10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

TORC2 Rabbit pAb

Catalog # AP99009

Product Information

Application	IHC-P, IHC-F, IF
Primary Accession	Q53ET0
Other Accession	Q53ET0
Reactivity	Rat, Human
Predicted	Pig, Mouse, Dog
Host	Rabbit
Clonality	Polyclonal
Calculated MW	73302
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from human CREB regulated transcription coactivator 2
Epitope Specificity	131-230/693
Isotype	IgG
Purity	affinity purified by Protein A
Buffer	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
SIMILARITY	Belongs to the TORC family.
SUBUNIT	Binds, as a tetramer, through its N-terminal region, with the bZIP domain of CREB1. 'Arg-314' in the bZIP domain of CREB1 is essential for this interaction. Interaction, via its C-terminal, with TAF4, enhances recruitment of TAF4 to CREB1. Interacts with PPP3CA/calcineurin alpha, SIK2 and 14-3-3 proteins, YWHAB and YWHAG. Interaction with the human T-cell leukemia virus type 1 (HTLV-1) Tax protein is essential for optimal transcription activation by Tax. Interaction with RFWD2/COP1 mediates nuclear export and degradation of CRTC2.
Post-translational modifications	Phosphorylation/dephosphorylation states of Ser-171 are required for regulating transduction of CREB activity. TORCs are inactive when phosphorylated, and active when dephosphorylated at this site. This primary site of phosphorylation, is regulated by cAMP and calcium levels and is dependent on the phosphorylation of SIKs (SIK1 and SIK2) by LKB1. Both insulin and AMPK increase this phosphorylation of CRTC2 while glucagon suppresses it. Phosphorylation at Ser-274 by MARK2 is induced under low glucose conditions and dephosphorylated in response to glucose influx. Phosphorylation at Ser-274 promotes interaction with 14-3-3 proteins and translocation to the cytoplasm.
Important Note	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
Background Descriptions	This gene encodes a member of the transducers of regulated cAMP response element-binding protein activity family of transcription coactivators. These proteins promote the transcription of genes targeted by the cAMP response element-binding protein, and therefore play an important role in many cellular processes. Under basal conditions the encoded protein is phosphorylated by AMP-activated protein kinase or the salt-inducible kinases and is sequestered in the cytoplasm. Upon activation by elevated cAMP or calcium, the encoded protein translocates to the nucleus and increases target gene expression. Single nucleotide polymorphisms in this gene may increase

the risk of type 2 diabetes. A pseudogene of this gene is located on the long arm of chromosome 5. [provided by RefSeq, Dec 2010].

Additional Information

Gene ID	200186
Other Names	TORC-2; TORC2; 4632407F12Rik; RGD1308903; CRTC2_HUMAN; CRTC2; Transducer of regulated cAMP response element-binding protein 2 (TORC-2 | Transducer of CREB protein 2); CRTC2_MOUSE; CRTC2_RAT; CREB regulated transcription coactivator 2
Dilution	IHC-P=1:100-500,IHC-F=1:100-500,IF=1:100-500,Flow-Cyt=1ug/Test
Storage	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.

Protein Information

Name	CRTC2
Synonyms	TORC2
Function	Transcriptional coactivator for CREB1 which activates transcription through both consensus and variant cAMP response element (CRE) sites. Acts as a coactivator, in the SIK/TORC signaling pathway, being active when dephosphorylated and acts independently of CREB1 'Ser-133' phosphorylation. Enhances the interaction of CREB1 with TAF4. Regulates gluconeogenesis as a component of the LKB1/AMPK/TORC2 signaling pathway. Regulates the expression of specific genes such as the steroidogenic gene, StAR. Potent coactivator of PPARGC1A and inducer of mitochondrial biogenesis in muscle cells. Also coactivator for TAX activation of the human T-cell leukemia virus type 1 (HTLV-1) long terminal repeats (LTR).
Cellular Location	Cytoplasm. Nucleus. Note=Translocated from the nucleus to the cytoplasm on interaction of the phosphorylated form with 14-3-3 protein (PubMed:15454081). In response to cAMP levels and glucagon, relocated to the nucleus (PubMed:15454081)
Tissue Location	Most abundantly expressed in the thymus. Present in both B and T-lymphocytes. Highly expressed in HEK293T cells and in insulinomas. High levels also in spleen, ovary, muscle and lung, with highest levels in muscle. Lower levels found in brain, colon, heart, kidney, prostate, small intestine and stomach. Weak expression in liver and pancreas.

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