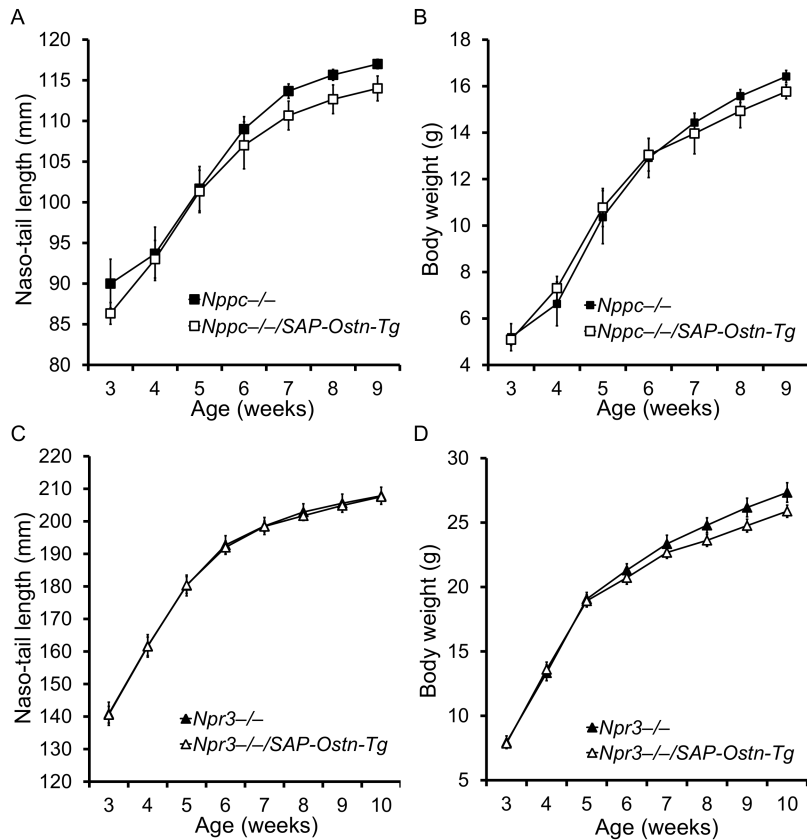


Supplemental Figure 1. Growth curves for *SAP-Ostn-Tg* and wild-type female mice.

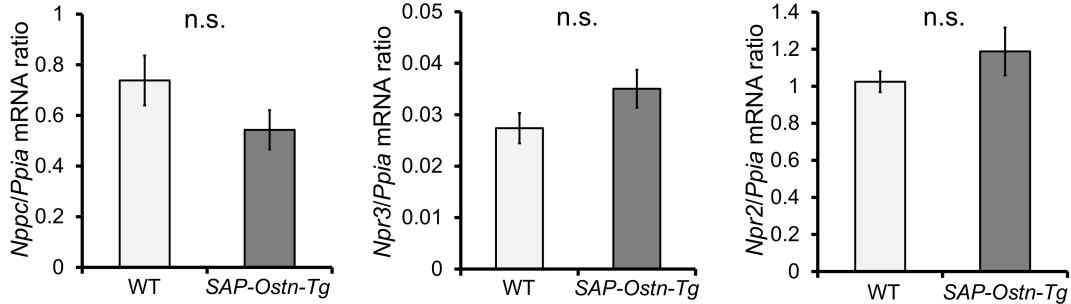
(A–C) Growth curves based on naso-anal length (A), naso-tail length (B), and body weight (C) of wild-type (open square), line 33 *SAP-Ostn-Tg* (closed triangle), and line 51 *SAP-Ostn-Tg* (closed square) female mice measured every week from the age of three to ten weeks. Female *SAP-Ostn-Tg* mice showed the identical phenotypes to those observed in male *SAP-Ostn-Tg* mice.  $n = 5$ , each.  $*P < 0.05$ ,  $**P < 0.01$  vs. wild-type mice, by one-way ANOVA followed by Tukey-Kramer test.



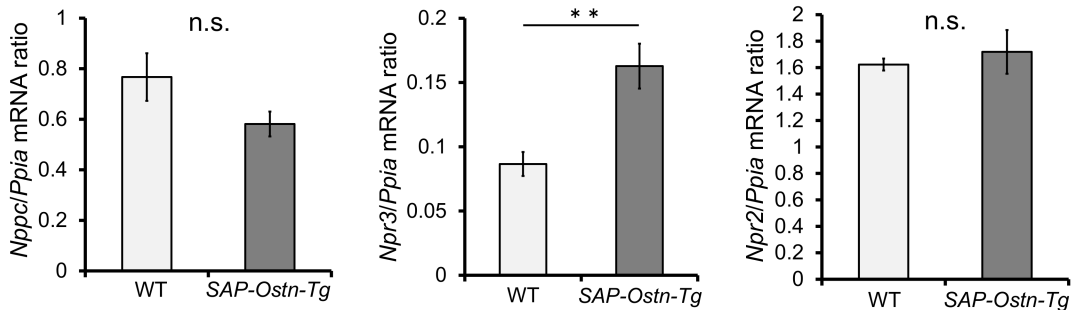
Supplemental Figure 2. Growth curves based on naso-tail length and body weight of *Nppc*<sup>-/-</sup> and *Nppc*<sup>-/-</sup>/*SAP-Ostn-Tg*, and *Npr3*<sup>-/-</sup> and *Npr3*<sup>-/-</sup>/*SAP-Ostn-Tg* mice.

(A, B) Naso-tail length (A) and body weight (B) of *Nppc*<sup>-/-</sup> (closed square) and *Nppc*<sup>-/-</sup>/*SAP-Ostn-Tg* (open square) mice measured every week from the age of three to nine weeks. *n* = 3, each. (C, D) Naso-tail length (C) and body weight (D) of *Npr3*<sup>-/-</sup> (closed triangle) and *Npr3*<sup>-/-</sup>/*SAP-Ostn-Tg* (open triangle) mice measured every week from the age of three to ten weeks. *n* = 7, each. Student's *t*-test was used for statistical analysis.

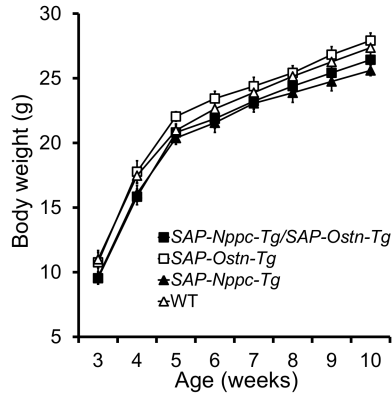
### Tibial cartilages



### Lumbar vertebrae

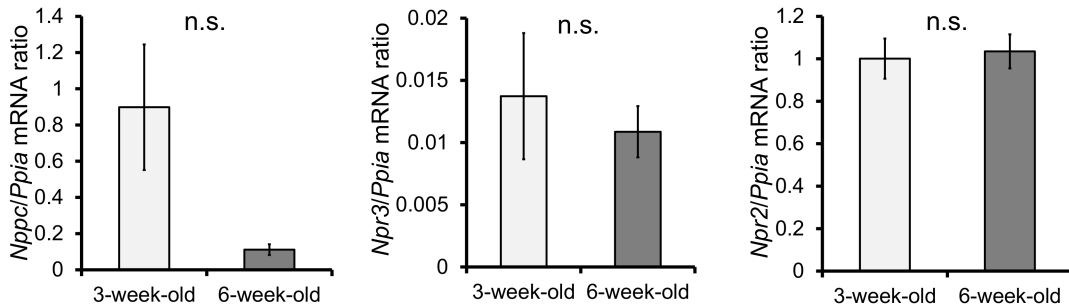


Supplemental Figure 3. mRNA expression of genes in wild-type and *SAP-Ostn-Tg* mice at three weeks of age. mRNA expression of *Nppc*, *Npr3*, and *Npr2* in epiphyseal cartilages of tibias and lumbar vertebrae of three-week-old wild-type and *SAP-Ostn-Tg* mice. Data were normalized to peptidylprolyl isomerase A (*Ppia*) mRNA levels.  $n = 5$ , each in the analysis of tibial cartilages.  $n = 4$ , each in the analysis of lumbar vertebrae.  $**P < 0.01$ , by Student's *t*-test. n.s., not significant. Data are representative of at least 2 independent experiments.

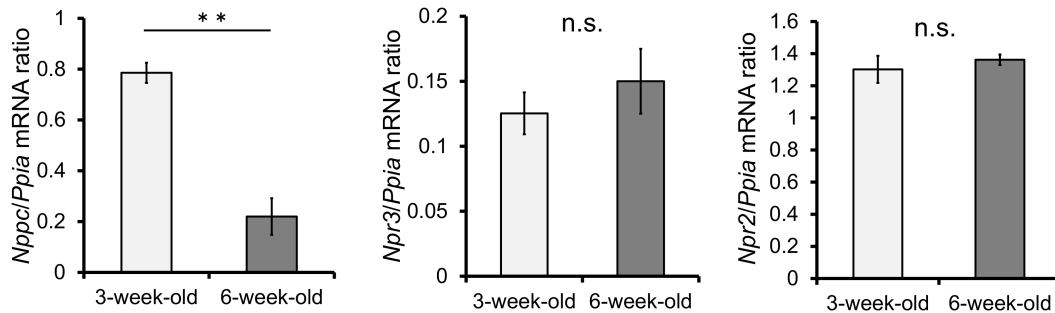


Supplemental Figure 4. Growth curves based on body weight of wild-type (open triangle), *SAP-Nppc-Tg* (closed triangle), *SAP-Ostn-Tg* (open square), and *SAP-Nppc-Tg/SAP-Ostn-Tg* (closed square) mice measured every week from the age of three to ten weeks.  $n = 6, 6, 6,$  and  $7$  in wild-type, *SAP-Nppc-Tg*, *SAP-Ostn-Tg*, and *SAP-Nppc-Tg/SAP-Ostn-Tg* mice, respectively. One-way ANOVA followed by Tukey-Kramer test was used for statistical analysis.

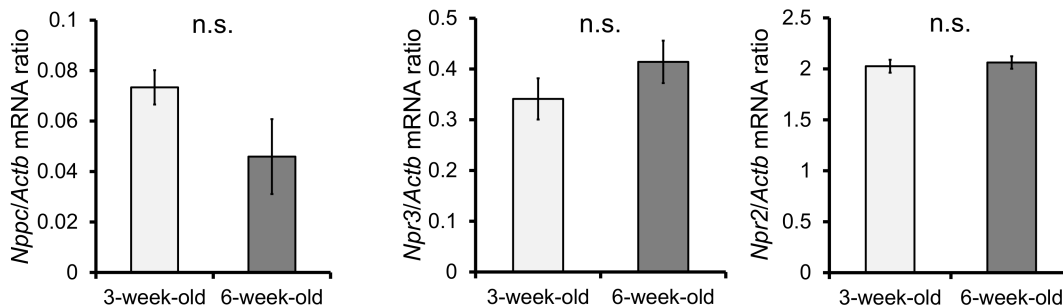
## Tibial cartilages



## Lumbar vertebrae



## Blood vessels



Supplemental Figure 5. mRNA expression of genes in wild-type mice at three and six weeks of age. mRNA expression of *Nppc*, *Npr3*, and *Npr2* in epiphyseal cartilages of tibias, lumbar vertebrae, and blood vessels of three- and six-week-old wild-type mice. Data from tibial cartilages and lumbar vertebrae were normalized to *Ppia* mRNA levels. Data from blood vessels were normalized to actin, beta (*Actb*) mRNA levels.  $n = 4$ , each. \*\* $P < 0.01$ , by Student's *t*-test. n.s., not significant. Data are representative of at least 2 independent experiments.