SANTA CRUZ BIOTECHNOLOGY, INC.

PCNA (F-2): sc-25280

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The proliferating cell nuclear antigen (PCNA), a protein synthesized in early G_1 and S phases of the cell cycle, functions in cell cycle progression, DNA replication and DNA repair. In early S phase, PCNA exhibits granular distribution and is absent from the nucleoli; however, in late S phase, it relocates to the nucleoli. PCNA exists in two basic forms: one involved in ongoing DNA replication, which localizes specifically to the nucleus, and a second, soluble form, not implicated in constant synthesis. Interestingly, the latter form degrades in the presence of organic solvents, rendering it undetectable by histological methods in tissues using organic fixatives, and thus also providing a method of visualizing only the synthesizing form.

CHROMOSOMAL LOCATION

Genetic locus: PCNA (human) mapping to 20p13; Pcna (mouse) mapping to 2 F2.

SOURCE

PCNA (F-2) is a mouse monoclonal antibody epitope corresponding to amino acids 1-261 of PCNA of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

PCNA (F-2) is available conjugated to agarose (sc-25280 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-25280 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-25280 PE), fluorescein (sc-25280 FITC), Alexa Fluor® 488 (sc-25280 AF488), Alexa Fluor® 546 (sc-25280 AF546), Alexa Fluor® 594 (sc-25280 AF594) or Alexa Fluor® 647 (sc-25280 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-25280 AF680) or Alexa Fluor® 790 (sc-25280 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

APPLICATIONS

PCNA (F-2) is recommended for detection of PCNA of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:5,000), 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 PCNA siRNA (h): sc-29440, PCNA siRNA (m): sc-29441, PCNA shRNA Plasmid (h): sc-29440-SH, PCNA shRNA Plasmid (m): sc-29441-SH, PCNA shRNA (h) Lentiviral Particles: sc-29440-V and PCNA shRNA (m) Lentiviral Particles: sc-29441-V.

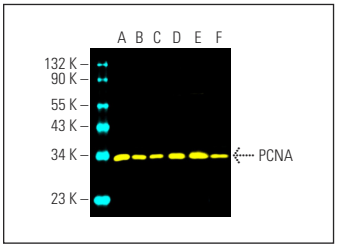
Molecular Weight of PCNA: 36 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, U-87 MG cell lysate: sc-2411 or COLO 205 whole cell lysate: sc-364177.

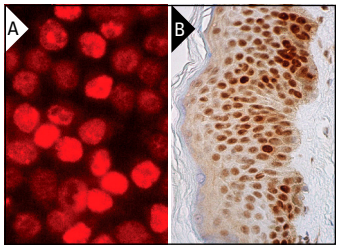
STORAGE

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

DATA



PCNA (F-2) Alexa Fluor® 488: sc-25280 AF488. Direct fluorescent western blot analysis of PCNA expression in Jurkat (**A**), U-87 MG (**B**), Hep G2 (**C**), HeLa (**D**), NIH/3T3 (**E**) and COLO 205 (**F**) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Cruz Marker™ Molecular Weight Standards detected with Cruz Marker™ MW Tag-Alexa Fluor® 647: sc-516791.



PCNA (F-2): sc-25280. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human skin tissue showing nuclear staining of keratinocytes, fibroblasts, Langerhans cells and melanocytes (**B**).

SELECT PRODUCT CITATIONS

1. Ieraci, A., et al. 2002. Viable hypomorphic signaling mutant of the Met receptor reveals a role for hepatocyte growth factor in postnatal cerebellar development. Proc. Natl. Acad. Sci. USA 99: 15200-15205.
2. Mortusewicz, O., et al. 2016. PC4 promotes genome stability and DNA repair through binding of ssDNA at DNA damage sites. Oncogene 35: 761-770.
3. Qu, Y., et al. 2017. ILK promotes cell proliferation in breast cancer cells by activating the PI3K/Akt pathway. Mol Med Rep. 16: 5036-5042.
4. Dong, Q.F., et al. 2018. Inhibition of eIF4F complex loading inhibits the survival of malignant glioma. Oncol. Rep. 40: 2399-2407.
5. Pan, S., et al. 2019. Long noncoding RNA LINC01111 suppresses pancreatic cancer aggressiveness by regulating DUSP1 expression via microRNA-3924. Cell Death Dis. 10: 883.
6. Niu, J., et al. 2020. Curtailing FGF19's mitogenicity by suppressing its receptor dimerization ability. Proc. Natl. Acad. Sci. USA 117: 29025-29034.
7. Ying, L., et al. 2021. Paracrine FGFs target skeletal muscle to exert potent anti-hyperglycemic effects. Nat. Commun. 12: 7256.
8. Azzouz, D., et al. 2022. ROS and DNA repair in spontaneous versus agonist-induced NETosis: context matters. Front. Immunol. 13: 1033815.
9. Bakke, D.S., et al. 2023. Myeloid vitamin D receptor regulates Paneth cells and microbial homeostasis. FASEB J. 37: e22957.
10. Uhrig, M.E., et al. 2024. Disparate requirements for RAD54L in replication fork reversal. Nucleic Acids Res. 52: 12390-12404.

RESEARCH USE

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