

**Datasheet for 600-401-936****MECT1 Antibody****Overview**

|                      |                                                  |
|----------------------|--------------------------------------------------|
| <b>Description:</b>  | Anti-MECT1 (RABBIT) Antibody - 600-401-936       |
| <b>Item No.:</b>     | 600-401-936                                      |
| <b>Size:</b>         | 100 µg                                           |
| <b>Applications:</b> | ELISA, WB, ChIP, IHC                             |
| <b>Reactivity:</b>   | Human, Mouse, Rat, Bovine, Pufferfish, Zebrafish |
| <b>Host Species:</b> | Rabbit                                           |

**Product Details****Background:**

This antibody is designed, produced, and validated as part of a collaboration between Rockland and the National Cancer Institute (NCI) and is suitable for Cancer, Immunology and Nuclear Signaling research. MECT1 (also known as Mucoepidermoid Carcinoma Translocated 1) is a nuclear protein that functions as a transcriptional coactivator for CREB1, which activates transcription through both consensus and variant cAMP response element (CRE) sites. It acts as a coactivator, in the SIK/TORC signaling pathway, being active when dephosphorylated and acts independently of CREB1 Ser-133 phosphorylation. MECT1 enhances the interaction of CREB1 with TAF4. It regulates the expression of specific CREB-activated genes such as the steroidogenic gene, StAR. Mect1 is a potent coactivator of PGC1alpha and inducer of mitochondrial biogenesis in muscle cells. MECT1 is also a coactivator for TAX activation of the human T-cell leukemia virus type 1 (HTLV-1) long terminal repeats (LTR). In the hippocampus, it is involved in late-phase long-term potentiation (L-LTP) maintenance at the Schaffer collateral-CA1 synapses. MECT1 may be required for dendritic growth of developing cortical neurons (By similarity). In concert with SIK1, MECT1 regulates the light-induced entrainment of the circadian clock. In response to light stimulus, it coactivates the CREB-mediated transcription of PER1 which plays an important role in the photic entrainment of the circadian clock. Therefore, it has been found to be important for energy balance and reproduction. Anti-MECT1 (CRTC1) Antibody is useful for researchers interested in glucose energy metabolism, circadian rhythms, and hormone research.

**Synonyms:**

rabbit anti-MECT1 antibody, MECT-1, MECT 1, TORC1, TORC-1, TORC 1, WAMTP1, WAMTP-1, CRTC1, CRTC-1, CREB-regulated transcription coactivator 1, Mucoepidermoid carcinoma translocated protein 1, Transducer of regulated cAMP response element-binding protein 1, Transducer of CREB protein 1

**Host Species:**

Rabbit

|                   |            |
|-------------------|------------|
| <b>Clonality:</b> | Polyclonal |
| <b>Format:</b>    | IgG        |

## Target Details

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                              |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Gene Name:</b>          | CRTC1                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Reactivity:</b>         | Human, Mouse, Rat, Bovine, Pufferfish, Zebrafish                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Immunogen Type:</b>     | Conjugated Peptide                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Immunogen:</b>          | This affinity purified antibody was prepared from whole rabbit serum produced by repeated immunizations with a synthetic peptide corresponding to amino acids 19-34 of human MECT1 protein.                                                                                                                                                                                                                                  |
| <b>Purity/Specificity:</b> | This affinity-purified antibody is directed against human MECT1 protein. The product was affinity purified from monospecific antiserum by immunoaffinity purification. A BLAST analysis was used to suggest cross reactivity with MECT1 protein from human, mouse, rat, zebrafish, pufferfish and bovine based on 100% homology with the immunizing sequence. Reactivity against homologues from other sources is not known. |
| <b>Relevant Links:</b>     | <ul style="list-style-type: none"><li>• <a href="#">NCBI - 148596965</a></li><li>• <a href="#">UniProtKB - Q6UUV9</a></li><li>• <a href="#">GenelD - 23373</a></li></ul>                                                                                                                                                                                                                                                     |

## Application Details

|                                |                                                                                                                                                                                                                                                                                                                                                                   |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Tested Applications:</b>    | ELISA, WB                                                                                                                                                                                                                                                                                                                                                         |
| <b>Suggested Applications:</b> | ChIP, IHC (Based on references)                                                                                                                                                                                                                                                                                                                                   |
| <b>Application Note:</b>       | This affinity-purified antibody has been tested for use in ELISA and western blot. Specific conditions for reactivity should be optimized by the end user. Expect a band approximately 80-95 kDa in size corresponding to MECT1 protein by western blotting in the appropriate cell lysate or extract. This antibody is will react with isoform 1 and 2 of MECT1. |
| <b>Assay Dilutions:</b>        | All assays should be optimized by the user. Recommended dilutions (if any) may be listed below.                                                                                                                                                                                                                                                                   |
| <b>ELISA:</b>                  | 1:10,000 - 1:40,000                                                                                                                                                                                                                                                                                                                                               |
| <b>WB:</b>                     | 1:500 - 1:2,000                                                                                                                                                                                                                                                                                                                                                   |

## Formulation

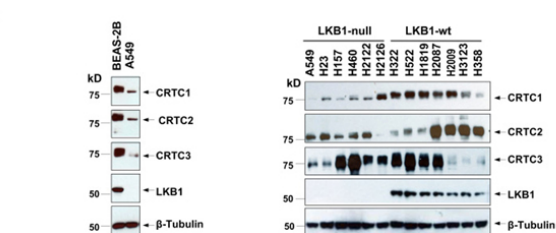
|                        |                           |
|------------------------|---------------------------|
| <b>Physical State:</b> | Liquid (sterile filtered) |
|------------------------|---------------------------|

|                |                                                            |
|----------------|------------------------------------------------------------|
| Concentration: | 1.0 mg/mL by UV absorbance at 280 nm                       |
| Buffer:        | 0.02 M Potassium Phosphate, 0.15 M Sodium Chloride, pH 7.2 |
| Preservative:  | 0.01% (w/v) Sodium Azide                                   |
| Stabilizer:    | None                                                       |

### Shipping & Handling

|                     |                                                                                                                                                                                                                                                                                                                                               |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Shipping Condition: | Dry Ice                                                                                                                                                                                                                                                                                                                                       |
| Storage Condition:  | Store vial at -20° C prior to opening. Aliquot contents and freeze at -20° C or below for extended storage. Avoid cycles of freezing and thawing. Centrifuge product if not completely clear after standing at room temperature. This product is stable for several weeks at 4° C as an undiluted liquid. Dilute only prior to immediate use. |
| Expiration:         | Expiration date is one (1) year from date of receipt.                                                                                                                                                                                                                                                                                         |

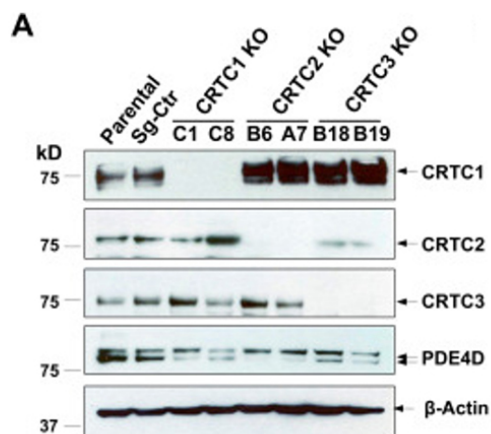
### Images



#### Western Blot

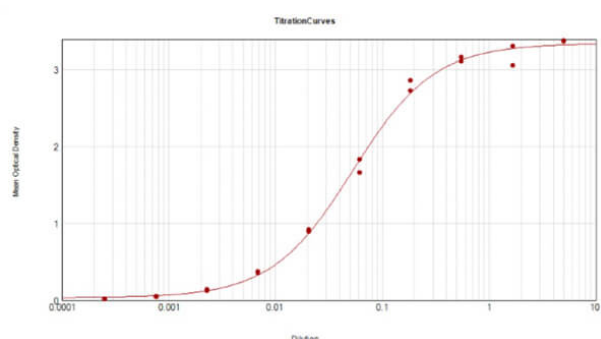
B) The protein levels of CRTC1 (MECT1 p/n 600-401-936), CRTC2, CRTC3, and LKB1 were detected by western blotting. Blotting with anti-β-Tubulin was used as a loading control.

Fig 1. PMID: 34142658



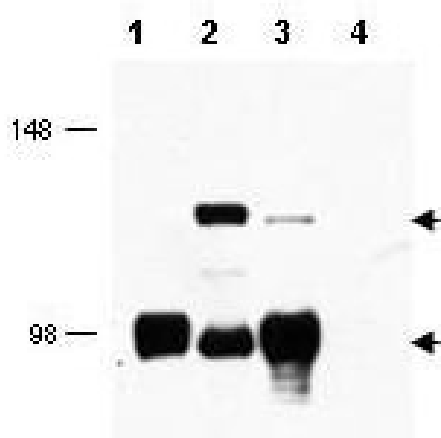
### Western Blot

(A) Western blot analysis of endogenous CRTC proteins in parental A549 cells, A549 cells stably transduced with non-targeting sgRNA, and two independent single knockout clones for each CRTC1 (MECT1 p/n 600-401-936), CRTC2, or CRTC3. The protein level of a CREB target gene, PDE4D was also detected. Blotting with anti-β-ACTIN was used as a loading control. Fig 2. PMID: 34142658



### ELISA

ELISA Results of Rabbit Anti-MECT1 Antibody tested against BSA-conjugated peptide of immunizing peptide. Each well was coated in duplicate with 0.1μg of conjugate. The working dilution is 1: 19,000. The starting dilution of antibody was 5μg/ml and the X-axis represents the Log10 of a 3-fold dilution. This titration is a 4-parameter curve fit where the IC50 is defined as the titer of the antibody. Assay performed using HRP Conjugate stabilizer (p/n MB-076), Goat Anti-Rabbit HRP conjugated (p/n 611-103-122) and TMB substrate (p/n TME-1000).



### Western Blot

Western blot using Rockland's affinity purified anti-MECT1 antibody shows detection of endogenous MECT1 (lower arrowhead) and MECT1-MAML2 fusion protein (top arrowhead) in cell lysates. Lane 1 contains lysate from cells expressing MECT1 only. Lane 2 contains lysate from cells transfected with fusion protein. Lane 3 contains lysate from cells strongly expressing MECT1 and weakly expressing the fusion protein. Lane 4 contains lysate from control cells. After SDS-PAGE and transfer, the membrane was probed with the primary antibody diluted to 1:1,000. Personal Communication, Frederick Kaye, CCR-NCI, Bethesda, MD.

## References

- Zhou X et al. Dependency of human and murine LKB1-inactivated lung cancer on aberrant CRTC-CREB activation. *Elife*. (2021)
- Gu Y et al. Altered LKB1/CREB-regulated transcription co-activator (CRTC) signaling axis promotes esophageal cancer cell migration and invasion. *Oncogene*. (2012)

## Disclaimer

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