

## Product Information

### Anti- $\alpha$ -Tubulin antibody, Mouse monoclonal clone AA13, purified from hybridoma cell culture

Product Number **T8203**

#### Product Description

Anti- $\alpha$ -Tubulin antibody, Mouse monoclonal (mouse IgG1 isotype) is derived from the hybridoma AA13 produced by the fusion of mouse myeloma cells and splenocytes from BALB/c mice immunized with rat brain tubulin. The isotype is determined using a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents, Product Number ISO2.

Anti- $\alpha$ -Tubulin antibody, Mouse monoclonal reacts with human, rat, and mouse  $\alpha$ -tubulin. The antibody may be used in various immunochemical techniques including ELISA, immunoblotting (~ 50 kDa), immuno-precipitation, immunocytochemistry, and immunohistochemistry.

Tubulin is the major building block of microtubules. This intracellular, cylindrical, filamentous structure is present in almost all eukaryotic cells. Microtubules function as structural and mobile elements in mitosis, intracellular transport, flagellar movement and the cytoskeleton. Tubulin is a heterodimer that consists of  $\alpha$ -tubulin and  $\beta$ -tubulin. Both subunits have a molecular weight of ~50 kDa and share considerable homology. In addition to  $\alpha$ - and  $\beta$ -tubulin, several other tubulins have been identified, bringing the number of distinct tubulin classes to seven. Most of these tubulins have distinct subcellular localization and an emerging diverse set of functions.<sup>1</sup> Out of the seven different tubulins four new members of the tubulin family were identified recently, which consist of  $\delta$ ,  $\xi$ ,  $\eta$ , and  $\epsilon$ -tubulin.  $\eta$  and  $\epsilon$ -tubulins were discovered by database searches.<sup>2</sup> Microtubular systems contain at least three  $\alpha$ -tubulin isoforms. Two  $\alpha$ -tubulin isoform proteins are very similar but are encoded by two different genes. The third isoform is generated by post-translational modification.<sup>3</sup> At least three modifications of tubulin subunits have been described: phosphorylation of  $\beta$ -tubulin from brain, removal of the carboxyterminal tyrosine from  $\alpha$ -tubulin in vertebrate tissues, and acetylation of the amino group of lysine(s) in  $\alpha$ -tubulin. Monoclonal antibodies recognizing

$\alpha$ -tubulin, together with monoclonal antibodies to other tubulin types ( $\beta$ -tubulin isotypes I, II, and III, tyrosine tubulin and acetylated- $\alpha$ -tubulin) provide a specific and useful tool in studying the intracellular distribution of tubulin, and the static and dynamic aspects of the cytoskeleton. In addition, the various tubulin forms have been implicated in cancerous processes and are thus suggested as potential targets for cancer therapy.<sup>4</sup>

#### Reagent

Supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide as a preservative.

Antibody concentration: ~ 2.0 mg/mL

#### Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

#### Storage/Stability

For continuous use, store at 2-8 °C for up to one month. For extended storage, freeze at -20 °C in working aliquots. Repeated freezing and thawing, or storage in "frost-free" freezers, is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilution samples should be discarded if not used within 12 hours.

#### Product Profile

**Immunoblotting:** a working antibody concentration of 1-2  $\mu$ g/mL is recommended using Neuro-2a cell extract.

**Note:** In order to obtain the best results using various techniques and preparations, we recommend determining optimal working dilutions by titration.

## References

1. Dutcher, S.K., et al., *Curr. Opin. Cell Biol.*, **13**, 49-54 (2001)
2. McKean, P.G., et al., *J. Cell Sci.*, **114**, 2723-2733 (2001).
3. LeDizet, M., and Piperno, G., *J. Cell Biol.*, **104**, 13-22 (1986).
4. Carlson, R.O., *Expert Opin. Investig. Drug*, **17**, 707-712 (2008).

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