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PPARGC1A Antibody
Catalog # ASC11799

Specification

PPARGC1A Antibody - Product Information

Application	**WB**
Primary Accession	Q9UBK2
Other Accession	NP_037393, 10891
Reactivity	**Human, Mouse, Rat**
Host	**Rabbit**
Clonality	**Polyclonal**
Isotype	**IgG**
Calculated MW	**Predicted: 88 kDa** **Observed: 99 kDa KDa**
Application Notes	**PPARGC1A antibody can be used for detection of PPARGC1A by Western blot at 1 - 2 µg/ml. Antibody can also be used for Immunohistochemistry at 5 µg/mL. For Immunoflorescence start at 20 µg/mL.**

PPARGC1A Antibody - Additional Information

Gene ID **10891**

Target/Specificity
PPARGC1A antibody was raised against a 17 amino acid peptide near the amino terminus of human PPARGC1A.

The immunogen is located within amino acids 200 - 250 of PPARGC1A.

Reconstitution & Storage
PPARGC1A antibody can be stored at 4℃ for three months and -20℃, stable for up to one year.

Precautions
PPARGC1A Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

PPARGC1A Antibody - Protein Information

Name PPARGC1A

Function
Transcriptional coactivator for steroid receptors and nuclear receptors (PubMed:10713165, PubMed:20005308, PubMed:21376232). Greatly increases the transcriptional activity of PPARG and thyroid hormone receptor on the uncoupling protein promoter (PubMed:10713165, PubMed:<a href="http://www.uniprot.org/citations/20005308"

target="_blank">20005308, PubMed:21376232). Can regulate key mitochondrial genes that contribute to the program of adaptive thermogenesis (PubMed:10713165, PubMed:20005308, PubMed:21376232). Plays an essential role in metabolic reprogramming in response to dietary availability through coordination of the expression of a wide array of genes involved in glucose and fatty acid metabolism (PubMed:10713165, PubMed:20005308, PubMed:21376232). Acts as a key regulator of gluconeogenesis: stimulates hepatic gluconeogenesis by increasing the expression of gluconeogenic enzymes, and acting together with FOXO1 to promote the fasting gluconeogenic program (PubMed:16753578, PubMed:23142079). Induces the expression of PERM1 in the skeletal muscle in an ESRRA-dependent manner (PubMed:23836911). Also involved in the integration of the circadian rhythms and energy metabolism (By similarity). Required for oscillatory expression of clock genes, such as BMAL1 and NR1D1, through the coactivation of RORA and RORC, and metabolic genes, such as PDK4 and PEPCK (By similarity).

Cellular Location
[Isoform 1]: Nucleus. Nucleus, PML body {ECO:0000250|UniProtKB:O70343} [Isoform B4-8a]: Cytoplasm. Nucleus [Isoform 9]: Nucleus

Tissue Location
Heart, skeletal muscle, liver and kidney. Expressed at lower levels in brain and pancreas and at very low levels in the intestine and white adipose tissue. In skeletal muscle, levels were lower in obese than in lean subjects and fasting induced a 2-fold increase in levels in the skeletal muscle in obese subjects

PPARGC1A Antibody - 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

PPARGC1A Antibody - Images

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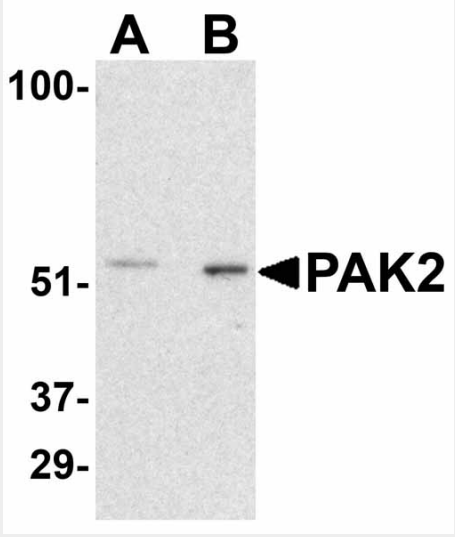

Western blot analysis of PAK2 in rat bladder tissue lysate with PAK2 antibody at (A) 0.5 and (B) 1 µg/mL.

PPARGC1A Antibody - Background

The peroxisome proliferator-activated receptor gamma coactivator 1-alpha (PPARGC1A), also known as LEM-6, is a transcriptional coactivator that regulates the genes involved in energy metabolism (1). PPARGC1A interacts with PPARgamma, which permits the interaction of PPARGC1A with multiple transcription factors. PPARGC1A can interact with, and regulate the activities of, cAMP response element binding protein (CREB) and nuclear respiratory factors (NRFs). It provides a direct link between external physiological stimuli and the regulation of mitochondrial biogenesis, and is a major factor that regulates muscle fiber type determination (2). PPARGC1A may be also involved in the development of obesity (3).

PPARGC1A Antibody - References

Tsuemi T and La Spada AR. PGC-1a at the intersection of bioenergetics regulation and neuron function: from Huntington’s disease to Parkinson’s disease and beyond. Prog. Neurobiol. 2012; 97:142-51.
Kang C and Li Ji L. Role of PGC-1a signaling in skeletal muscle health and disease. Ann. NY Acad. Sci. 2012; 1271:110-7.
Liu C and Lin JD. PGC-1 coactivators in the control of energy metabolism. Acta Biochim. Biophys. Sin. 2011; 43:248-57.