

CRMP2 (Ser-522), phospho-specific

Cat. #	CP2191
Host	Rabbit Polyclonal
Size	100 µl

Background:

CRMP2 (CRMP-62, TOAD-64, DRP-2) is a microtubule associated protein involved in neuron development and axon pathfinding. CRMP2 binds to tubulin heterodimers and promotes microtubule assembly. The overexpression of CRMP2 facilitates the rate of axonal growth, whereas the mutated form that lacks activity toward the microtubule assembly inhibits axonal growth in a dominant negative manner. Phosphorylation of CRMP2 regulates its activity and this type of regulation has been implicated in axon growth cone collapse induced by several repulsive cues. Cdk5 and GSK3 phosphorylation occurs downstream of the repulsive cue, *Sema-3A*. Several residues in CRMP2 are phosphorylated by GSK3 (Ser-518, Thr-514, and Thr-509), and a priming site (Ser-522). These sites are conserved in human CRMP1 and CRMP4, but not in CRMP3 or CRMP5. The priming site is also phosphorylated by Cdk5. In contrast, ROCK phosphorylates Thr-555 leading to LPA, MAG, or Ephrin-A5 mediated growth cone collapse. Thus, CRMP2 phosphorylation status may be a critical element of pathways that control axon pathfinding.

References

- Arimura, N. et al. (2000) *J. Biol. Chem.* 275(31):23973
 Arimura, N. et al. (2005) *Mol. Cell. Biol.* 25(22):9973.
 Uchida, Y. et al. (2005) *Genes to Cells* 10:165.
 Cole, A.R. et al. (2006) *J. Biol. Chem.* 281(24):16591.
 Mimura, F. et al. (2006) *J. Biol. Chem.* 281(23):15970.

Immunogen:

Phospho-CRMP2 (Ser-522) synthetic peptide (coupled to carrier protein) corresponding to amino acids surrounding Ser-522 in human CRMP2. This sequence is conserved in rat and mouse CRMP2, and has homology to the conserved site in CRMP1 and CRMP4, but is not conserved in CRMP3 and CRMP5.

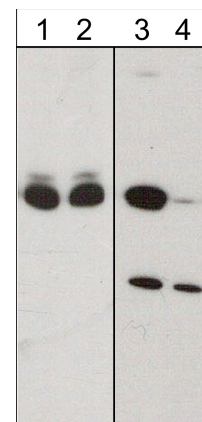
Applications:

WB 1:1000
 ELISA 1:2000

End user should determine optimal dilution for their particular applications and experiments. Western blot membranes were incubated with diluted antibody in 5% non-fat milk, PBS, 0.04% Tween20 for 1 hour at room temperature.

Related Products:

CP2161 CRMP2 (C-terminal Region) Rabbit Polyclonal
 CP2251 CRMP2 (Thr-555), phospho-specific Rabbit Polyclonal
 CX2195 phospho-CRMP2 (Ser-522) Peptide
 RM2721 ROCK-I Mouse Monoclonal
 RM2761 ROCK-II (Central region) Mouse Monoclonal
 CK6200 CRMP2 Phospho-Regulation Antibody Sampler Kit



Western blot image of mouse brain untreated (lanes 1 & 3) or treated with lambda phosphatase (lanes 2 & 4). The blot was probed with anti-CRMP2 (C-terminal Region) (lanes 1 & 2) or anti-CRMP2 (Ser-522) (lanes 3 & 4).

Buffer and Storage:

Rabbit polyclonal, affinity-purified antibody is supplied in 100 µl phosphate-buffered saline, 50% glycerol, 1 mg/ml BSA, and 0.05% sodium azide. Store at -20°C. Do not aliquot. Stable for 1 year.

Specificity:

This antibody was affinity purified using CRMP2 (Ser-522) peptide (without carrier). The antibody detects a 70 kDa* protein corresponding to the molecular mass of CRMP2 on SDS-PAGE immunoblots of human mouse brain, and this band is removed after lambda phosphatase treatment. In addition, this reactivity can be specifically blocked using phospho-CRMP2 (Ser-522) peptide (CX2195).

*All molecular weights (MW) are confirmed by comparison to Bio-Rad Rainbow Markers and to western blot mobilities of known proteins with similar MW.

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