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Product Information

Anti-γ-Tubulin (DQ-19)
produced in rabbit, IgG fraction of antiserum

Catalog Number **T3195**

Product Description

Anti-γ-Tubulin (DQ-19) is produced in rabbit using a synthetic peptide corresponding to the C-terminus of human γ-tubulin (amino acids 433-451, with N-terminally added lysine), conjugated to KLH (keyhole limpet hemocyanin) as immunogen. This sequence is identical in rat γ-tubulin and highly conserved in human γ-tubulin-2, and dog and *Xenopus* γ-tubulin (≥90% identity). The product is specific for γ-tubulin and not found in other members of the tubulin family such as α-, β-, δ-, and ε-tubulins. Whole antiserum is fractionated and then further purified by ion-exchange chromatography to provide the IgG fraction of antiserum that is essentially free of other rabbit serum proteins.

Anti-γ-Tubulin (DQ-19) recognizes human, rat, and *Xenopus* γ-tubulin (48 kDa). Applications include immunoblotting and immunocytochemistry (immuno-fluorescence staining). Staining of γ-tubulin in immunoblotting is specifically inhibited with γ-tubulin immunizing peptide (human, amino acids 433-451, with N-terminally added lysine).

γ-Tubulin (48 kDa) is a widely expressed and highly conserved protein within the microtubule organizing centers (MTOCs) or centrosome in eukaryotic cells.[1] It is a member of the tubulin superfamily of proteins which includes α- and β-tubulin and the newly discovered centrosomal-associated proteins, δ- and ε-tubulin.[1, 2] The microtubule cytoskeleton consists of a dynamic, highly polarized network of microtubules filaments, microtubule-associated proteins, microtubule motors, and microtubule-organizing proteins. The proper organization of microtubules is essential for cell division and chromosome segregation, directed cell movement, interphase cytoplasmic organization, and other cyto-skeletal functions.[1] Microtubules are complex polymers of α-tubulin/β-tubulin heterodimers. Centrosomes nucleate the assembly of microtubules and establish the polarity of microtubules. γ-Tubulin has an essential role in microtubule nucleation by the centrosomes.[3-9] It does not polymerize with α-tubulin/β-tubulin, but instead is localized to the centrosome and to the cytoplasm.[1,4-6]

γ-Tubulin is found as part of a large protein complex containing at least five other proteins, and has a shape of a ring (γ-tubulin ring complex, γ-TuRC) that is roughly the same diameter as a microtubule.[9-13] It binds the microtubule minus ends and is responsible for mediating the link between microtubules and the centrosome.[1, 6] γ-Tubulin binds to the β-tubulin half of the tubulin molecule, thus establishing the polarity of a microtubule, leaving the α-tubulin half exposed at the plus end. Its abundance is less than 1% of the level of either α- or β-tubulin.[5] γ-Tubulin shares 28-32% identity with α-tubulin from various organisms, 32-36% identity with β-tubulins and 29-30% identity with δ- and ε-tubulins. Some regions including those thought to be involved in GTP binding are highly conserved among α-, β-, γ-, δ-, and ε-tubulins.[2]

Reagent

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

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material 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 prolonged storage, freeze in working aliquots at −20 °C. 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 minimum working dilution of 1:1,000 is determined using a whole cell extract of the human epidermoid carcinoma A431 cell line.

Indirect immunofuorescent staining: a minimum working dilution of 1:500 is determined using methanol-acetone-fixed chicken fibroblasts.

Note: In order to obtain best results in different techniques and preparations we recommend determining optimal working dilutions by titration test.

References

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