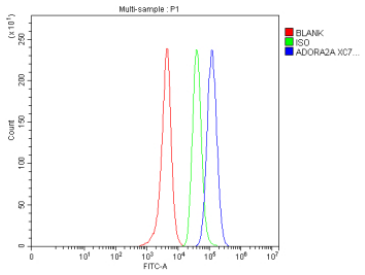
ADORA2A Antibody / Adenosine receptor A2A (FY13300)

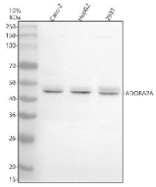
Catalog No.	Formulation	Size
FY13300	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

Availability	1-2 days
Species Reactivity	Human, Mouse
Format	Lyophilized
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	P29274
Applications	Western Blot : 0.25-0.5ug/ml Flow Cytometry : 1-3ug/million cells ELISA : 0.1-0.5ug/ml
Limitations	This ADORA2A antibody is available for research use only.



Flow Cytometry analysis of SH-SY5Y cells using anti-ADORA2A antibody. Overlay histogram showing SH-SY5Y cells stained with (Blue line). The cells were fixed with 4% paraformaldehyde and blocked with 10% normal goat serum. And then incubated with rabbit anti-ADORA2A antibody (1 ug/million cells) for 30 min at 20oC. DyLight 488 conjugated goat anti-rabbit IgG (5-10 ug/million cells) was used as secondary antibody for 30 minutes at 20oC. Isotype control antibody (Green line) was rabbit IgG (1 ug/million cells) used under the same conditions. Unlabelled sample without incubation with primary antibody and secondary antibody (Red line) was used as a blank control.



Western blot analysis of ADORA2A using anti-ADORA2A antibody. Electrophoresis was performed on a 10% SDS-PAGE gel at 80V (Stacking gel) / 120V (Resolving gel) for 2 hours. Lane 1: human Caco-2 whole cell lysates, Lane 2: human HepG2 whole cell lysates, Lane 3: human 293T whole cell lysates. After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-ADORA2A antibody at 0.5 ug/ml overnight at 4oC, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:5000 for 1.5 hour at RT. The signal was developed using an ECL Plus Western Blotting Substrate. A specific band was detected for ADORA2A at approximately 45 kDa. The expected molecular weight of ADORA2A is ~45 kDa.

Description

ADORA2A antibody recognizes Adenosine receptor A2A, a G protein-coupled receptor (GPCR) that mediates adenosine signaling to regulate neurotransmission, vascular tone, and immune responses. The ADORA2A gene, located on chromosome 22q11.23, encodes a seven-transmembrane domain receptor coupled to Gs proteins that stimulate cyclic AMP (cAMP) production upon adenosine binding. This receptor is highly expressed in the central nervous system, particularly in the striatum, as well as in immune cells, endothelial cells, and platelets.

Structurally, ADORA2A consists of an extracellular ligand-binding pocket for adenosine and intracellular domains that interact with G proteins and regulatory kinases. The receptor plays a critical role in modulating dopaminergic neurotransmission, motor control, and sleep regulation. Pharmacologically, ADORA2A is a therapeutic target for ParkinsonÂ's disease and psychiatric disorders due to its antagonistic interaction with dopamine D2 receptors. In the cardiovascular system, ADORA2A activation causes vasodilation and platelet inhibition, contributing to tissue perfusion and anti-thrombotic effects.

ADORA2A signaling also exerts immunomodulatory functions by suppressing pro-inflammatory cytokine production and promoting regulatory T cell activity. Dysregulation of this receptor is linked to neurodegenerative diseases, ischemia, and autoimmune conditions. Overexpression of ADORA2A in certain tumors supports immunosuppressive microenvironments by inhibiting T-cell activation, making it an emerging target for cancer immunotherapy. Structural and mutational analyses have revealed key residues responsible for ligand specificity and receptor desensitization through phosphorylation and arrestin binding.

Immunohistochemical staining using ADORA2A antibody shows membrane and cytoplasmic localization in neurons, endothelial cells, and lymphocytes. ADORA2A antibody from NSJ Bioreagents provides a powerful tool for studying adenosine-mediated signaling, neuroprotection, cardiovascular regulation, and tumor immunology.

Application Notes

Optimal dilution of the ADORA2A antibody should be determined by the researcher.

Immunogen

E.coli-derived human ADORA2A recombinant protein (Position: N144-G410) was used as the immunogen for the ADORA2A antibody.

Storage

After reconstitution, the ADORA2A antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.