Supplemental Figure 1. Hippocampal localization of MAG induction. Immunohistochemical experiments were performed to visualize hippocampal MAG expression in adult, aged cognitively intact and aged cognitively impaired rats, using NFh as a marker of neuronal cytoskeleton. In adults and aged intact rats, low levels of MAG were observed in CA1, CA3 and DG, both in and around axons. In aged impaired rats, MAG induction was apparent throughout the hippocampus, and localized to non-neuronal projections and neuronal axons with some somatic staining observed. Blue: Hoechst; Green: NFh; Red: MAG; scale bar=25μM.

Supplemental Figure 2. Localization of hippocampal Nogo-A. In adult and aged intact hippocampus, Nogo-A immunoreactivity localized to a subset of nuclei, with minimal expression detected in NFh^- cellular projections in CA1 and CA3. A subset of Nogo-A^+ nuclei were neuronal, as indicated by strong NFh-immunoreactivity in the surrounding somatic cytoskeleton. Increased Nogo-A expression was evident in CA1, CA3 and DG of aged impaired rats, in both nuclei and NFh^-, putatively oligodendrocytic, projections. Nogo-A immunoreactivity also localized to neuronal somata and proximal axons in CA3. Blue: Hoechst; Green: NFh; Red: Nogo-A; scale bar=25μM.

Supplemental Figure 3. Hippocampal localization of OMgp upregulation. Immunohistochemical experiments were performed to assess the localization of OMgp in adult, aged cognitively intact and aged cognitively impaired rats, with NFh included as a marker of neuronal somata and axons. In adults and aged intact rats, low levels of OMgp were observed in CA1 and DG, both in and around axons. A higher degree of diffuse, peri-axonal staining was evident in CA3. OMgp upregulation was apparent throughout the hippocampus as diffuse, peri-axonal staining in CA1, CA3 and DG. Blue: Hoechst; Green: NFh; Red: OMgp; scale bar=25μM.

Supplemental Figure 4. Localization of increased hippocampal NgR1. The distribution of the MAI receptor NgR1 was assessed in adult, aged cognitively intact and aged cognitively impaired rats. In adult and aged intact rats, NgR1 immunoreactivity was evident as somatic, peri-nuclear staining and in a subset of NFh^{+} cellular projections. NgR1 immunoreactivity was weaker in aged intact rats compared to adults in all three subregions assessed. In aged impaired rats, NgR1 intensity was markedly increased in somata and thick cellular projections originating in the pyramidal cell layer of CA1. NgR1 induction was also evident in NFh-containing neuronal somata and axons in CA3 and DG. Blue: Hoechst; Green: NFh; Red: NgR1; scale bar=25μM.

Supplemental Figure 5. Immunohistochemistry negative control. To ensure the signal specificity of immunohistochemical visualization of MAIs, a negative control was incubated with secondary antibodies and Hoechst, with primary antibodies omitted. No non-specific staining was observed in the Cy2 (anti-mouse), Cy3 (anti-goat), or Cy5 (anti-rabbit) channels, and only a small amount of background signal was observed in the Cy2 channel, which did not interfere with visualization of heavy neurofilament (mouse-anti-NFh).