Technical Data Sheet

Purified Mouse Anti-MAP2

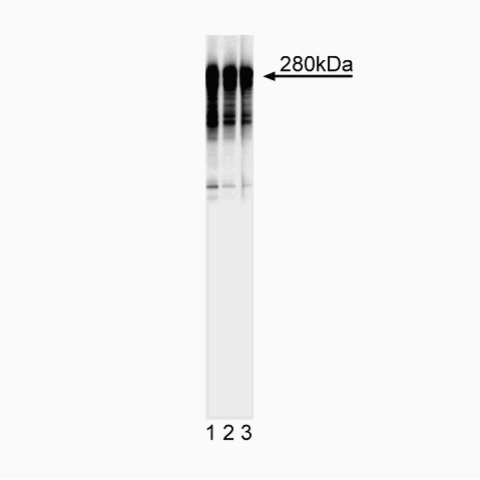
Product Information

Material Number:	**556320**
Alternate Name:	a and b Isoforms
Size:	0.1 mg
Concentration:	0.5 mg/ml
Clone:	Ap20
Immunogen:	Cow MAP2
Isotype:	Mouse IgG1
Reactivity:	QC Testing: Rat Reported: Human, Cow, Frog, Quail
Target MW:	280 kDa
Storage Buffer:	Aqueous buffered solution containing ≤0.09% sodium azide.

Description

Microtubule-associated protein 2 (MAP2) is a neuronal cytoskeletal protein that binds to tubulin and stabilizes microtubules. It is expressed in the cell body and dendrites of neurons, but is absent in neuronal processes. The expression of MAP2 is developmentally regulated, and there are multiple high and low molecular weight isoforms, all derived from one MAP2 gene. MAP2a, MAP2b, and MAP2c are the three major MAP2 isoforms. The high molecular weight MAP2 isoforms, MAP2a and MAP2b consist of a large projection arm and a short microtubule binding domain. The low molecular weight MAP-2 isoform, MAP2c, lacks most of the projection arm of the high molecular weight isoforms. MAP2c is the earliest expressed MAP2 and is derived by alternative splicing MAP2a and MAP2b are considered to be adult expressed MAPs, with MAP2a expression occuring later in development than MAP2b expression. MAP2a is thought to result from a post-translational modification of MAP2b. High molecular weight MAP2 isoforms (2a and 2b) migrate as a doublet at a molecular weight of >300 kDa. The low molecular weight MAP2 isoform 2c migrates at 70 kDa.

The Ap-20 antibody recognizes high molecular weight MAP2 isoforms MAP2a and MAP2b. Specifically, it has been shown to recognize MAP2a and MAP2b from human, bovine, rat, frog, and quail cells and tissues. Ap-20 does not recognize the low molecular weight MAP2 isoforms (MAP2c) or other microtubule proteins. Ap-20 reacts with an epitope between amino acids 997-1332 of high molecular weight MAP2 isoforms.4 Bovine MAP2 was used as immunogen.



Western blot analysis of MAP2. *Rat brain lysate was probed with anti- MAP2 at concentrations of 4.0 (lane 1), 2.0 (lane 2), and 1.0 µg/ml (lane 3). MAP2 is identified as a band of ~280 kDa.*

Preparation and Storage

The monoclonal antibody was purified from tissue culture supernatant or ascites by affinity chromatography.
Store undiluted at 4°C.

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Application Notes

Application

Western blot	Routinely Tested
Immunohistochemistry-frozen	Tested During Development
Immunoprecipitation	Tested During Development

Recommended Assay Procedure:

Applications include western blot analysis (1-2 µg/ml), immunoprecipitation, and immunohistochemistry of paraformaldehyde-fixed tissue cultured cells, and frozen tissue sections. T98G human glioblastoma cells (ATCC CRL-1690) and rat brain enriched microtubule protein preparations are suggested as positive controls.

Suggested Companion Products

Catalog Number	Name	Size	Clone
554002	HRP Goat Anti-Mouse Ig	1.0 ml	(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

Binder LI, Frankfurter A, Rebhun LI. Differential localization of MAP-2 and tau in mammalian neurons in situ. *Ann N Y Acad Sci.* 1986; :145-166.(Immunogen)

Kalcheva N, Albala JS, Binder LI, Shafit-Zagardo B. Localization of specific epitopes on human microtubule-associated protein 2. *J Neurochem.* 1994; 63(6):2336-2341.(Clone-specific: Western blot)

Tucker RP. The roles of microtubule-associated proteins in brain morphogenesis: a review. *Brain Res Rev.* 1990; 15(2):101-120.(Biology)

Tucker RP, Binder LI, Viereck C, Hemmings BA, Matus AI. The sequential appearance of low- and high-molecular-weight forms of MAP2 in the developing cerebellum. *J Neurosci.* 1988; 12:4503-4512.(Biology)