# Mouse (monoclonal) Anti-tau (Neurofibrillary Tangles Marker)
Unconjugated

## PRODUCT ANALYSIS SHEET

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| **Catalog Number:** | AHB0042 |
| **Lot Number:** | See product label |
| **Quantity/Volume:** | 0.1 mg/0.2 mL |
| **Clone:** | TAU-5 |
| **Isotype:** | IgG1 |
| **Form of Antibody:** | Purified immunoglobulin in phosphate buffered saline, pH 7.4. |
| **Preservation:** | 15 mM sodium azide (Caution: sodium azide is a poisonous and hazardous substance. Handle with care and dispose of properly.) |
| **Purification:** | Purified from ascites fluid by Protein A/G chromatography. |
| **Immunogen:** | Purified bovine microtubule-associated proteins. |
| **Hybridoma:** | Produced by the fusion between BALB/c splenocytes and mouse myeloma Sp2/0-Ag14 cells. |
| **Specificity:** | This antibody recognizes proteins of 45-68 kDa, identified as tau proteins. Tau proteins promote the assembly of tubulin monomers into microtubules and stabilize microtubules. Alternate splicing of tau mRNA, glycosylation, and differential phosphorylation contribute to the heterogeneity of tau. The TAU-5 monoclonal antibody reacts with the non-phosphorylated as well as the phosphorylated forms of tau. Its epitope is located in the middle region of tau. This antibody is highly specific for tau and does not cross-react with other microtubule associated proteins (MAPs) or tubulin. In immunohistology, this antibody intensely stains the human neurofibrillary tangles, neuropil threads, and neuritic plaques associated with Alzheimer's disease. This antibody is also observed to stain astrocytes. |
| **Species Reactivity:** | Human, sheep, cow, mouse, and rat tau. Other species were not tested. |
| **Applications:** | This antibody is suitable for use in Western blotting, immunoprecipitation, ELISA, and immunohistology with cryostat sections and formalin-fixed paraffin embedded tissue sections. With formalin-fixed paraffin embedded tissues, staining is enhanced by boiling tissue sections in 10 mM citrate buffer, pH 6.0, for 10-20 minutes followed by cooling at room temperature for 20 minutes prior to antibody incubation. |
| **Suggested Working Dilutions:** | For immunoprecipitation, use 10 µg per 200-500 µg of cell lysate; and for Western blotting, use 1 µg/mL. For immunohistology, use 1-2 µg/mL for 30-60 minutes at room temperature. The optimal antibody concentration should be determined for each specific application. |
| **Recommended Positive Control:** | Human T98G glioblastoma, SH-SY5Y cells or brain tissue. |

**This product is for research use only. Not for use in diagnostic procedures.**

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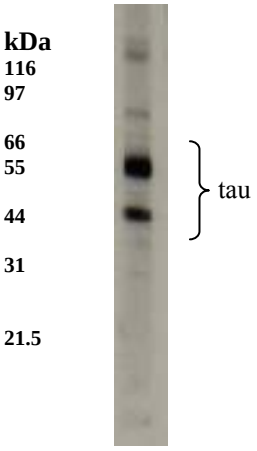
**Storage:** Store at 2-8ºC. For long term storage, aliquot into small volumes and store at –20ºC. Avoid repeated freeze-thaw cycles to prevent denaturing the antibody.

**Reference:**

Papasozomenos, S.C. and A. Shanavas (2002) Testosterone prevents the heat shock-induced overactivation of glycogen synthase kinase-3 beta but not of cyclin-dependent kinase 5 and c-Jun NH2-terminal kinase and concomitantly abolishes hyperphosphorylation of tau: Implications of Alzheimer's disease. Proc. Nat'l. Acad. Sci. USA 99 (3):1140-1145 (cites the use of this antibody is Western blotting).

Rapoport, M., H.N. Dawson, L.I. Binder, M.P. Bitek, and A. Ferreira (2002) Tau is essential to β-amyloid-induced neurotoxicity. Proc. Nat'l. Acad. Sci. USA 99(9):6364-6369 (cites the use of TAU-5 in immunocytochemistry).

Takahashi, S., T. Saito, S. Hisanaga, H. C. Pant and A. B. Kulkarni (2003) Tau phosphorylation by cyclin-dependent kinase 5/p39 during brain development reduces its affinity for microtubules. J. Biol. Chem. 278(12):10506-10515.




Extracts from SH-SY5Y neuronal cells were resolved on a 4-20% Tris-glycine gel and proteins were transferred to PVDF. Membranes were incubated with 1:1000 dilution of the anti-tau antibody. The signal was detected using a Goat $F(ab')_2$ anti-Mouse IgG Alkaline Phosphatase antibody (cat.# AMI4405) at a 1:5000 dilution and the membrane was incubated with CDP-substrate using the WesternStar™ method (Tropix). The membrane was then exposed to Kodak BioMax film.