SANTA CRUZ BIOTECHNOLOGY, INC.

SV40 T Ag (Pab 416): sc-53448

BACKGROUND

Simian virus SV40 has provided an important model for studies of cellular mechanisms involved in a malignant transformation. The major SV40 translational products include the large T antigen and the small T antigen, both of which are encoded by the early region of the SV40 viral genome. The large T antigen complexes with the p53 suppressor gene, resulting in its functional inactivation, thus promoting cell transformation. In addition, SV40 large T antigen binds DNA polymerase and the transcription factor AP-2. It also forms complexes with a second tumor supressor gene-encoded protein, Rb 105. Binding of SV40 T antigen is specific for the "pocket" domain of Rb p105, which is also the binding site for the E2F cellular transcription factor.

REFERENCES

1. Lane, D.P. and Crawford, L.V. 1979. T antigen is bound to a host protein in SV40-transformed cells. Nature 278: 261-263.
2. Crawford, L.V., et al. 1981. Detection of a common feature in several human tumor cell lines—a 53 kDa protein. Proc. Natl. Acad. Sci. USA 78: 41-45.
3. Sarnow, P., et al. 1982. Adenovirus E1B 58 kDa tumor antigen and SV40 large tumor antigen are physically associated with the same 54 kDa cellular protein in transformed cells. Cell 28: 387-394.
4. Gurney, E.G., et al. 1986. Antigenic binding sites of monoclonal antibodies specific for simian virus 40 large T antigen. J. Virol. 57: 1168-1172.
5. Mitchell, P.J., et al. 1987. Positive and negative regulation of transcription *in vitro:* enhancer-binding protein AP-2 is inhibited by SV40 T antigen. Cell 50: 847-861.
6. DeCaprio, J.A., et al. 1988. SV40 large T antigen forms a specific complex with the product of the retinoblastoma susceptibility gene. Cell 54: 275-283.
7. Chen, S. and Paucha, E. 1990. Identification of a region of simian virus 40 large T antigen required for cell transformation. J. Virol. 64: 3350-3357.

SOURCE

SV40 T Ag (Pab 416) is a mouse monoclonal antibody raised against SV40 transformed cells of mouse 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.

SV40 T Ag (Pab 416) is available conjugated to agarose (sc-53448 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-53448 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-53448 PE), fluorescein (sc-53448 FITC), Alexa Fluor® 488 (sc-53448 AF488), Alexa Fluor® 546 (sc-53448 AF546), Alexa Fluor® 594 (sc-53448 AF594) or Alexa Fluor® 647 (sc-53448 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-53448 AF680) or Alexa Fluor® 790 (sc-53448 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

SV40 T Ag (Pab 416) is recommended for detection of large T antigen of SV40 by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

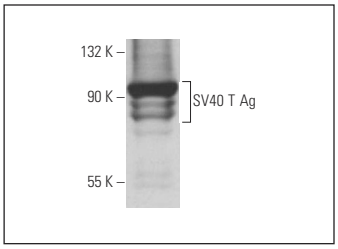
Molecular Weight of SV40 small T antigen: 21 kDa.

Molecular Weight of SV40 T Ag: 94 kDa.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



SV40 T Ag (Pab 416): sc-53448. Western blot analysis of SV40 T Ag expression in GM637 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Peterson, J.N., et al. 2017. Replication of JC virus DNA in the G144 oligodendrocyte cell line is dependent upon Akt. J. Virol. 91: e00735-17.
2. McNees, A.L., et al. 2018. Viral microRNA effects on persistent infection of human lymphoid cells by polyomavirus SV40. PLoS ONE 13: e0192799.
3. Katwal, P., et al. 2019. Development and biochemical and immunological characterization of early passage and immortalized bovine intestinal epithelial cell lines from the ileum of a young calf. Cytotechnology 71: 127-148.
4. Nwogu, N., et al. 2020. Merkel cell polyomavirus large T antigen unique domain regulates its own protein stability and cell growth. Viruses 12: E1043.
5. Seridi, N., et al. 2021. Immortalization of primary sheep embryo kidney cells. In Vitro Cell. Dev. Biol. Anim. 57: 76-85.

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.