

## Supplemental Information

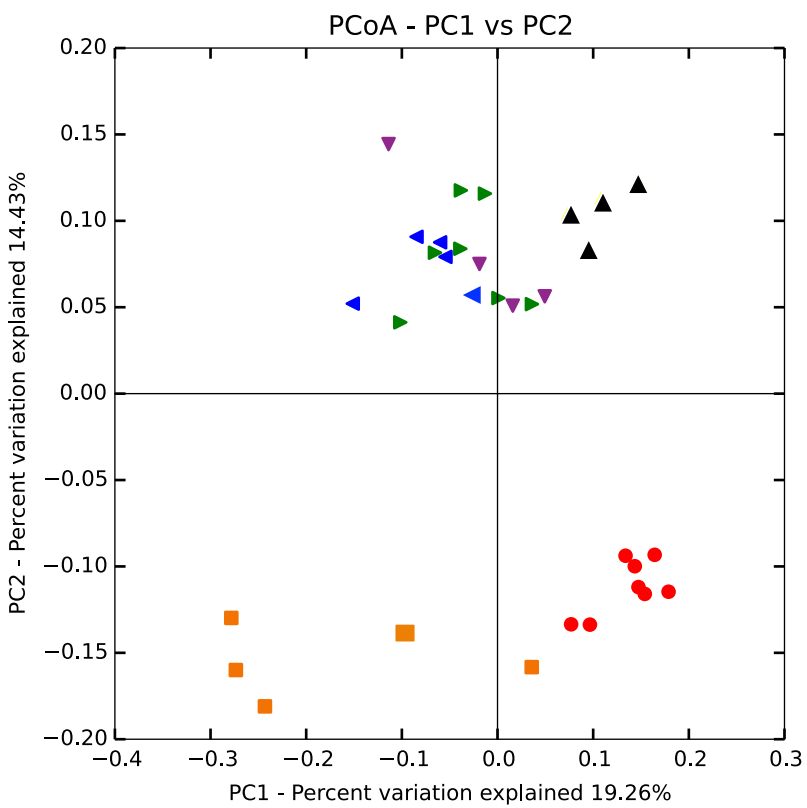
**Supplementary Table 1 – Summary of Mouse Breeding and observation cohorts**

Group	Breeding	Housing Partners (from birth)	Housing Partners (post-weaning)	Gut Microbiota	Incidence of Diabetes	Related Figures
1	<i>Nod2</i> <sup>+/-</sup> x <i>Nod2</i> <sup>+/-</sup>	<i>Nod2</i> <sup>-/-</sup> and <i>Nod2</i> <sup>+/+</sup>	<i>Nod2</i> <sup>-/-</sup> and <i>Nod2</i> <sup>+/+</sup>	Shared	Similar	Figure 1A (CH)
2	<i>Nod2</i> <sup>+/-</sup> x <i>Nod2</i> <sup>+/-</sup>	<i>Nod2</i> <sup>-/-</sup> and <i>Nod2</i> <sup>+/+</sup>	Housed by genotype	Different	<i>Nod2</i> <sup>-/-</sup> have reduced diabetes vs <i>Nod2</i> <sup>+/+</sup>	Figure 1B (NCH)
3	<i>Nod2</i> <sup>-/-</sup> x <i>Nod2</i> <sup>-/-</sup>	<i>Nod2</i> <sup>-/-</sup>	<i>Nod2</i> <sup>-/-</sup>	Different	NCH <i>Nod2</i> <sup>-/-</sup> have reduced diabetes vs NCH <i>Nod2</i> <sup>+/+</sup>	Figure 1C (CH and NCH)
4	<i>Nod2</i> <sup>+/+</sup> x <i>Nod2</i> <sup>+/+</sup>	<i>Nod2</i> <sup>+/+</sup>	<i>Nod2</i> <sup>+/+</sup>	Different	NCH <i>Nod2</i> <sup>-/-</sup> have reduced diabetes vs NCH <i>Nod2</i> <sup>+/+</sup>	Figure 1C (CH and NCH)

CH = Cohoused - both genotypes in each cage (*Nod2*<sup>+/+</sup> and *Nod2*<sup>-/-</sup>)

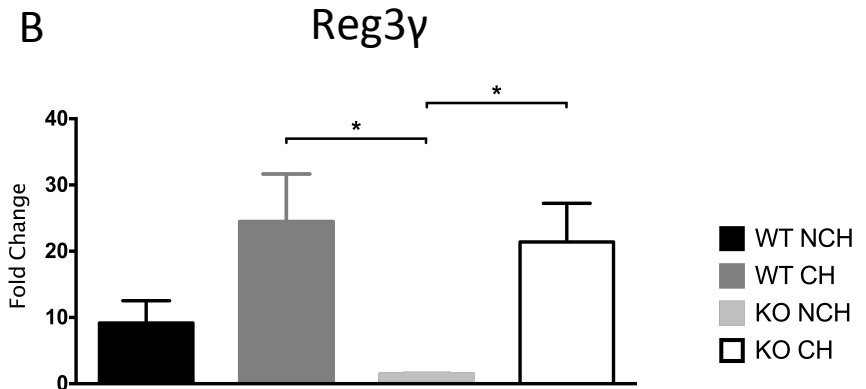
NCH = Non-cohoused - only one genotype in each cage (*Nod2*<sup>+/+</sup> or *Nod2*<sup>-/-</sup>)

A

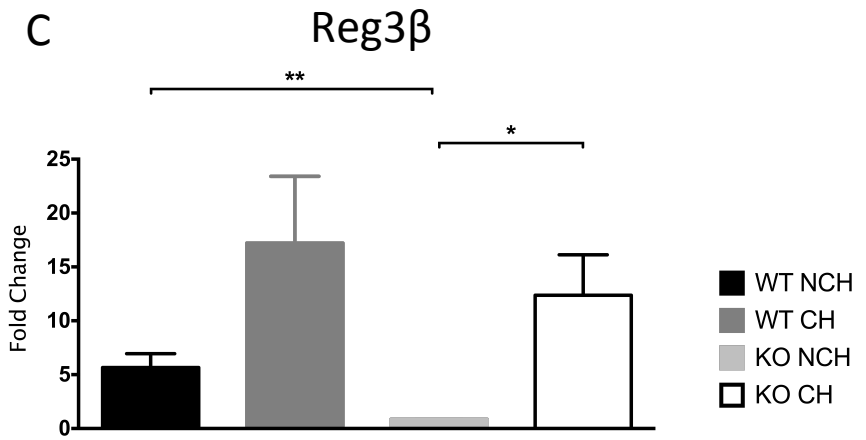


- ▶ *Nod2*<sup>+/+</sup>NOD – 3 weeks of age
- ▲ *Nod2*<sup>+/+</sup>NOD NCH – 8-9 weeks of age
- ▼ *Nod2*<sup>+/+</sup>NOD CH – 8-9 weeks of age
- *Nod2*<sup>-/-</sup>NOD – 3 weeks of age
- *Nod2*<sup>-/-</sup>NOD NCH – 8-9 weeks of age
- ◀ *Nod2*<sup>-/-</sup>NOD CH – 8-9 weeks of age

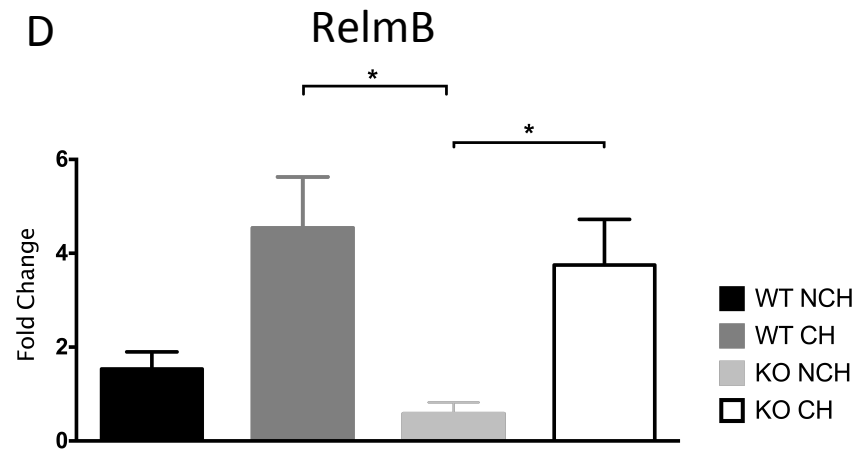
B

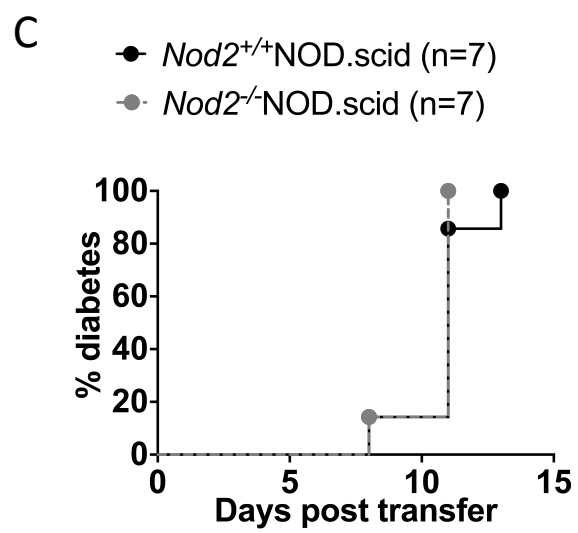
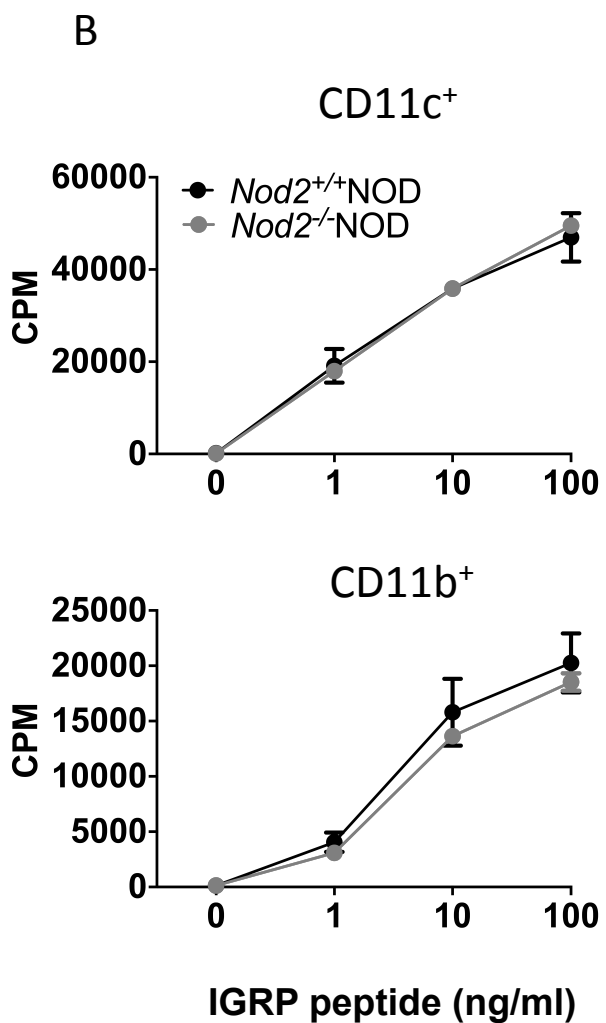
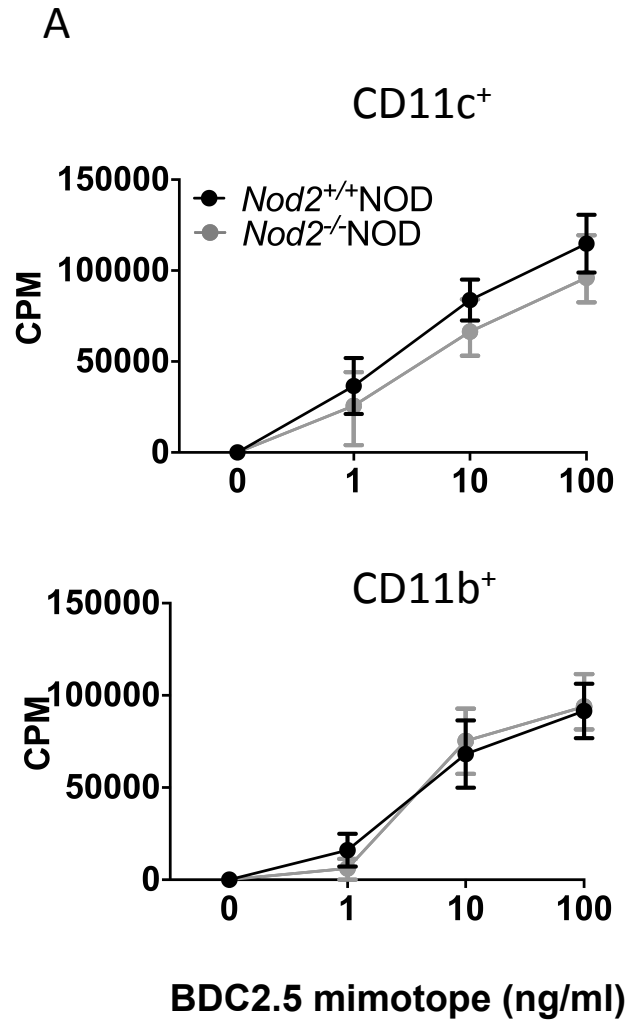


C

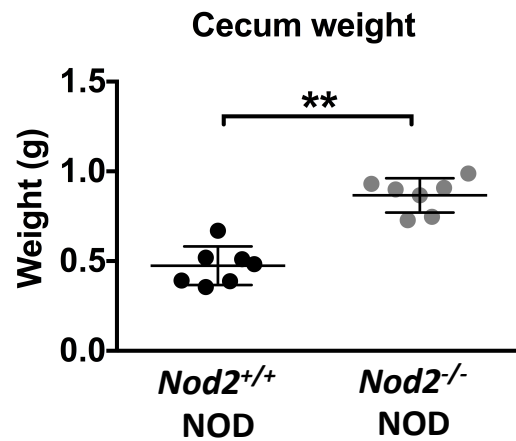


D

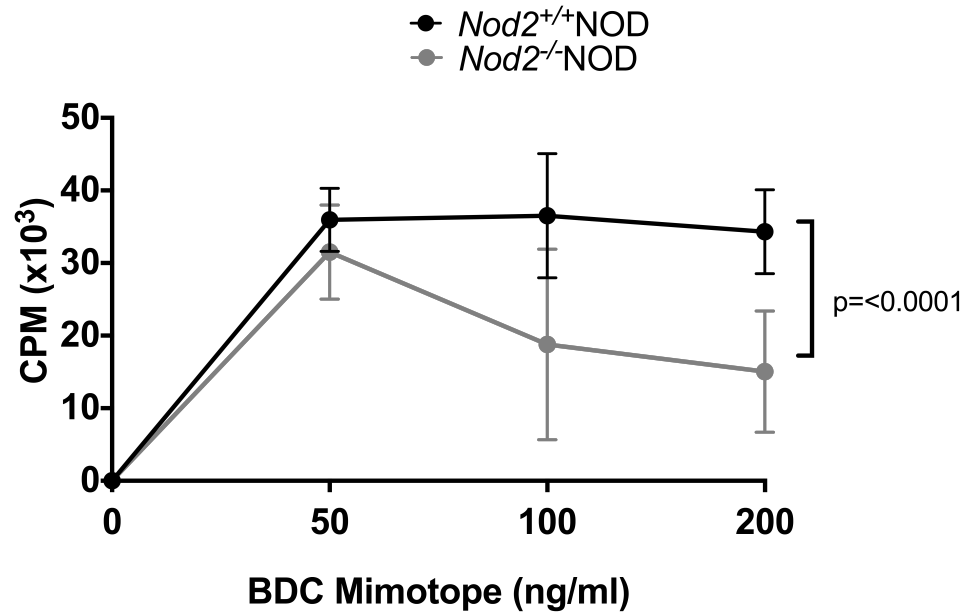




A



B



C

