SANTA CRUZ BIOTECHNOLOGY, INC.

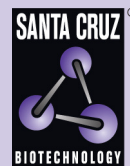# CDKL5 (C-20): sc-70239

BACKGROUND

Cell cycle progression is controlled in part by a family of cyclin proteins and cyclin-dependent kinases (Cdks). Cdk proteins work in concert with the cyclins to phosphorylate key substrates involved in each phase of cell cycle progression. Another family of proteins, Cdk inhibitors, also plays a role in regulating the cell cycle by binding to cyclin-Cdk complexes and modulating their activity. CDKL5 (cyclin-dependent kinase-like 5) is a 1,030 amino acid protein that belongs to the CMGC Ser/Thr protein kinase family. Expressed in brain, lung, kidney, prostate, ovary, placenta, pancreas and testis, CDKL5 is thought to play a role in cell cycle regulation. Defects in CDKL5 are a cause of several disorders, such as X-linked infantile spasm syndrome and Rett syndrome.

REFERENCES

1. Tao, J., et al. 2004. Mutations in the X-linked cyclin-dependent kinase-like 5 (CDKL5/STK9) gene are associated with severe neurodevelopmental retardation. Am. J. Hum. Genet. 75: 1149-1154.

2. Buoni, S., et al. 2006. Myoclonic encephalopathy in the CDKL5 gene mutation. Clin. Neurophysiol. 117: 223-227.

3. Nectoux, J., et al. 2006. Maternal origin of a novel C-terminal truncation mutation in CDKL5 causing a severe atypical form of Rett syndrome. Clin. Genet. 70: 29-33.

4. Bertani, I., et al. 2006. Functional consequences of mutations in CDKL5, an X-linked gene involved in infantile spasms and mental retardation. J. Biol. Chem. 281: 32048-32056.

5. Archer, H.L., et al. 2006. CDKL5 mutations cause infantile spasms, early onset seizures, and severe mental retardation in female patients. J. Med. Genet. 43: 729-734.

6. Van Esch, H., et al. 2007. Encephalopathy and bilateral cataract in a boy with an interstitial deletion of Xp22 comprising the CDKL5 and NHS genes. Am. J. Med. Genet. A 143: 364-369.

CHROMOSOMAL LOCATION

Genetic locus: CDKL5 (human) mapping to Xp22.13; Cdkl5 (mouse) mapping to X F4.

SOURCE

CDKL5 (C-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of CDKL5 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-70239 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

CDKL5 (C-20) is recommended for detection of CDKL5 of mouse and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

CDKL5 (C-20) is also recommended for detection of CDKL5 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for CDKL5 siRNA (h): sc-72849, CDKL5 siRNA (m): sc-72850, CDKL5 shRNA Plasmid (h): sc-72849-SH, CDKL5 shRNA Plasmid (m): sc-72850-SH, CDKL5 shRNA (h) Lentiviral Particles: sc-72849-V and CDKL5 shRNA (m) Lentiviral Particles: sc-72850-V.

Molecular Weight of CDKL5: 116 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

RESEARCH USE

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

PROTOCOLS

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