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CNPase (D83E10) XP[®] Rabbit mAb (Alexa Fluor[®] 647 Conjugate)

For Research Use Only. Not for Use in Diagnostic Procedures.

Applications:	Reactivity:	Sensitivity:	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
IF-F	H M R	Endogenous	Rabbit IgG	#P09543	1267

Storage Supplied in PBS (pH 7.2), less than 0.1% sodium azide and 2 mg/ml BSA. Store at 4°C. Do not aliquot the antibody. Protect from light. Do not freeze.

Specificity/Sensitivity CNPase (D83E10) XP[®] Rabbit mAb (Alexa Fluor[®] 647 Conjugate) detects endogenous levels of total CNPase protein.

Source / Purification Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Val81 of human CNPase protein.

Description This Cell Signaling Technology antibody is conjugated to Alexa Fluor[®] 647 fluorescent dye and tested in-house for direct immunofluorescent analysis in rat tissue. The antibody is expected to exhibit the same species cross-reactivity as the unconjugated CNPase (D83E10) XP[®] Rabbit mAb #5664.

Background CNPase (2', 3'-cyclic nucleotide 3'-phosphodiesterase) catalyzes the *in vitro* hydrolysis of 2', 3'-cyclic nucleotides to produce 2'-nucleotides. The *in vivo* molecular function and native substrate of this nucleotide phosphodiesterase remains under investigation (1). High CNPase expression is seen in oligodendrocytes and Schwann cells as CNPase accounts for roughly 4% of the total myelin protein in the central nervous system (2). CNPase binds to tubulin heterodimers and plays a role in tubulin polymerization, and oligodendrocyte process outgrowth (3). Typical myelination is seen in CNPase knock-out mice, but they suffer severe neurodegeneration from axonal loss and oligodendrocytes display abnormal paranodal loop structure prior to axonal degeneration. Paranodal loops typically contact the axolemma in axon-glia signaling; neurodegeneration in CNPase knock-out mice is a secondary consequence of impaired cell-cell communication (4).

Background References

- Esposito, C. et al. (2008) *Biochemistry* 47, 308-19.
- Kozlov, G. et al. (2003) *J Biol Chem* 278, 46021-8.
- Lee, J. et al. (2005) *J Cell Biol* 170, 661-73.
- Lappe-Siefke, C. et al. (2003) *Nat Genet* 33, 366-74.

Species Reactivity Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Applications Key **IF-F:** Immunofluorescence (Frozen)

Cross-Reactivity Key **H:** Human **M:** Mouse **R:** Rat

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