

## Product datasheet for **TA336725**

### **PDK4 Rabbit Polyclonal Antibody**

#### **Product data:**

Product Type:	Primary Antibodies
Applications:	ICC/IF, WB
Recommended Dilution:	Immunocytochemistry/ Immunofluorescence, Western Blot: 2 ug/ml
Reactivity:	Human, Mouse
Host:	Rabbit
Clonality:	Polyclonal
Immunogen:	Synthetic peptide made to an internal portion of the human PDK4 protein (within residues 100-150). [Swiss-Prot# Q16654]
Formulation:	PBS, 0.05% Sodium Azide. Store at 4C short term. Aliquot and store at -20C long term. Avoid freeze-thaw cycles.
Concentration:	lot specific
Purification:	Immunogen affinity purified
Conjugation:	Unconjugated
Storage:	Store at -20°C as received.
Stability:	Stable for 12 months from date of receipt.
Predicted Protein Size:	49 kDa
Gene Name:	pyruvate dehydrogenase kinase 4
Database Link:	<a href="#">NP_002603</a> <a href="#">Entrez Gene 27273 Mouse</a> <a href="#">Entrez Gene 5166 Human</a> <a href="#">Q16654</a>



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**Background:**

PK4 (pyruvate dehydrogenase kinase isoform 4) is expressed ubiquitously in the mitochondrion matrix of tissues with highest expression seen in liver, heart and skeletal muscles. PK4 is regulated by glucocorticoids, retinoic acid and insulin, and is found elevated with diabetes, fasting and other conditions where fatty acids act as energy source. Under starvation/diabetic conditions, enhanced glucocorticoids levels activate glucocorticoid receptor thereby recruiting p300/CBP coactivator complex to PK4 gene where it cooperatively interact with FOXO factors and activated RARs to make a stable transcriptional initiation complex responsible for PK4 activation. Insulin promotes inactivation and translocation of FOXO factors from nucleus to cytoplasm and thereby suppresses glucocorticoid-stimulated PK4 gene transcription. PK4 inhibits the mitochondrial pyruvate dehydrogenase complex (PDC) via its E1  $\alpha$  subunit's phosphorylation, thus contributing to glucose metabolism regulation. Insulin resistance is associated with PDC dysregulation in skeletal muscles and excessive insulin on the other hand downregulates PK4 expression. PK4 exerts conservation of glucose as well as three-carbon compounds such as lactate, alanine, pyruvate etc. which serve as substrates for gluconeogenesis and this conservation helps maintain euglycemia during starvation, however, exacerbates hyperglycemia in diabetes.

**Synonyms:**

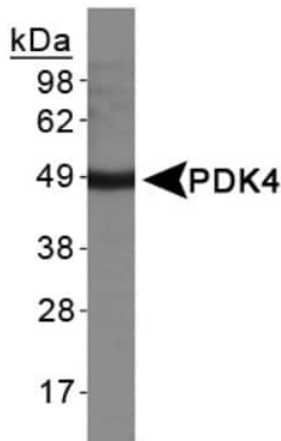
FLJ40832

**Note:**

This PK4 antibody is useful for Western blot, where a band is seen at ~49 kDa. This product is not recommended for ICC, as nonspecific nuclear staining was observed in HeLa cells.

**Protein Families:**

Druggable Genome, Protein Kinase

**Product images:**


Western Blot: PK4 Antibody TA336725 -  
Western Blot on human heart protein lysate.