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PRKAG3
Purified Mouse Monoclonal Antibody
Catalog # AO2517a

Specification

PRKAG3 - Product Information

Application	**E, WB, ICC, IHC**
Primary Accession	Q9UGI9
Reactivity	**Human**
Host	**Mouse**
Clonality	**Monoclonal**
Isotype	**Mouse IgG1**
Calculated MW	**54.3kDa KDa**

Immunogen
Purified recombinant fragment of human PRKAG3 (AA: 9-151) expressed in E. Coli.

Formulation
Purified antibody in PBS with 0.05% sodium azide

PRKAG3 - Additional Information

Gene ID 53632

Other Names
AMPKG3

Dilution
E~~ 1/10000
WB~~ 1/500 - 1/2000
ICC~~ 1/200 - 1/1000
IHC~~1/200 - 1/1000

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.

PRKAG3 - 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

PRKAG3 - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

PRKAG3 - Images

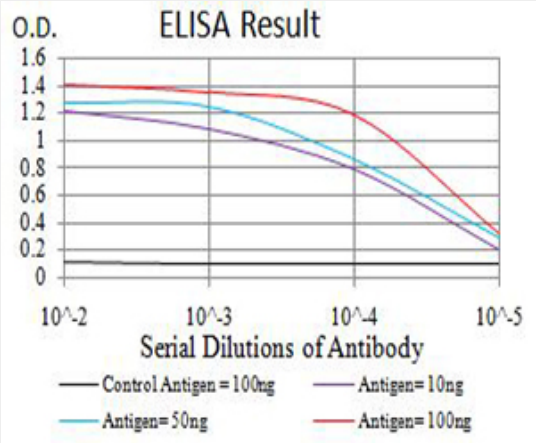

Figure 1:Black line: Control Antigen (100 ng);Purple line: Antigen (10ng); Blue line: Antigen (50 ng); Red line:Antigen (100 ng)

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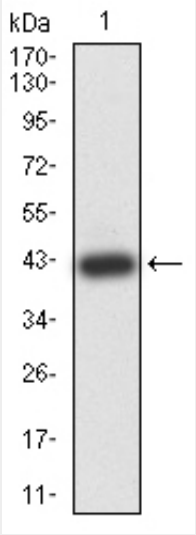

Figure 2:Western blot analysis using PRKAG3 mAb against human PRKAG3 (AA: 9-151) recombinant protein. (Expected MW is 41.1 kDa)

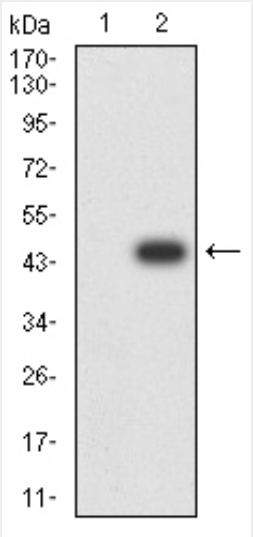

Figure 3:Western blot analysis using PRKAG3 mAb against HEK293 (1) and PRKAG3 (AA: 9-151)-hIgGFc transfected HEK293 (2) cell lysate.

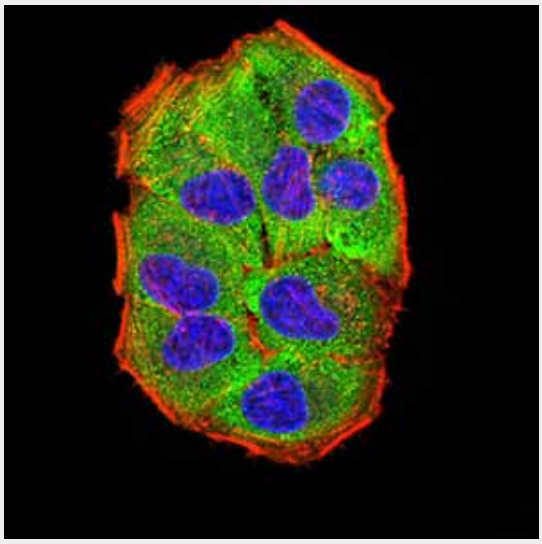

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Figure 4:Immunofluorescence analysis of Hela cells using PRKAG3 mouse mAb (green). Blue: DRAQ5 fluorescent DNA dye. Red: Actin filaments have been labeled with Alexa Fluor- 555 phalloidin. Secondary antibody from Fisher (Cat#: 35503)

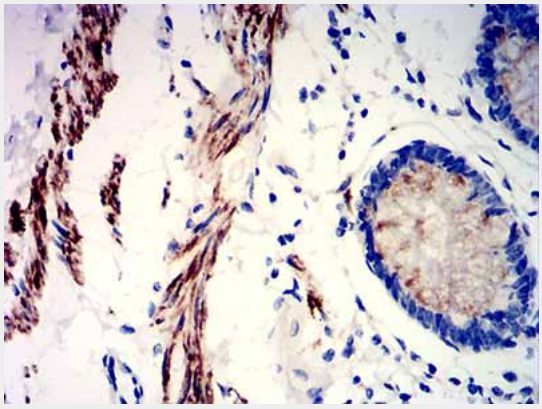

Figure 5:Immunohistochemical analysis of paraffin-embedded rectum tissues using PRKAG3 mouse mAb with DAB staining.

PRKAG3 - References

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