

## Supplementary Material

### Supplementary figure 1:

#### Postnatal DRG neurons of wild-type and NgR1 mutants are inhibited by MAG

**A:** Postnatal-day 14 DRG neurons isolated from wild-type (*NgR1*<sup>+/+</sup>; n= 4) and *NgR1*-deficient (*NgR1*<sup>-/-</sup>; n= 4) mice were cultured on CHO control or CHO-MAG feeder layers and stained with TuJ1. **B:** Quantification of neurite outgrowth revealed significant inhibition of wild-type and *NgR1*<sup>-/-</sup> neurons on CHO-MAG cells (black bars) compared to CHO cells (gray bars). The number of neurites quantified for each condition is indicated in parentheses. Results are presented as mean ± SEM from four independent experiments. Asterisk, p<0.05 significantly different from neurons grown on CHO feeder cells; n.s. indicates that there was no significant difference between wild-type and *NgR1*<sup>-/-</sup> DRG neurons grown on CHO-MAG cells; Kruskal-Wallis one-way ANOVA (post-hoc Dunn's test). Scale bar is equal to 50 μm.

### Supplementary figure 2:

#### MAG dose-response curve with wild-type and *NgR1*<sup>-/-</sup> CGNs

**A:** Immunoblotting for MAG revealed similar expression levels of protein between CHO-MAG cells and adult rat spinal cord extracts. Ten micrograms of total protein from CHO cell membranes, CHO-MAG membranes, or spinal cord (SC) extracts were loaded on a Western blot. MAG-Fc is shown as a positive control. **B:** P7 CGNs isolated from wild-type (*NgR1*<sup>+/+</sup>; n= 5; black bars) and *NgR1*-deficient (*NgR1*<sup>-/-</sup>; n= 5; gray bars) mice cultured on CHO control or CHO-MAG membranes adsorbed to polylysine coated cell culture dishes. To examine whether decreasing the MAG dose results in a difference in neurite length between wild-type and *NgR1*<sup>-/-</sup> neurons, CHO and CHO-MAG

membranes were mixed 1:1, 1:4, and 1:16. As expected, decreasing the MAG dose results in longer neurites, however, at none of the MAG concentrations assayed, a significant difference between wild-type and *NgRI*<sup>-/-</sup> neurons was observed. The number of neurites quantified for each condition is indicated in parentheses. Results are presented as mean  $\pm$  SEM from five independent experiments; n.s. indicates that there was no significant difference between wild-type and *NgRI*<sup>-/-</sup> neurons. Kruskal-Wallis one-way ANOVA (post-hoc Dunn's test).