

## Background

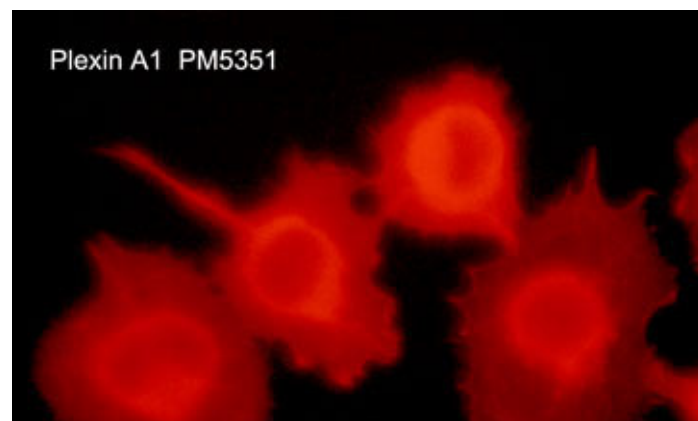
Plexins are a family of large integral membrane proteins that complex with neuropilins to form semaphorin co-receptors. The extracellular region of plexins contains a semaphorin domain, multiple glycine-rich motifs, and MET-related sequences. The cytoplasmic region contains a Sex/Plexin domain and putative tyrosine phosphorylation sites that mediate signal transduction after activation. This region in Plexin-A1 binds the RhoGTPases, Rnd1 and RhoD. Recruitment of Rnd1 has been implicated in the cytoskeletal collapse that occurs after semaphorin-mediated activation of Plexin-A1, while RhoD may block this collapsing activity through interaction with the cytoplasmic region of Plexin-A1. The expression of Plexin-A1, along with the co-receptor Neuropilin-1, is upregulated in neurons after central nervous system injury. The axons from these neurons cannot cross semaphorin 3A-containing regions at the site of injury. Thus, semaphorin 3A and its co-receptors, Plexin-A1 and Neuropilin-1, may have significant roles in axon regeneration after neuronal injury.



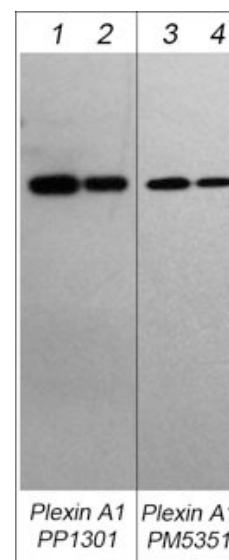
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## Background References

Kolodkin, A.L. et al. (1993) Cell 75:1389.  
Tamagnone, L. et al. (1999) Cell 99:71.  
Takahashi, T. & Strittmatter, S.M. (2001) Neuron 29:429.



Immunocytochemical labeling of Plexin A1 in aldehyde fixed and NP-40 permeabilized human NCI-H1299 lung carcinoma cells. The cells were labeled with mouse monoclonal anti-Plexin A1 (PM5351). The antibody was detected using goat anti-mouse DyLight® 594.



Western blots showing mouse recombinant Plexin-A1 extracellular domain (lanes 1-4). These blots were probed with rabbit polyclonal anti-Plexin-A1 (PP1301) at 1:250 (lane 1) and 1:1000 (lane 2) or with mouse monoclonal anti-Plexin A1 (PM5351) at 1:250 (lane 3) and 1:1000 (lane 4).

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### Immunogen

**Uniprot ID:** Q9UIW2

Clone M535 was generated from a Plexin-A1 synthetic peptide (coupled to carrier protein) corresponding to a region within the N-terminal half of the semaphorin domain in human Plexin-A1. This sequence is highly conserved in rat and mouse Plexin-A1, and has low homology to other Plexin family members.

### Buffer and Storage

Mouse monoclonal, affinity-purified antibody is supplied in 100µl phosphate-buffered saline, 50% glycerol, 1 mg/ml BSA, and 0.05% sodium azide. Store at -20°C. Stable for 1 year.

### Applications

WB	1:500
ELISA	1:1000
IP	1:50
ICC	1:100
IHC	1:100

### Species Reactivity

Hu, Rt, Ms

**Isotype:** IgG1

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, Tris buffer, 0.04% Tween20 for 1 hour at room temperature.

Abbreviations: ELISA (Cap) = ELISA capture, ICC = immunocytochemistry, IHC = immunohistochemistry, IP = immunoprecipitation, WB = western blot  
Hu = Human, Ms = Mouse, Rt = Rat, Ck = Chicken, F = Frog, B = Bovine

### Specificity

Clone M535 was affinity purified using Plexin A1 (Sema Domain) peptide (without carrier). The antibody detects a 220 kDa\* protein corresponding to the apparent molecular mass of Plexin-A1 on SDS-PAGE immunoblots of neonatal mouse brain, and detects a recombinant mouse Plexin A1 protein containing the extracellular region.

\*All molecular weights (MW) are confirmed by comparison to MW standards and to western blot mobilities of known proteins with similar MW.

"Native" western blot utilizes non-reducing sample buffer (no mercaptoethanol or SDS), normal SDS-PAGE gel electrophoresis, and no methanol in transfer buffers.

### Related Products

PP1301 Plexin A1 (Sema Domain) Rabbit Polyclonal

PP1471 Plexin A1 (Sema Domain) Rabbit Polyclonal

PK6580 Plexin A1, B1, and D1 Receptors Antibody Sampler Kit

SK7750 Sema-3A & NRP1/Plexin A1 Receptor Immunocytochemistry Kit

SK6190 Sema-3A and NRP1/Plexin A1 Receptor Antibody Sampler Kit



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