

Technical Data Sheet

Purified Mouse Anti-FKBP-12

Product Information

Material Number:	554091
Size:	0.1 mg
Concentration:	0.5 mg/ml
Clone:	2C1-87
Immunogen:	Recombinant FKBP-12
Isotype:	Mouse IgG1
Reactivity:	QC Testing: Human Reported: Mouse, Rat
Target MW:	12 kDa
Storage Buffer:	Aqueous buffered solution containing ≤0.09% sodium azide.

Description

FKBP-12 (for FK506 binding protein-12 kDa) is a ubiquitously expressed protein involved in T-cell signaling that binds to FK506. FK506 belongs to a class of proteins that have peptidyl-prolyl cis-trans isomerase (PPIase) activity. This class of proteins is thought to be involved in folding proteins and peptides into their native conformations. It is thought that peptidyl-prolyl isomerization may play a role in regulating components of the T-cell signal transduction pathway such as transcription factors, protein kinase activation, and ion channel function. FK506, like cyclosporin, is an agent that inhibits T- and B-cell early activation processes that are key to an effective immune response. In T cells these agents disrupt a step in the signal transduction pathway from the T-cell receptor to cytokine genes involved in coordinating the immune response. In particular, they seem to disrupt pathways that induce a measurable rise in Ca²⁺. NFAT, a transcription factor essential for early T-cell activation, appears to be a specific target of FK506 and cyclosporin because transcription directed by NF-AT is specifically blocked in T cells treated with these agents. NFAT is formed when a signal from the T-cell antigen receptor induces a pre-existing cytoplasmic subunit to translocate to the nucleus and combine with a newly synthesized nuclear subunit of NFAT. When FK506 binds to FKBP-12, the complex blocks translocation of the cytoplasmic subunit of NF-AT into the nucleus by inhibiting a Ca²⁺-dependent phosphatase. Since the cytoplasmic subunit is not translocated into the nucleus, the formation of NFAT and its subsequent transcriptional activity is blocked. The reduced molecular weight of FKBP-12 is 12 kDa.

The 2C1-87 antibody recognizes FKBP-12. Specifically it has been shown to recognize human, mouse, and rat FKBP-12. Recombinant FKBP-12 was used as immunogen. The antibody was originally characterized by biochemical, immunohistochemical, and functional assays.

Preparation and Storage

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

Store undiluted at 4°C.

Application Notes

Application

Western blot	Routinely Tested
Immunohistochemistry-paraffin	Reported

Recommended Assay Procedure:

Applications include western blot analysis, immunohistochemistry of cytospins (reported) and of paraffin-embedded tissue sections. Jurkat T cells (ATCC TIB-152) are suggested as a positive control.

Suggested Companion Products

Catalog Number	Name	Size	Clone
611451	Jurkat Cell Lysate	500 µg	(none)

Product Notices

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

Flanagan WM, Corthésy B, Bram RJ, Crabtree GR. Nuclear association of a T-cell transcription factor blocked by FK-506 and cyclosporin A. *Nature*. 1991; 352(6338):803-807.(Biology)
Kobayashi M, Ohtsuka K, Tamura K, et al. Production of monoclonal antibody against recombinant human FKBP-12 and subcellular localization of FKBP-12 in human mononuclear and polymorphonuclear cells. *Transplant Proc*. 1993; 125(1):655-657.(Clone-specific: Immunohistochemistry, Western blot)

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Siekierka JJ, Wiederrecht G, Greulich H, et al. The cytosolic-binding protein for the immunosuppressant FK-506 is both a ubiquitous and highly conserved peptidyl-prolyl cis-trans isomerase. *J Biol Chem.* 1990; 265(34):21011-21015.(Clone-specific: Functional assay, Immunohistochemistry)