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CRTC2 Antibody

Purified Mouse Monoclonal Antibody
Catalog # AO1472a

Product Information

Application	WB, IHC, FC, ICC, E
Primary Accession	Q53ET0
Reactivity	Human, Monkey
Host	Mouse
Clonality	Monoclonal
Clone Names	5B10
Isotype	IgG1
Calculated MW	73302
Description	Glucose homeostasis is regulated by hormones and cellular energy status. Elevations of blood glucose during feeding stimulate insulin release from pancreatic β-cells through a glucose sensing pathway. Feeding also stimulates release of gut hormones such as glucagon-like peptide-1 (GLP-1), which further induces insulin release, inhibits glucagon release and promotes β-cell viability. CREB-dependent transcription likely plays a role in both glucose sensing and GLP-1 signaling . The protein Torc2 (transducer of regulated CREB activity 2) functions as a CREB co-activator and is implicated in mediating the effects of these two pathways . In quiescent cells, Torc2 is phosphorylated at Ser171 and becomes sequestered in the cytoplasm via an interaction with 14-3-3 proteins. Glucose and gut hormones lead to the dephosphorylation of Torc2 and its dissociation from 14-3-3 proteins. Dephosphorylated Torc2 enters the nucleus to promote CREB-dependent transcription. Torc2 plays a key role in the regulation of hepatic gluconeogenic gene transcription in response to hormonal and energy signals during fasting.Tissue specificity: 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 .
Immunogen	Purified recombinant fragment of human CRTC2 expressed in E. Coli.
Formulation	Ascitic fluid containing 0.03% sodium azide.

Additional Information

Gene ID	200186
Other Names	CREB-regulated transcription coactivator 2, Transducer of regulated cAMP response element-binding protein 2, TORC-2, Transducer of CREB protein 2, CRTC2, TORC2
Dilution	WB~~1/500 - 1/2000 IHC~~1/200 - 1/1000 FC~~1/200 - 1/400 ICC~~N/A

E~~N/A

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 CRTC2 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

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.

References

1. Mol Syst Biol. 2007;3:89. 2. Nature. 2007 Sep 20;449(7160):366-9. 3. J Biol Chem. 2009 Mar 20;284(12):8033-41.

Images

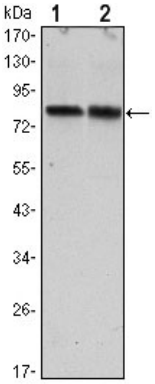


Figure 1: Western blot analysis using CRTC2 mouse mAb against Hela (1) and HEK293 (2) cell lysate.

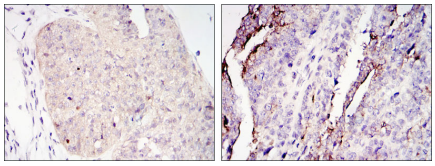


Figure 2: Immunohistochemical analysis of paraffin-embedded ovary tumour tissues (left) and lung cancer (right) using CRTC2 mouse mAb with DAB staining.

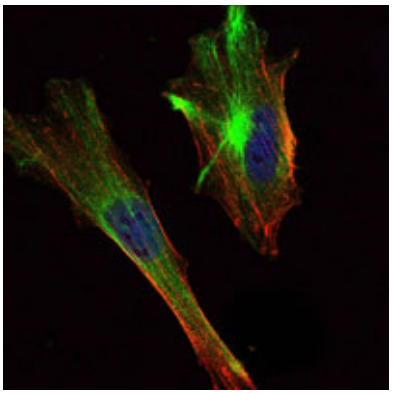


Figure 3: Immunofluorescence analysis of Hela cells using CRTC2 mouse mAb (green). Blue: DRAQ5 fluorescent DNA dye. Red: Actin filaments have been labeled with Alexa Fluor-555 phalloidin.

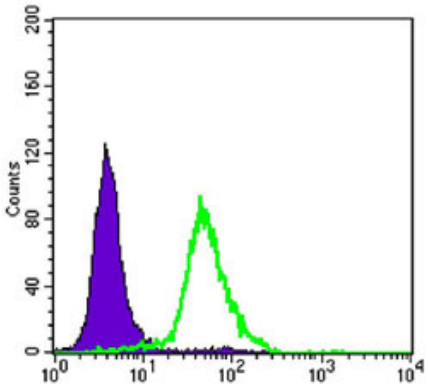


Figure 4: Flow cytometric analysis of Hela cells using CRTC2 mouse mAb (green) and negative control (purple).

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