

GAK (R-360): sc-7864

BACKGROUND

Cyclins are the regulatory subunits of Cdc2 p34 and related cyclin-dependent kinases (Cdks) which play critical roles in the control of cell cycle progression. The catalytic subunit for cyclin A and B is Cdc2 p34 kinase. The Cdc2-cyclin B complex controls the G₂ to M transition whereas Cdc2-cyclin A regulates S phase progression. The G₁ to S transition, however, appears to be controlled by the G₁ cyclins. Cyclin D1 accumulates during G₁ and associates with Cdk2, Cdk4 and Cdk5. Cyclin E and Cdk2 interact during the G₁ to S transition. Cyclin G contains a typical N terminal cyclin box and a carboxy terminal domain sequence homologous to the tyrosine phosphorylation site of the epidermal growth factor receptor. Cyclin G expression is induced within three hours after growth stimulation and remains elevated with no apparent cell cycle dependency. A serine/threonine kinase, designated GAK for cyclin G associated kinase, has been identified. GAK has been shown to bind directly to cyclin G and to co-immunoprecipitate with Cdk5, which also associates with cyclin G.

REFERENCES

1. Pines, J. and Hunter, T. 1990. Human cyclin A is adenovirus E1A-associated protein p60 and behaves differently from cyclin B. *Nature* 346: 760-763.
2. Fang, F. and Newport, J.W. 1991. Evidence that the G₁/S and G₂/M transitions are controlled by different Cdc2 proteins in higher eukaryotes. *Cell* 66: 731-742.

CHROMOSOMAL LOCATION

Genetic locus: GAK (human) mapping to 4p16.3; Gak (mouse) mapping to 5 F.

SOURCE

GAK (R-360) is a rabbit polyclonal antibody raised against amino acids 1-360 of GAK of rat origin.

PRODUCT

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

APPLICATIONS

GAK (R-360) is recommended for detection of GAK of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg 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 GAK siRNA (h): sc-43791, GAK siRNA (m): sc-63301, GAK shRNA Plasmid (h): sc-43791-SH, GAK shRNA Plasmid (m): sc-63301-SH, GAK shRNA (h) Lentiviral Particles: sc-43791-V and GAK shRNA (m) Lentiviral Particles: sc-63301-V.

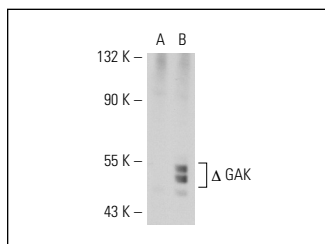
Molecular Weight of GAK: 144 kDa.

Positive Controls: GAK (h2): 293T Lysate: sc-111171.

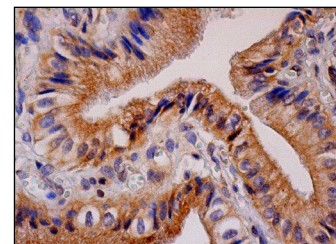
RECOMMENDED SECONDARY REAGENTS

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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. 4) Immunohistochemistry: use ImmunoCruz™: sc-2051 or ABC: sc-2018 rabbit IgG Staining Systems.

DATA



GAK (R-360): sc-7864. Western blot analysis of GAK expression in non-transfected: sc-117752 (A) and truncated human GAK transfected: sc-111171 (B) 293T whole cell lysates.



GAK (R-360): sc-7864. Immunoperoxidase staining of formalin fixed, paraffin-embedded human gall bladder tissue showing cytoplasmic staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Lin, Y., et al. 2007. Cyclin G associated kinase interacts with interleukin 12 receptor β2 and suppresses interleukin 12 induced IFN-γ production. *FEBS Lett.* 581: 5151-5157.
2. Bellei, B., et al. 2014. Pyridinyl imidazole compounds interfere with melanosomes sorting through the inhibition of cyclin G-associated Kinase, a regulator of cathepsins maturation. *Cell. Signal.* 26: 716-723.

STORAGE

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

RESEARCH USE

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



Try **GAK (D-2): sc-137053** or **GAK (G-10): sc-137066**, our highly recommended monoclonal alternatives to GAK (R-360).