Technical Data Sheet

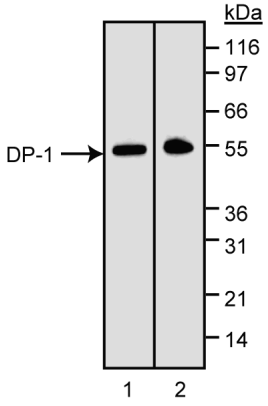
Purified Mouse Anti-Human DP-1

Product Information

Material Number:	**556462**
Size:	0.1 mg
Concentration:	0.5 mg/ml
Clone:	TFD10
Isotype:	Mouse IgG1, κ
Reactivity:	QC Testing: Human
Target MW:	52-55 kDa
Storage Buffer:	Aqueous buffered solution containing ≤0.09% sodium azide.

Description

DP-1 and DP-2 are transcription factors which form heterodimers with several members of the E2F family. DP-1 binding to E2F is often required for interaction between E2F and the retinoblastoma family of proteins (Rb, p107 and p130), which restrict E2F/DP complexes to the cytoplasm. These E2F inhibitors are phosphorylated by complexes which are formed during the cell cycle, e.g., cyclin-cdk complexes. Phosphorylation of RB or other inhibitors releases the E2F/DP complex to enter the nucleus, thus providing temporally regulated activation of E2F responsive genes. While some E2F proteins can act alone, formation of a DP-1 heterodimer provides enhanced DNA binding and transcriptional activity to E2F. E2F-DNA binding sites have been identified in the promoter regions of genes important for growth regulation, e.g., c-myc, N-myc, cdc2 and cyclin A as well as within genes which are important for DNA synthesis, e.g., DNA polymerase α and thymidine kinase. Activation of specific gene(s) may also be dependent on the formation of distinct DP/E2F complexes. Cotransfection studies demonstrate specific interactions between E2Fs and DP-1 or -2. DP-1 binds to E2F-1 through -4, while DP-2 is specific for E2F-4. DP-1 may also play a role as a proto-oncogene in cooperation with Ras proteins, a mechanism, which is independent of E2F. DP-1 has a molecular weight of 52-55 kDa by SDS-PAGE. The TFD10 antibody recognizes an epitope between amino acids 83-204 of human DP-1. The specificity of the antibody was verified by immunoprecipitation of *in vitro* translated DP-1 protein and by western blot analysis of cell extracts.



Western blot analysis of human DP-1. *Lysates from Daudi Burkitt lymphoma cells (lane 1) and HeLa cervical carcinoma cells (lane 2) were probed with anti-DP-1 (clone TDF10, Cat. No. 556462). DP-1 is observed as an ~55 kDa band.*

Preparation and Storage

Store undiluted at 4°C.

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

Application Notes

Application

Western blot	Routinely Tested

Recommended Assay Procedure:

Western blot: Please refer to http://www.bdbiosciences.com/pharmingen/protocols/Western_Blotting.shtml

Clone TFD10 is useful for western blot (1-2 µg/ml) of human DP-1. Several human cell lines may be used as a positive control for this application includingL HeLa, cervical carcinoma (ATCC CCL-2); RD, Rhabdomysarcoma (ATCC CCL-136); Daudi, Burkitt lymphoma (ATCC CCL-213) and CEM peripheral blood T cell lines (ATCC CCL-119).

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Suggested Companion Products

Catalog Number	Name	Size	Clone
554002	HRP Goat Anti-Mouse Ig	1.0 ml	(none)
611449	HeLa Cell Lysate	500 µg	(none)

Product Notices

1. Since applications vary, each investigator should titrate the reagent to obtain optimal results.
2. 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.
3. Please refer to www.bdbiosciences.com/pharmingen/protocols for technical protocols.

References

Helin K, Wu CL, Fattaey AR, et al. Heterodimerization of the transcription factors E2F-1 and DP-1 leads to cooperative trans-activation. *Genes Dev.* 1993; 7(10):1850-1861. (Biology)

Huber HE, Edwards G, Goodhart PJ, et al. Transcription factor E2F binds DNA as a heterodimer. *Proc Natl Acad Sci U S A.* 1993; 90(8):3525-3529. (Biology)

Jooss K, Lam EW, Bybee A, Girling R, Muller R, La Thangue NB. Proto-oncogenic properties of the DP family of proteins. *Oncogene.* 1995; 10(8):1529-1536. (Biology)

Magae J, Wu CL, Illenye S, Harlow E, Heintz NH. Nuclear localization of DP and E2F transcription factors by heterodimeric partners and retinoblastoma protein family members. *J Cell Sci.* 1996; 109(7):1717-1726. (Biology)