

A2AR Protein-Nanodisc, Human, Recombinant (His & Flag)

General Information

Protein Construction:	A DNA sequence encoding the human AA2AR (P29274) (Pro2-Leu208 & Glu219-Ala316) (TM domains 1-7) was expressed and linked by a Fusion Protein, with a Flag tag at the N-terminus and a polyhistidine tag at the C-terminus. Nanodisc is a versatile tool for studying membrane proteins. Using styrene-maleic acid (SMA) copolymer, membrane proteins can be extracted directly from prokaryotic and eukaryotic expression systems in the absence of detergents to preserve the protein structure and function better. Compared to membrane scaffold proteins (MSPs) nanodiscs, SMA nanodiscs also have the advantage of preserving proteins' nature by maintaining native lipids surrounded without introducing any heterologous proteins, which allows studies of protein structure and functions in a native-like environment.
Species:	Human
Expression Host:	HEK293 Cells
Accession:	P29274
Molecular Weight:	11.83 kDa (predicted); 41 kDa (reducing contition)

QC Testing

Biological Activity:	<ol style="list-style-type: none">1. Immobilized A2AR Protein-Nanodisc, Human, Recombinant (His & Flag) (Cat#TMPY-07099) at 5 µg/mL (100 µL/well) can bind Anti-HumanADORA2A Monoclonal Antibody, Mouse IgG2a, the EC50 is 2-6 ng/mL.
2. Loaded A2AR Protein-Nanodisc, Human, Recombinant (His & Flag) (Cat#TMPY-07099) on AR2G Biosensor via Anti-Fusion Protein Monoclonal antibody, Mouse IgG2a, can bind Anti-Human ADORA2A Monoclonal antibody, Mouse IgG2a with an affinity constant of 0.847 nM as determined in BLI assay (Sartorius Octet RED384) (Routinely tested).
3. Loaded Anti-Human ADORA2A Monoclonal antibody, Mouse IgG2a on ProA Biosensor, can bind A2AR Protein-Nanodisc, Human, Recombinant (His & Flag) (Cat#TMPY-07099) with an affinity constant of 2.34 nM as determined in BLI assay (Sartorius Octet RED384) (Routinely tested).
Purity:	≥ 95% as determined by SDS-PAGE.
Endotoxin:	< 1.0 EU/µg of the protein as determined by the LAL method.
Formulation:	Supplied as sterile 10mM Hepes, 50mM NaCl, pH 7.5. Please contact us for any concerns or special requirements. Please refer to the specific buffer information in the hardcopy of datasheet or the lot-specific COA.

Preparation and Storage

Stability & Storage:

Samples are stable for up to three months from date of receipt at -70°C. Store it under sterile conditions at -70°C or

lower. It is recommended that the protein be aliquoted for optimal storage. Avoid repeated freeze-thaw cycles.

Actual storage temperature shall be subject to the COA.

Shipping:

Proteins are shipped with blue ice.

Protein Background

Adenosine Receptor Subtype A2a (A2aR) is a G-protein coupled receptor that mediates adenosine (a potent immunosuppressor) signaling in leukocytes. A2aR has been implicated in neuroinflammation and synaptic plasticity-related processes. Signaling through A2aRs inhibits local and systemic inflammation and A2aR expression showed protective effects against non-alcoholic steatohepatitis (NASH) in the liver. A2aR deficiency triggers spontaneous inflammation and NASH-Hepatocellular Carcinoma (HCC) in mice while low A2aR gene expression in human HCC is associated with hepatic inflammation and poor survival. Reducing adenosine signaling via A2aR antagonism provides an alternative targeted strategy to modulate the number and efficacy of infiltrating effector T cells within the immunosuppressive tumor microenvironment. Co-blockade of A2aR signaling and CD73 reduced tumor initiation, growth, and metastasis.

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