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PRKAG3

Purified Mouse Monoclonal Antibody
Catalog # AO2517a

Product Information

Application	WB, IHC, ICC, E
Primary Accession	Q9UGI9
Reactivity	Human
Host	Mouse
Clonality	Monoclonal
Clone Names	2C7A7
Isotype	Mouse IgG1
Calculated MW	54258
Immunogen	Purified recombinant fragment of human PRKAG3 (AA: 9-151) expressed in E. Coli.
Formulation	Purified antibody in PBS with 0.05% sodium azide

Additional Information

Gene ID	53632
Other Names	AMPKG3
Dilution	WB~~ 1/500 - 1/2000 IHC~~1/200 - 1/1000 ICC~~ 1/200 - 1/1000 E~~ 1/10000
Storage	Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	PRKAG3 is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	PRKAG3
Synonyms	AMPKG3
Function	AMP/ATP-binding subunit of AMP-activated protein kinase (AMPK), an energy sensor protein kinase that plays a key role in regulating cellular energy metabolism (PubMed:14722619, PubMed:17878938, PubMed:24563466). In response to reduction of intracellular ATP levels, AMPK activates energy-producing pathways and inhibits energy-consuming processes: inhibits protein, carbohydrate and lipid biosynthesis, as well as cell growth and proliferation. AMPK acts via direct phosphorylation of metabolic

enzymes, and by longer-term effects via phosphorylation of transcription regulators. AMPK also acts as a regulator of cellular polarity by remodeling the actin cytoskeleton; probably by indirectly activating myosin. The AMPK gamma3 subunit is a non-catalytic subunit with a regulatory role in muscle energy metabolism (PubMed:17878938). It mediates binding to AMP, ADP and ATP, leading to AMPK activation or inhibition: AMP-binding results in allosteric activation of alpha catalytic subunit (PRKAA1 or PRKAA2) both by inducing phosphorylation and preventing dephosphorylation of catalytic subunits. ADP also stimulates phosphorylation, without stimulating already phosphorylated catalytic subunit. ATP promotes dephosphorylation of catalytic subunit, rendering the AMPK enzyme inactive.

Tissue Location Skeletal muscle, with weak expression in heart and pancreas

References

1.Diabetologia. 2010 Sep;53(9):1986-97.2.PLoS One. 2007 Sep 19;2(9):e903.

Images

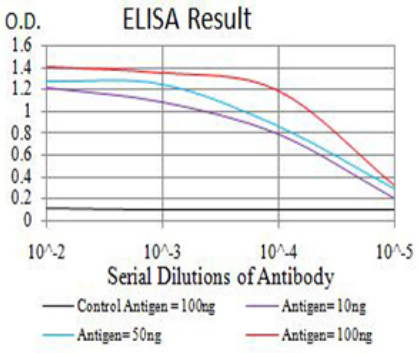


Figure 1:Black line: Control Antigen (100 ng);Purple line: Antigen (10ng); Blue line: Antigen (50 ng); Red line:Antigen (100 ng)

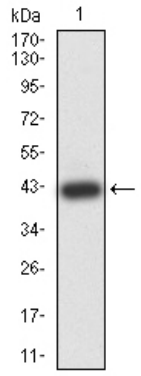


Figure 2:Western blot analysis using PRKAG3 mAb against human PRKAG3 (AA: 9-151) recombinant protein. (Expected MW is 41.1 kDa)

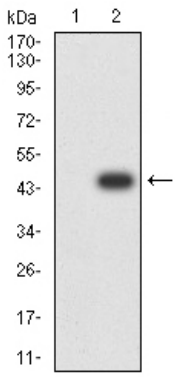


Figure 3:Western blot analysis using PRKAG3 mAb against HEK293 (1) and PRKAG3 (AA: 9-151)-hIgGFc transfected HEK293 (2) cell lysate.

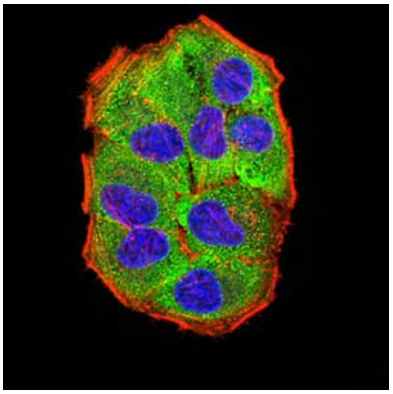


Figure 4:Immunofluorescence analysis of Hela cells using PRKAG3 mouse mAb (green). Blue: DRAQ5 fluorescent DNA dye. Red: Actin filaments have been labeled with Alexa Fluor- 555 phalloidin. Secondary antibody from Fisher (Cat#: 35503)

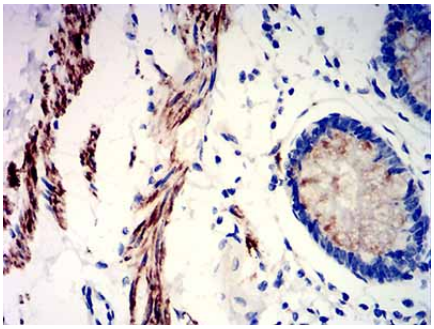


Figure 5:Immunohistochemical analysis of paraffin-embedded rectum tissues using PRKAG3 mouse mAb with DAB staining.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.