

Technical Data Sheet

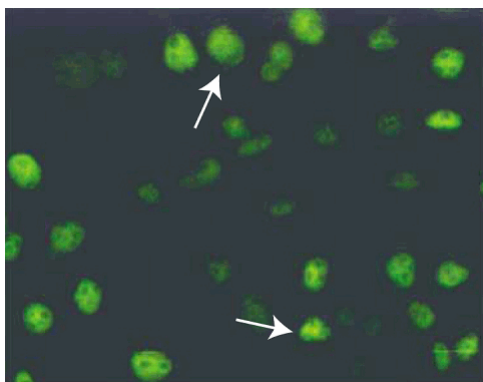
FITC Mouse Anti-SV40 Large T and Small t Antigens

Product Information

Material Number:	554152
Size:	0.1 mg
Concentration:	0.5 mg/ml
Clone:	PAb 108
Immunogen:	SV40-transformed BALB/c mouse cells
Isotype:	Mouse IgG2a
Reactivity:	QC Testing: Viral-transformed cells
Target MW:	90-100 kDa
Storage Buffer:	Aqueous buffered solution containing ≤0.09% sodium azide.

Description

Simian virus 40 (SV40) is a small DNA virus encoded by 5.2 kb of double-stranded DNA. SV40 large T-antigen (T-ag) is a multifunctional ~85 kDa phosphoprotein, which is the sole viral protein required for SV40 replication. All other factors are provided by the infected host cell. In addition to its role in SV40 DNA replication, T-ag also causes transformation of susceptible cell lines. Studies of various mutant T-ag proteins have shown that the replication and transformation fractions of T-ag can be separated. The multifunctional nature of this protein has resulted in its use as a model system in a wide variety of disciplines. T-ag exercises negative regulation on the transcription of SV40 early mRNA by feedback inhibition and exerts positive regulation on transcription from the late promoter. In addition to transcriptional regulation, T-ag is involved in viral DNA replication. Specific biochemical functions required for DNA synthesis that are inherent to the T-ag include high-affinity binding to sites within the viral origin of DNA synthesis, ATPase, and helicase activities. Other functions attributed to T-ag include cellular transformation, induction of cellular DNA synthesis, induction of rRNA synthesis, and provision of a host-range function for viral replication. However, functions of T-ag are influenced by a wide range of post-translational modifications including phosphorylation, glycosylation, acetylation, acylation, and adenylation. T-ag exists in monomeric as well as polymeric forms, and associates with the tumor suppressor proteins p53 and retinoblastoma protein (Rb). Most of T-ag is transported to the nucleus, while a small fraction is localized at the cell surface. Small t-Ag is a polypeptide which shares 82 N-terminal amino acids with large T antigen and has a unique C-terminal region. Clone PAb 108 recognizes an N-terminal epitope within the first 82 amino acids of T-ag and small t antigen (t-ag). B4 SV40-transformed BALB/c mouse fibroblasts were used as immunogen. PAb 108 was originally produced and characterized as part of a panel of antibodies designated PAb 102-117.



Detection of large T in COS-7 cells using FITC-conjugated PAb 108 (Cat. No. 554152). A characteristic nuclear staining with nucleolar exclusion is observed.

Preparation and Storage

The monoclonal antibody was purified from tissue culture supernatant or ascites by affinity chromatography.

The antibody was conjugated with FITC under optimum conditions, and unreacted FITC was removed.

Store undiluted at 4°C and protected from prolonged exposure to light. Do not freeze.

Application Notes

Application

Immunofluorescence	Routinely Tested
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Recommended Assay Procedure:

SV40 large T antigen immunoprecipitated with PAb 108 has also been used in SV40 origin DNA binding assays, although this application has not been tested at BD Biosciences Pharmingen. The unconjugated format of this antibody is available for Western blot applications.

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Suggested Companion Products

Catalog Number	Name	Size	Clone
554150	Purified Mouse Anti-SV40 Large T and Small t Antigens	0.1 mg	PAb 108
554151	Biotin Mouse Anti-SV40 Large T and Small t Antigens	0.1 mg	PAb 108

Product Notices

1. Since applications vary, each investigator should titrate the reagent to obtain optimal results.
2. Please refer to www.bdbiosciences.com/pharminingen/protocols for technical protocols.
3. Caution: Sodium azide yields highly toxic hydrazoic acid under acidic conditions. Dilute azide compounds in running water before discarding to avoid accumulation of potentially explosive deposits in plumbing.

References

Gurney EG, Tamowski S, Deppert W. Antigenic binding sites of monoclonal antibodies specific for simian virus 40 large T antigen. *J Virol.* 1986; 57(3):1168-1172. (Immunogen: Fluorescence microscopy, Immunoprecipitation, Western blot)

Hinzpeter M, Fanning E, Deppert W. A new sensitive target-bound DNA binding assay for SV40 large T antigen. *Virology.* 1986; 148(1):159-167. (Clone-specific: Immunohistochemistry, Immunoprecipitation)

Mellor A, Smith AE. Characterization of the amino-terminal tryptic peptide of simian virus 40 small-t and large-T antigens. *J Virol.* 1978; 28(3):992-996. (Biology)