

Product Information



Adenosine Receptor A_{2A} Blocking Peptide

Item No. 10092

Adenosine Receptor A_{2A} is a multi-pass membrane protein that is normally localized to the plasma membrane.¹ This receptor is part of the G protein-coupled receptor family that binds adenosine and keeps it in equilibrium inside and outside the cell. Along with establishing this equilibrium, A_{2A}R serves multiple functions and antagonists of this receptor have been targeted for the treatment of Parkinson's disease.^{2,3} This protein is primarily found in the striatum, but can also be found in immune cells and other tissues as well.² A_{2A}R is 412 amino acids long with an expected molecular weight of 45kDa. The receptor also has multiple glycosylation sites that explain the higher band shift seen in western blotting.¹

Laboratory Procedures

This vial contains 200 µg of peptide in 200 µl of TBS, pH 7.4, containing 0.1% BSA and 0.02% sodium azide. The Adenosine Receptor A_{2A} blocking peptide (human adenosine receptor A_{2A} amino acids 213-220) can be used in conjunction with Cayman's Adenosine Receptor A_{2A} Monoclonal Antibody (Catalog No. 10011454) to block protein-antibody complex formation during the immunochemical analysis of Adenosine Receptor A_{2A}.

Store this peptide solution at -20°C. It will be stable for at least one year. To block antibody/protein complex formation, the following procedure is recommended:

1. Mix the monoclonal antibody and blocking peptide together in a 1:5 (v/v) ratio in a microfuge tube. For example, mix 10 µl of antibody and 50 µl of peptide.*
2. Incubate for one hour at room temperature with occasional mixing.
3. Dilute the reagents to the final working antibody concentration and apply to the slide or membrane as usual.

*This is a recommended mixture. The minimum amount of peptide needed for complete blocking has not been precisely determined and may vary depending on the sample being analyzed. The amount of peptide required may need to be increased if sufficient blocking does not occur.

References

1. Piersen, C.E., True, C.D., and Well, J.N. A carboxyl-terminally truncated mutant and nonglycosylated A_{2A} adenosine receptors retain ligand binding. *Mol. Pharmacol.* **45**(5), 861-870 (1994).
2. Fredholm, B.B., Chern, Y., Franco, R., *et al.* Aspects of the general biology of adenosine A_{2A} signaling. *Prog. Neurobiol.* **83**, 263-276 (2007).
3. Ledent, C., Vaugeois, J.-M., Schiffmann, S.N., *et al.* Aggressiveness, hypoalgesia and high blood pressure in mice lacking the adenosine A_{2A} receptor. *Nature* **388**, 674-678 (1997).

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