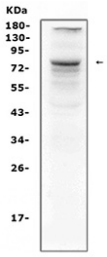
CRTC1 Antibody / CREB regulated transcription coactivator 1 (R31093)

Catalog No.	Formulation	Size
R31093	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

Availability	1-3 business days
Species Reactivity	Human
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Antigen affinity
Buffer	Lyophilized from 1X PBS with 2.5% BSA and 0.025% sodium azide/thimerosal
UniProt	Q6UUV9
Applications	Western Blot : 0.5-1ug/ml
Limitations	This CRTC1 antibody is available for research use only.



Western blot testing of human HeLa cell lysate with CRTC1 antibody. Predicted molecular weight ~67 kDa, routinely observed at 67-82 kDa.

Description

CRTC1 antibody is an important tool for studying transcriptional regulation, neuronal activity, and energy metabolism. The encoded protein, CREB regulated transcription coactivator 1 (CRTC1), acts as a potent coactivator of CREB, the cAMP response element-binding protein. By enhancing CREB-mediated transcription, CRTC1 regulates genes involved in survival, differentiation, synaptic plasticity, and metabolic homeostasis. Its activation depends on calcium and cAMP signaling, which promote nuclear translocation and interaction with CREB at promoter regions of target genes.

CRTC1 is expressed in multiple tissues but shows particularly high expression in the brain, where it supports synaptic

remodeling, long-term potentiation, and memory formation. Research demonstrates that CRTC1 plays a pivotal role in learning and adaptive neuronal responses by ensuring that CREB-dependent transcription is efficiently activated. Dysregulation of CRTC1 has been linked to neurological and psychiatric disorders, including Alzheimer disease, epilepsy, and depression, highlighting its importance in maintaining cognitive and emotional health.

Beyond the nervous system, CREB regulated transcription coactivator 1 contributes to metabolic control. In the liver, CRTC1 influences gluconeogenic gene expression and glucose balance, while in endocrine tissues, it helps coordinate hormonal responses. By integrating signals from second messengers such as calcium and cAMP, CRTC1 enables cells to adapt transcriptional outputs to environmental and nutritional conditions. Altered CRTC1 signaling has been implicated in obesity, diabetes, and metabolic syndromes, making it a protein of interest in metabolic disease research.

At the molecular level, CRTC1 is regulated through phosphorylation-dependent cytoplasmic retention. When signaling pathways activate calcineurin or inhibit salt-inducible kinases, CRTC1 is dephosphorylated, allowing nuclear entry and association with CREB. This dynamic regulation ensures that CREB target genes are expressed in a stimulus-dependent manner. The ability of CRTC1 to function as a rapid transcriptional switch underscores its role as a key signaling integrator.

The CRTC1 antibody is widely used in western blotting, immunohistochemistry, immunofluorescence, and flow cytometry to evaluate protein expression, localization, and stimulus-dependent changes. These approaches support investigations into neuronal plasticity, energy metabolism, and disease mechanisms. For researchers focused on CREB signaling, brain function, or metabolic regulation, the CRTC1 antibody provides a specific and reliable detection reagent. NSJ Bioreagents supplies validated antibodies that ensure reproducibility and accuracy in advanced molecular studies.

Application Notes

The stated application concentrations are suggested starting amounts. Titration of the CRTC1 antibody may be required due to differences in protocols and secondary/substrate sensitivity.

Immunogen

An amino acid sequence from the C-terminus of human CRTC1 (EQQMAARQANALSHQL) was used as the immunogen for this CRTC1 antibody.

Storage

After reconstitution, the CRTC1 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.