

Supplement

Suppl. Table S1. Average litter size of *Gnai2*-matings.

Mating strategy	Ø litter
<i>Gnai2</i> ^{+/+} x <i>Gnai2</i> ^{+/+}	6.3 ± 2.5 (n=11)
<i>Gnai2</i> ^{+/-} x <i>Gnai2</i> ^{+/-}	5.6 ± 3.2 (n=47)
<i>Gnai2</i> ^{-/-} x <i>Gnai2</i> ^{-/-}	3.5 ± 2.2 (n=13)

Suppl. Table S2. Mendelian ratio of littermates born from heterozygous *Gnai2*-matings on a 129/Sv background. Statistics is based on Chi-square analyses.

Genotype	P21	% expected
<i>Gnai2</i> ^{+/+}	177 (29.9%)	25
<i>Gnai2</i> ^{+/-}	356 (60.1%)	50
<i>Gnai2</i> ^{-/-}	59 (10.0%)	25
	592 (116 litter)	
p value	n.s.	

Suppl. Table S3. Mendelian ratio of P21 littermates born from heterozygous *Gnai3*-matings on a C57BL/6N or 129/Sv background. Statistics is based on Chi-square analyses.

Genotype	C57BL/6N	129/Sv	% expected
<i>Gnai3</i> ^{+/+}	38 (24.5%)	29 (19.1%)	25
<i>Gnai3</i> ^{+/-}	78 (50.3%)	85 (55.9%)	50
<i>Gnai3</i> ^{-/-}	39 (25.1%)	39 (25%)	25
	155 (18 litter)	152 (31 litter)	
p value	n.s.	n.s.	

Suppl. Table S4. Average litter size of *Gnai3*-matings.

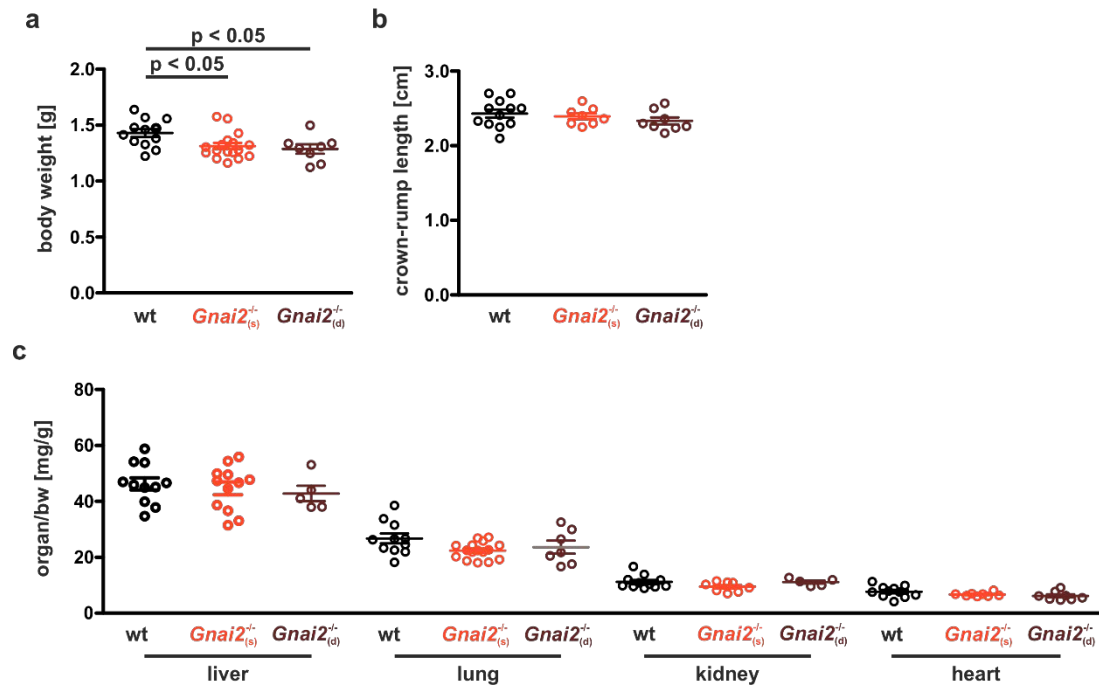
Mating strategy	Ø litter
<i>Gnai3</i> ^{+/+} x <i>Gnai3</i> ^{+/+}	5.1 ± 1.5 (n=8)
<i>Gnai3</i> ^{+/-} x <i>Gnai3</i> ^{+/-}	6.4 ± 2.1 (n=22)
<i>Gnai3</i> ^{-/-} x <i>Gnai3</i> ^{-/-}	4.9 ± 3 (n=8)

Suppl. Table S5. Mendelian ratio of littermates born from *Gnai2*^{fl/fl}; *Gnai3*^{fl/+}; *ShhCre*^{tg/+} X *Gnai2*^{fl/fl} *Gnai3*^{fl/fl}; *ShhCre*^{tg/+}-matings. Statistics is based on Chi-square analyses.

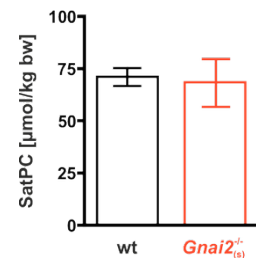
Genotype	P21	% expected
<i>Gnai2</i> ^{fl/fl} ; <i>Gnai3</i> ^{fl/+}	14 (17.5%)	25
<i>Gnai2</i> ^{fl/fl} ; <i>Gnai3</i> ^{fl/fl}	25 (31.25%)	25
<i>Gnai2</i> ^{fl/fl} ; <i>Gnai3</i> ^{fl/+} ; <i>ShhCre</i> ^{tg/+}	24 (30%)	25
<i>Gnai2</i> ^{fl/fl} ; <i>Gnai3</i> ^{fl/fl} ; <i>ShhCre</i> ^{tg/+}	15 (18,75%)	25
	80 (8 litter)	
p value	n.s.	

Suppl. Table S6. Area under the curve of the time-response curves of the depicted parameters of wt and *Gnai2*_(s)^{-/-} mice shown in Figure 8.

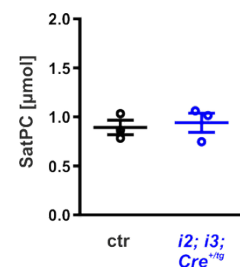
AUC (0 - 120 min)	wt	<i>Gnai2</i> _(s) ^{-/-}	p-value
resistance [(cmH ₂ O/ml/sec) min]	86.2±2.3	83.5±1.5	n.s.
pulmonary artery pressure [cmH ₂ O min]	262.3±34.3	379.6±79.6	n.s.
max. insp. flow [(μl/sec) min]	356600±18120	414200±4810	p < 0.05
max. exp. flow [(μl/sec) min]	274400±11910	326500±8837	p < 0.01
tidal volume [ml min]	20050±1380	27050±1398	p < 0.01
compliance [(μl/cmH ₂ O) min]	3633 ± 260.9	4852 ± 258.3	p < 0.01



Supplementary Figure S1. Somatometric and organometric analysis of neonatal mice. (a) Body weight of new-born wt (black), *Gnai2*^{-/-}(s) (red) and *Gnai2*^{-/-}(d) (brown) mice was significantly reduced compared to wt animals. (b) Crown-rump length and (c) organ to body weight ratio of new-born wt, *Gnai2*^{-/-}(s) and *Gnai2*^{-/-}(d) mice were equal. The data shown were obtained from 5 to 16 animals per group. Mean ± SEM. # = p < 0.05 Student's t test between *Gnai2*^{-/-}(s) and *Gnai2*^{-/-}(d).



Supplementary Figure S2. Quantification of saturated phosphatidylcholine (SatPC) in lung tissue. SatPC levels of new-born wt and *Gnai2*^{-/-} mice were equal. Mean ± SEM.



Supplementary Figure S3. Quantification of saturated phosphatidylcholine (SatPC) in lung tissue of Alveolar Type II cell-specific *Gnai2*; *Gnai3* double-deficient mice. SatPC levels of 11-week-old control (*Gnai2*^{fl/fl}; *Gnai3*^{fl/fl}) and double-deficient *Gnai2*^{fl/fl}; *Gnai3*^{fl/fl}; *ShhCre*^{+/tg} mice. Mean ± SEM.