and platelets in response to inflammation or vascular damage.

## REFERENCES

1. Akbar, G.K., et al. 1996. Molecular cloning of a novel P2 purinoceptor from human erythroleukemia cells. *J. Biol. Chem.* 271: 18363-18367.
2. North, R.A., et al. 1997. Nucleotide receptors. *Curr. Opin. Neurobiol.* 7: 346-357.
3. Burnstock, G. 2000. P2X receptors in sensory neurones. *Br. J. Anaesth.* 84: 476-488.
4. Oury, C., et al. 2000. A natural dominant negative P2X1 receptor due to deletion of a single amino acid residue. *J. Biol. Chem.* 275: 22611-22614.
5. Ding, S., et al. 2000. Inactivation of P2X2 purinoceptors by divalent cations. *J. Physiol.* 2: 199-214.

## CHROMOSOMAL LOCATION

Genetic locus: P2RY1 (human) mapping to 3q25.2; P2ry1 (mouse) mapping to 3 D.

## SOURCE

P2Y1 (E-1) is a mouse monoclonal antibody raised against amino acids 146-265 mapping near the C-terminus of P2Y1 of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

P2Y1 (E-1) is available conjugated to agarose (sc-377324 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-377324 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-377324 PE), fluorescein (sc-377324 FITC), Alexa Fluor® 488 (sc-377324 AF488), Alexa Fluor® 546 (sc-377324 AF546), Alexa Fluor® 594 (sc-377324 AF594) or Alexa Fluor® 647 (sc-377324 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-377324 AF680) or Alexa Fluor® 790 (sc-377324 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

## APPLICATIONS

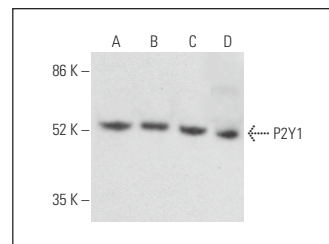
P2Y1 (E-1) is recommended for detection of P2Y1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for P2Y1 siRNA (h): sc-42577, P2Y1 siRNA (m): sc-42578, P2Y1 shRNA Plasmid (h): sc-42577-SH, P2Y1 shRNA Plasmid (m): sc-42578-SH, P2Y1 shRNA (h) Lentiviral Particles: sc-42577-V and P2Y1 shRNA (m) Lentiviral Particles: sc-42578-V.

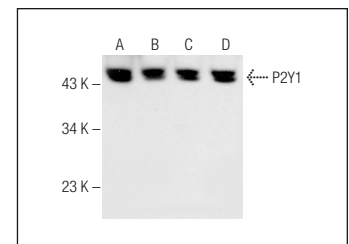
Molecular Weight of P2Y1: 45 kDa.

Positive Controls: A549 cell lysate: sc-2413, U-87 MG cell lysate: sc-2411 or H4 cell lysate: sc-2408.

## DATA



P2Y1 (E-1): sc-377324. Western blot analysis of P2Y1 expression in Jurkat (A), NCI-H292 (B) and HEL 92.1.7 (C) whole cell lysates and rat liver tissue extract (D).



P2Y1 (E-1): sc-377324. Western blot analysis of P2Y1 expression in Jurkat (A), A549 (B), U-87 MG (C) and H4 (D) whole cell lysates.

## SELECT PRODUCT CITATIONS

1. Wu, J., et al. 2017. P2Y1R is involved in visceral hypersensitivity in rats with experimental irritable bowel syndrome. *World J. Gastroenterol.* 23: 6339-6349.
2. Prabhu, D., et al. 2019. Loss of Insulin-like growth factor-1 signaling in astrocytes disrupts glutamate handling. *J. Neurochem.* 151: 689-702.
3. Merz, J., et al. 2021. Pro- and anti-inflammatory macrophages express a sub-type specific purinergic receptor profile. *Purinergic Signal.* 17: 481-492.
4. Marchecheva, B., et al. 2022. P2Y1 purinergic receptor identified as a diabetes target in a small-molecule screen to reverse circadian β-cell failure. *Elife* 11: e75132.
5. Yu, W., et al. 2022. Pulmonary neuroendocrine cells sense succinate to stimulate myoepithelial cell contraction. *Dev. Cell* 57: 2221-2236.e5.

## 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.