

CDKAL1 (S-13): sc-135459

BACKGROUND

Cell cycle progression is controlled, in part, by a family of cyclin dependent kinases (Cdks) that work to phosphorylate key substrates involved in each phase of cell cycle progression. Cdks are the catalytic subunits of serine/threonine protein kinases, a large family of proteins that act as regulators of the eukaryotic cell cycle. CDKAL1 (Cdk5 regulatory subunit associated protein 1-like 1) is a 579 amino acid single-pass membrane protein that contains one TRAM domain and is similar to Cdk5 regulatory subunit associated proteins (CDK5RAPs). Expressed in pancreas, brain and skeletal muscle, CDKAL1 uses iron as a cofactor and is involved in glucose-stimulated Insulin secretion. Defects in the gene encoding CDKAL1 impair Insulin secretion and are associated with the development of type 2 diabetes. Multiple isoforms of CDKAL1 exist due to alternative splicing events.

REFERENCES

1. Pascoe, L., et al. 2007. Common variants of the novel type 2 diabetes genes CDKAL1 and HHEX/IDE are associated with decreased pancreatic β -cell function. *Diabetes* 56: 3101-3104.
2. Steinthorsdottir, V., et al. 2007. A variant in CDKAL1 influences Insulin response and risk of type 2 diabetes. *Nat. Genet.* 39: 770-775.
3. Online Mendelian Inheritance in Man, OMIM[™]. 2007. Johns Hopkins University, Baltimore, MD. MIM Number: 611259. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
4. Ruchat, S.M., et al. 2008. Association between Insulin secretion, Insulin sensitivity and type 2 diabetes susceptibility variants identified in genome-wide association studies. *Acta Diabetol.* 46: 217-226.
5. van Hoek, M., et al. 2008. Predicting type 2 diabetes based on polymorphisms from genome-wide association studies: a population-based study. *Diabetes* 57: 3122-3128.
6. Kirchhoff, K., et al. 2008. Polymorphisms in the TCF7L2, CDKAL1 and SLC30A8 genes are associated with impaired proinsulin conversion. *Diabetologia* 51: 597-601.

CHROMOSOMAL LOCATION

Genetic locus: CDKAL1 (human) mapping to 6p22.3; Cdkal1 (mouse) mapping to 13 A3.1.

SOURCE

CDKAL1 (S-13) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping within an internal region of CDKAL1 of human origin.

PRODUCT

Each vial contains 100 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-135459 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

RESEARCH USE

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

APPLICATIONS

CDKAL1 (S-13) is recommended for detection of CDKAL1 isoforms 1 and 2 of mouse and human origin by Western Blotting (starting dilution 1:100, dilution range 1:50-1:500), immunofluorescence (starting dilution 1:25, dilution range 1:25-1:250) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); non cross-reactive with CDKAL1 isoform 3.

CDKAL1 (S-13) is also recommended for detection of CDKAL1 isoforms 1 and 2 in additional species, including equine, canine, bovine and avian.

Suitable for use as control antibody for CDKAL1 siRNA (h): sc-95524, CDKAL1 siRNA (m): sc-142228, CDKAL1 shRNA Plasmid (h): sc-95524-SH, CDKAL1 shRNA Plasmid (m): sc-142228-SH, CDKAL1 shRNA (h) Lentiviral Particles: sc-95524-V and CDKAL1 shRNA (m) Lentiviral Particles: sc-142228-V.

Molecular Weight of CDKAL1: 65 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker[™] compatible goat anti-rabbit IgG-HRP: sc-2030 (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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz[™] Mounting Medium: sc-24941.

STORAGE

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

PROTOCOLS

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


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 Satisfaction
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Try **CDKAL1 (E-9): sc-393447**, our highly recommended monoclonal alternative to CDKAL1 (S-13).