

CTMP (H-10): sc-390353

BACKGROUND

The Akt family of protein kinases (also designated PKB) play a role in Insulin signaling, cellular survival and transformation. Genetic alterations resulting in an aberrant activation of the phosphoinositol-3-kinase (PI3K)/Akt signaling pathway frequently occur in glioblastomas. Such factors include phosphatase and tensin homolog (PTEN) mutation, epidermal growth factor receptor (EGFR) amplification and rearrangement, and carboxy-terminal modulator protein (CTMP) hypermethylation. CTMP binds to the C-terminal regulatory domain of Akt and acts as a negative regulator. CTMP inhibits phosphorylation of Akt on serine 473 and threonine 308, thereby reducing its activity. Decreased expression of CTMP by hypermethylation of its promoter has been linked to the pathogenesis of glioblastomas.

REFERENCES

1. Maira, S.M., et al. 2001. Carboxyl-terminal modulator protein (CTMP), a negative regulator of PKB/Akt and v-Akt at the plasma membrane. *Science* 294: 374-380.
2. Knobbe, C.B., et al. 2004. Hypermethylation and transcriptional down-regulation of the carboxyl-terminal modulator protein gene in glioblastomas. *J. Natl. Cancer Inst.* 96: 483-486.
3. Knobbe, C.B., et al. 2005. Genetic alteration and expression of the phosphoinositol-3-kinase/Akt pathway genes PIK3CA and PIKE in human glioblastomas. *Neuropathol. Appl. Neurobiol.* 31: 486-490.
4. Chae, K.S., et al. 2005. Akt activation is necessary for growth factor-induced trafficking of functional K_{Ca} channels in developing parasympathetic neurons. *J. Neurophysiol.* 93: 1174-1182.

CHROMOSOMAL LOCATION

Genetic locus: THEM4 (human) mapping to 1q21.3.

SOURCE

CTMP (H-10) is a mouse monoclonal antibody raised against amino acids 1-137 mapping at the N-terminus of CTMP of human origin.

PRODUCT

Each vial contains 200 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

CTMP (H-10) is available conjugated to agarose (sc-390353 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-390353 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-390353 PE), fluorescein (sc-390353 FITC), Alexa Fluor® 488 (sc-390353 AF488), Alexa Fluor® 546 (sc-390353 AF546), Alexa Fluor® 594 (sc-390353 AF594) or Alexa Fluor® 647 (sc-390353 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-390353 AF680) or Alexa Fluor® 790 (sc-390353 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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RESEARCH USE

For research use only, not for use in diagnostic procedures.

APPLICATIONS

CTMP (H-10) is recommended for detection of CTMP of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for CTMP siRNA (h): sc-60469, CTMP shRNA Plasmid (h): sc-60469-SH and CTMP shRNA (h) Lentiviral Particles: sc-60469-V.

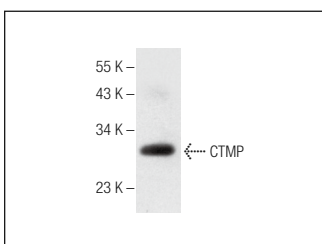
Molecular Weight of CTMP: 26 kDa.

Positive Controls: human skeletal muscle extract: sc-363776.

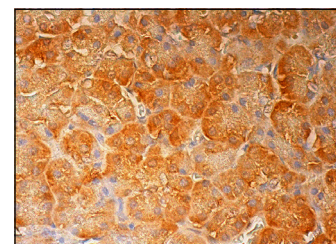
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgG κ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



CTMP (H-10): sc-390353. Western blot analysis of CTMP expression in human skeletal muscle tissue extract.



CTMP (H-10): sc-390353. Immunoperoxidase staining of formalin fixed, paraffin-embedded human pancreas tissue showing cytoplasmic staining of exocrine glandular cells.

SELECT PRODUCT CITATIONS

1. Shin, N., et al. 2017. Astrocytic expression of CTMP following an excitotoxic lesion in the mouse hippocampus. *Exp. Neurobiol.* 26: 25-32.
2. Zhu, M., et al. 2017. NDRG4 promotes myogenesis via Akt/CREB activation. *Oncotarget* 8: 101720-101734.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.