3050 Spruce Street, St. Louis, MO 63103 USA
Tel: (800) 521-8956 (314) 771-5765 Fax: (800) 325-5052 (314) 771-5757
email: techservice@sial.com sigma-aldrich.com

Product Information

Anti-CYBB
produced in rabbit, affinity isolated antibody

Product Number **SAB4200118**

Product Description

Anti-CYBB is produced in rabbit using as the immunogen a synthetic peptide corresponding to a fragment of human CYBB (GeneID 1536), conjugated to KLH. The corresponding sequence is highly conserved (82% identity) in mouse and rat CYBB. The antibody is affinity-purified using the immunizing peptide immobilized on agarose.

Anti-CYBB specifically recognizes human CYBB. The antibody can be used in several immunochemical techniques including immunoblotting (~95 kDa). Detection of the CYBB band by immunoblotting is specifically inhibited by the CYBB immunizing peptide.

Reactive oxygen species (ROS) are conventionally thought of as cytotoxic and mutagenic and in high levels they induce an oxidative stress response. Recent evidence indicates that lower levels of ROS act as an intracellular mediator of growth, apoptosis, and senescence. CYBB (also known as cytochrome b-245, beta polypeptide, NOX2, CGD, GP91-1, GP91PHOX, p91-PHOX), belongs to the family of NADPH oxidases that catalyze the generation of the superoxide ion.[1,2] In addition to NOX2/gp91^{phox}, homologs of the NOX protein family include the catalytic subunits NOX1, NOX3-5, Duox1, and Duox2, that are thought to play important roles in redox-dependent cell signaling, inflammation, and in neurodegenerative disease. NOX2/gp91^{phox} is expressed in neutrophils and phagocytes.

CYBB is a six-transmembrane glycoprotein that binds heme, flavin, and NADPH. It associates with membrane-bound p22^{phox} to assemble the heavy subunit of flavocytochrome b_{558}, the catalytic component of phagocyte NADPH oxidase.[3] CYBB also associates with four cytosolic components p47^{phox}, p67^{phox}, p40^{phox}, and Rac2, required for NADPH oxidase activity. CYBB promotes neurotoxic activation of microglia suggesting that they play a central role during neuroinflammatory states and in amyotrophic lateral sclerosis (ALS).[4,5] In ALS mice, deletion of either NOX1 or NOX2 gene has significantly slowed disease progression and improved survival.[6]

Reagent

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

Antibody concentration: ~1.5 mg/mL

Precautions and Disclaimer

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 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 dilutions should be discarded if not used within 12 hours.

Product Profile

Immunoblotting: a working concentration of 1.5-3.0 μg/mL is recommended using RAW264 cell extracts.

Note: In order to obtain best results in various techniques and preparations, it is recommended to determine optimal working dilutions by titration.

References

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4. Cheret, C., et al., *J. Neurosci.*, **28**, 12039-12051 (2008).
5. Wu, D.C., et al., *Proc. Natl. Acad. Sci. USA*, **103**, 12132-12137 (2006).
6. Marden, J.J., et al., *J. Clin. Invest.*, **117**, 2913-2919 (2007).

VS,SG,PHC,MAM 07/19-1