



CTMP (h): 293T Lysate: sc-117060

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 downregulation 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.
5. Williams, D.L., et al. 2006. Modulation of the phosphoinositide 3-kinase signaling pathway alters host response to sepsis, inflammation, and ischemia/reperfusion injury. *Shock* 25: 432-439.
6. Martelli, A.M., et al. 2006. Intranuclear 3'-phosphoinositide metabolism and Akt signaling: new mechanisms for tumorigenesis and protection against apoptosis? *Cell. Signal.* 18: 1101-1107.

CHROMOSOMAL LOCATION

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

PRODUCT

CTMP (h): 293T Lysate represents a lysate of human CTMP transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

APPLICATIONS

CTMP (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive CTMP antibodies. Recommended use: 10-20 µl per lane.

Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.