SANTA CRUZ BIOTECHNOLOGY, INC.

cyclin G1 (F-5): sc-8016

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 G_2 to M transition whereas Cdc2-cyclin A regulates S phase progression. The G_1 to S transition, however, appears to be controlled by the G_1 cyclins. Cyclin D1 accumulates during G_1 and associates with Cdk2, Cdk4 and Cdk5. Cyclin E and Cdk2 interact during the G_1 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. Cyclin G2 shares 53% amino acid sequence identity with cyclin G1. Peak expression of cyclin G2 is seen in late S phase, as opposed to cyclin G1 expression, which is constitutive.

CHROMOSOMAL LOCATION

Genetic locus: CCNG1 (human) mapping to 5q34.

SOURCE

cyclin G1 (F-5) is a mouse monoclonal antibody raised against amino acids 1-46 mapping at the N-terminus of cyclin G1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

cyclin G1 (F-5) is available conjugated to agarose (sc-8016 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-8016 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-8016 PE), fluorescein (sc-8016 FITC), Alexa Fluor® 488 (sc-8016 AF488), Alexa Fluor® 546 (sc-8016 AF546), Alexa Fluor® 594 (sc-8016 AF594) or Alexa Fluor® 647 (sc-8016 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-8016 AF680) or Alexa Fluor® 790 (sc-8016 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

cyclin G1 (F-5) is recommended for detection of cyclin G1 of 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 cyclin G1 siRNA (h): sc-35139, cyclin G1 shRNA Plasmid (h): sc-35139-SH and cyclin G1 shRNA (h) Lentiviral Particles: sc-35139-V.

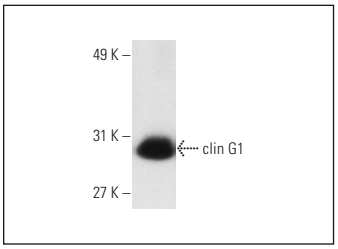
Molecular Weight of cyclin G1: 34 kDa.

Positive Controls: Jurkat nuclear extract: sc-2132, HeLa nuclear extract: sc-2120 or HeLa whole cell lysate: sc-2200.

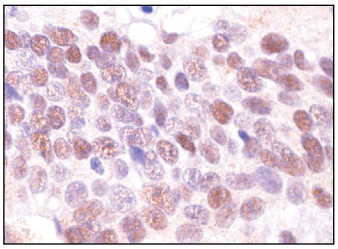
STORAGE

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

DATA



cyclin G1 (F-5): sc-8016. Western blot analysis of human recombinant cyclin G1.



cyclin G1 (F-5): sc-8016. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human colon tumor showing nuclear staining.

SELECT PRODUCT CITATIONS

1. Fornari, F., et al. 2009. MiR-122/cyclin G1 interaction modulates p53 activity and affects doxorubicin sensitivity of human hepatocarcinoma cells. Cancer Res. 69: 5761-5767.
2. Li, Y., et al. 2011. ShRNA-targeted centromere protein A inhibits hepatocellular carcinoma growth. PLoS ONE 6: e17794.
3. Ye, X.X., et al. 2012. The expression of cyclin G in nasopharyngeal carcinoma and its significance. Clin. Exp. Med. 12: 21-24.
4. Hao, J., et al. 2013. Inhibition of α interferon (IFN-α)-induced microRNA-122 negatively affects the anti-hepatitis B virus efficiency of IFN-α. J. Virol. 87: 137-147.
5. Rivera Vargas, T., et al. 2014. Post-transcriptional regulation of cyclins D1, D3 and G1 and proliferation of human cancer cells depend on IMP-3 nuclear localization. Oncogene 33: 2866-2875.
6. Giovannini, C., et al. 2014. Suppression of p53 by Notch3 is mediated by cyclin G1 and sustained by MDM2 and miR-221 axis in hepatocellular carcinoma. Oncotarget 5: 10607-10620.
7. Li, X., et al. 2015. Methylation-associated Has-miR-9 deregulation in paclitaxel- resistant epithelial ovarian carcinoma. BMC Cancer 15: 509.
8. Xu, L., et al. 2019. Silencing of heat shock protein 27 increases the radiosensitivity of non-small cell lung carcinoma cells. Mol. Med. Rep. 20: 613-621.
9. Wu, B., et al. 2019. Upregulation of microRNA-23b-3p induced by farnesoid X receptor regulates the proliferation and apoptosis of osteosarcoma cells. J. Orthop. Surg. Res. 14: 398.
10. Zhu, F., et al. 2021. Tubular Numb promotes renal interstitial fibrosis via modulating HIF-1α protein stability. Biochim. Biophys. Acta Mol. Basis Dis. 1867: 166081.

RESEARCH USE

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