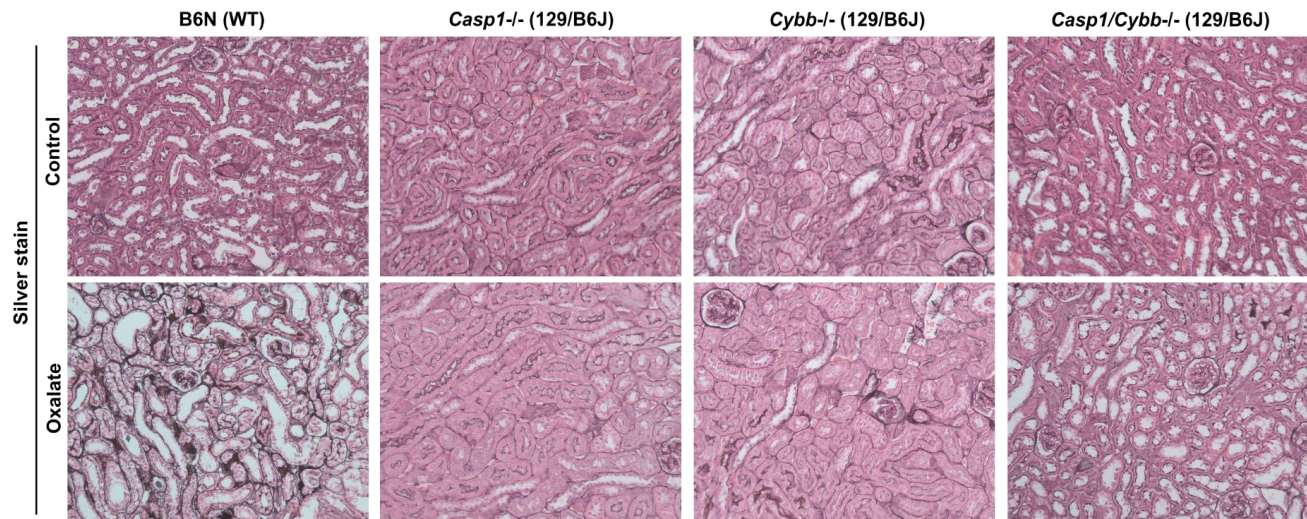


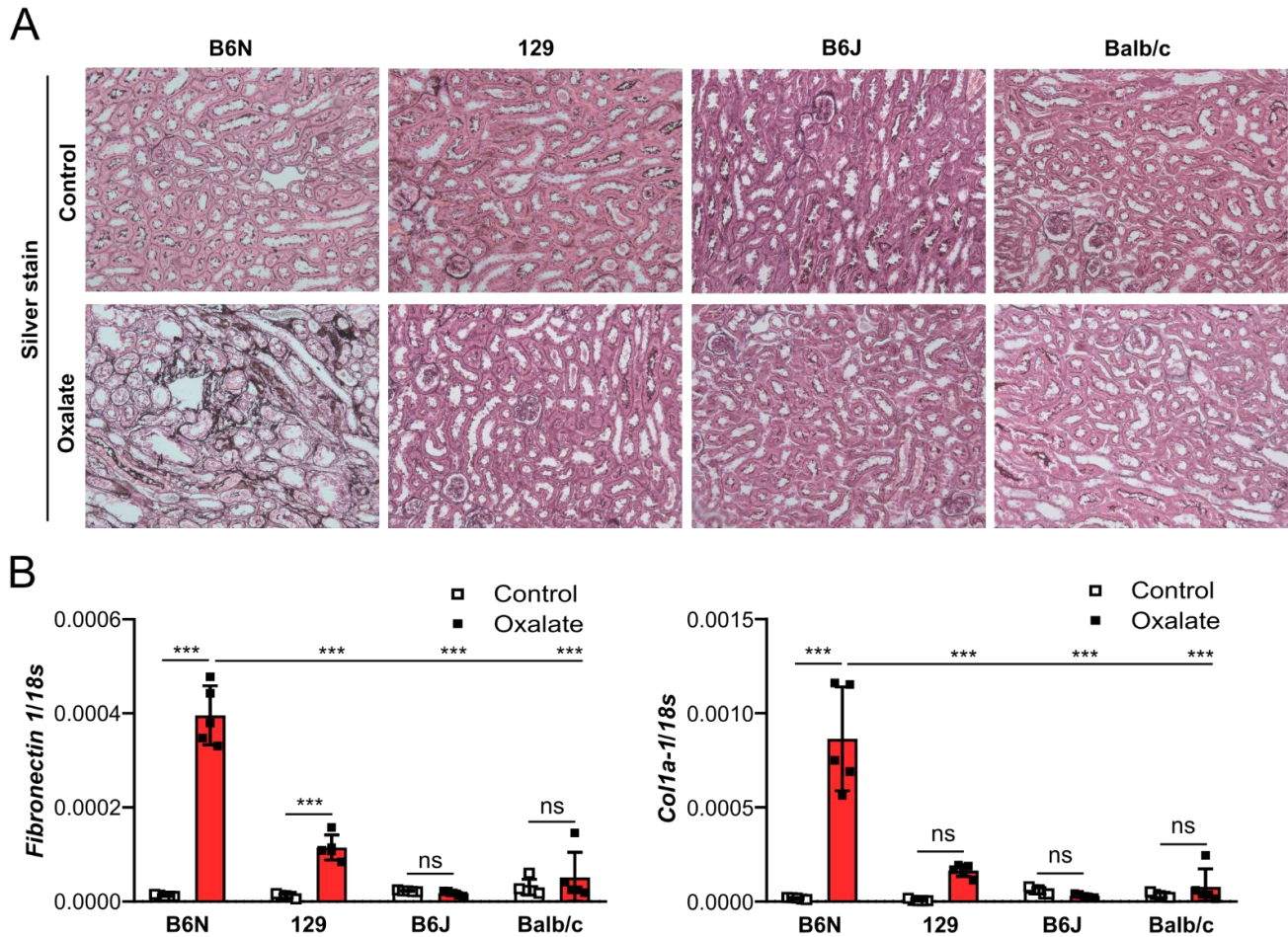
Supplementary Material

1 Supplementary Figures and Tables

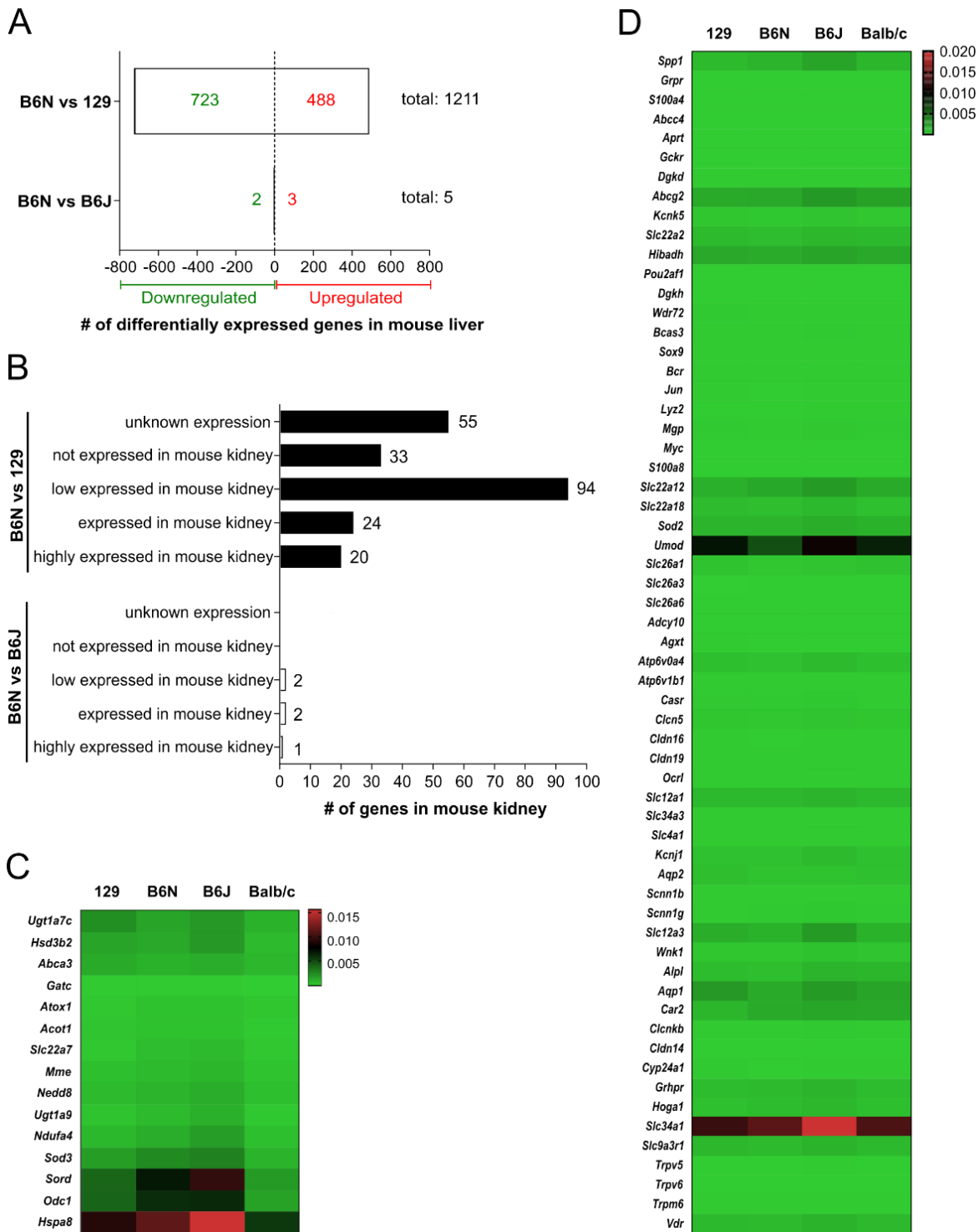
1.1 Supplementary Figures



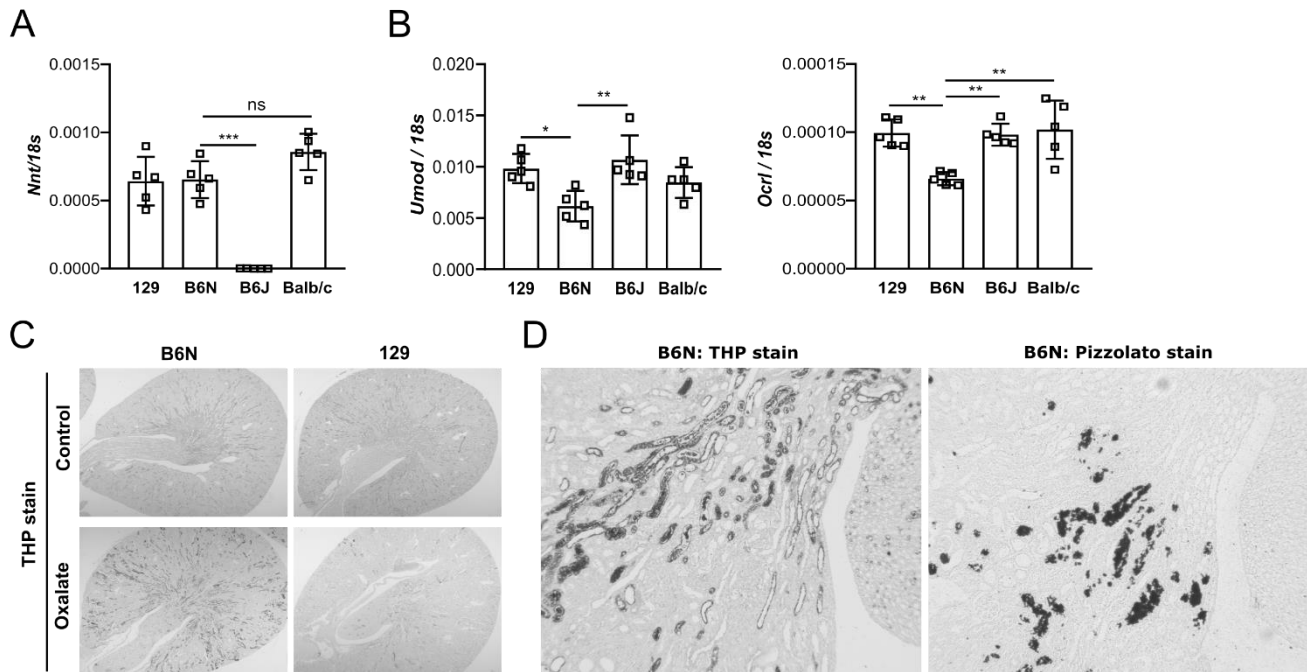
Supplementary Figure S1. Knockout mice on a 129/B6J background do not display interstitial fibrosis upon feeding an oxalate-rich diet. C57BL/6N WT (B6N) and *Casp1*^{-/-}, *Cybb*^{-/-}, *Casp1/Cybb*^{-/-} deficient (129/B6J background) mice were either fed a control diet or an oxalate-rich diet for 14 days. Silver staining to illustrate interstitial fibrosis in kidney sections of all four mouse strains. Original magnification x200.



Supplementary Figure S2. B6N but not 129, B6J and Balb/c mice develop fibrosis upon feeding an oxalate-rich diet. B6N, 129, B6J and Balb/c mice were either placed on a control diet or an oxalate-rich diet for 14 days. (A) Silver staining to illustrate interstitial fibrosis in kidney sections of all four inbred mouse strains. Original magnification x200. (B) Gene expression of the fibrosis marker Fibronectin 1 and collagen (col)1 α 1 in kidney tissue determined by RT-PCR. Data are mean \pm SD from 5 mice per group. *** $p < 0.001$; ns, not significant.

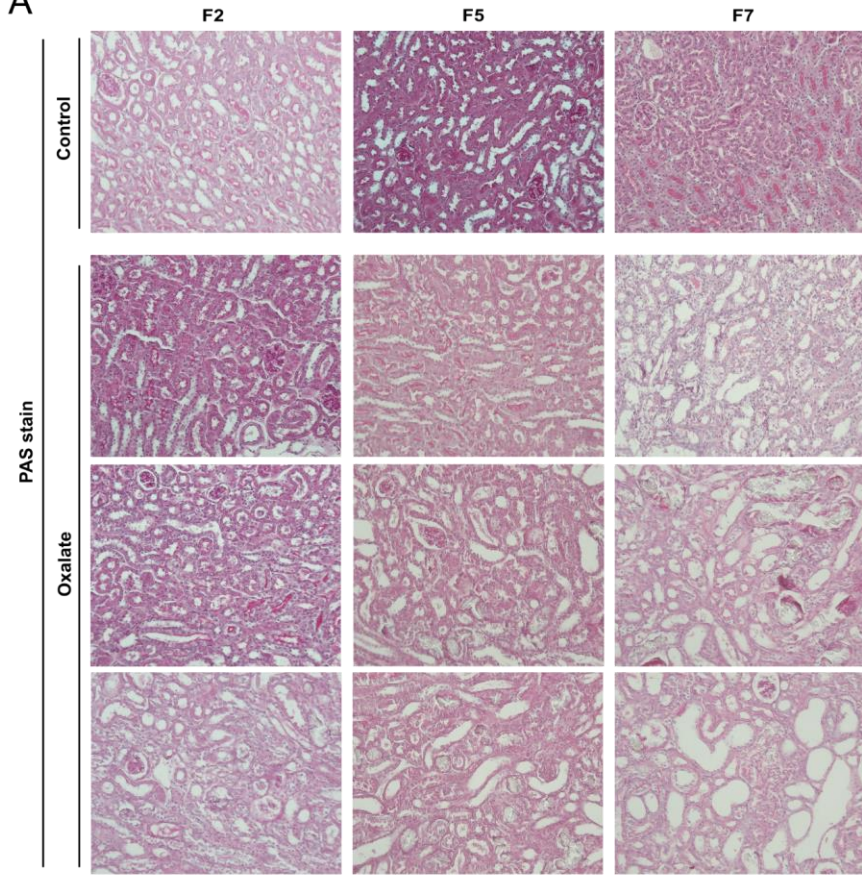


Supplementary Figure S3. Genetic variations in liver and kidney between B6N, 129, B6J and Balb/c mice. (A) Liver gene array data from healthy B6N, 129 and B6J mice (GSE43106). (B) Number of genes that are not, low, medium or highly expressed in the mouse kidney or with unknown expression according to the NCBI gene database (<https://www.ncbi.nlm.nih.gov/gene>). (C and D) Heat maps illustrating intrarenal mRNA expression levels of genes (ct values) identified via the NCBI gene database (C, 15 genes) and genes related to kidney stone disease (D, 64 genes) from healthy B6N, B6J, 129 and Balb/c mice determined by RT-PCR. Data are mean \pm SD from 5 mice per group.

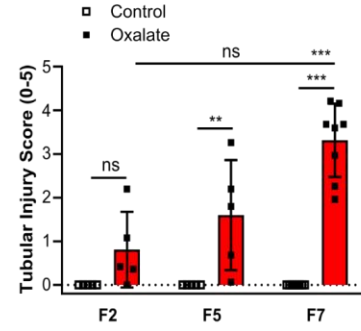


Supplementary Figure S4. Tamm-Horsfall Protein expression increases after feeding B6N mice an oxalate-rich diet. (A and B) Intrarenal mRNA expression levels of *Nnt* (A), *Umod* and *Ocr1* (B) in healthy B6N, 129, B6J and Balb/c mice determined by RT-PCR (one-way ANOVA). Data are mean \pm SD from 5 mice per group. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$; ns indicates not significant. (C) Immunohistochemistry staining of kidney sections for Tamm-Horsfall Protein (THP) in B6N and 129 mice fed either a control or oxalate-rich diet for 14 days. Original magnification $\times 25$. (D) THP and Pizzolato staining of kidney sections from B6N mice fed an oxalate-rich diet for 14 days. Original magnification $\times 400$.

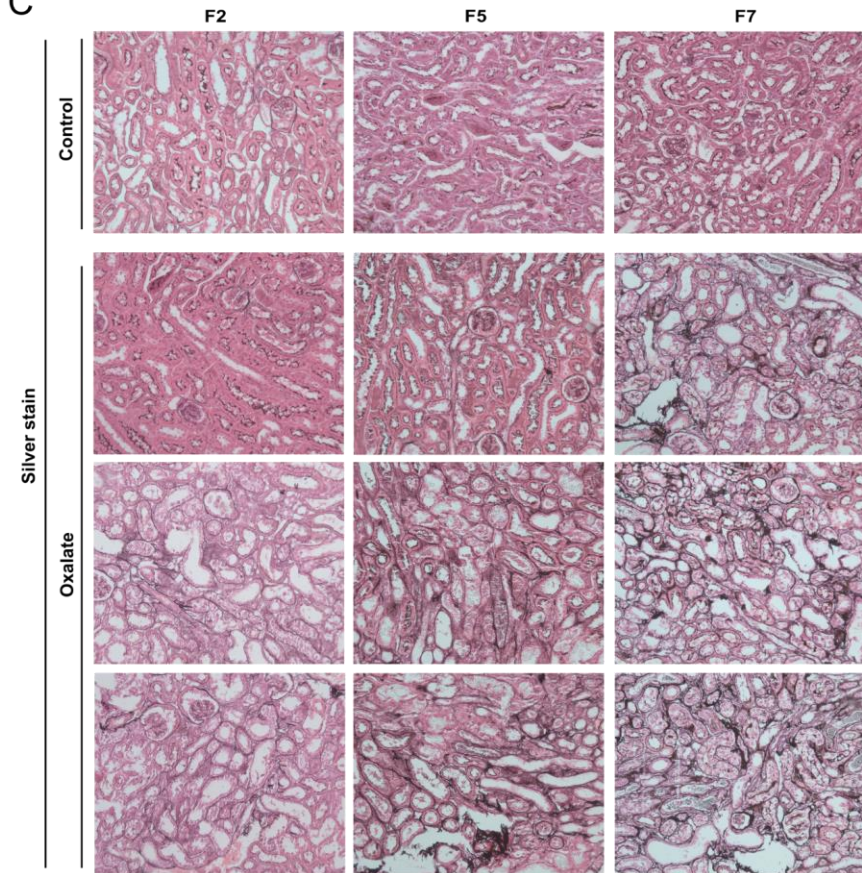
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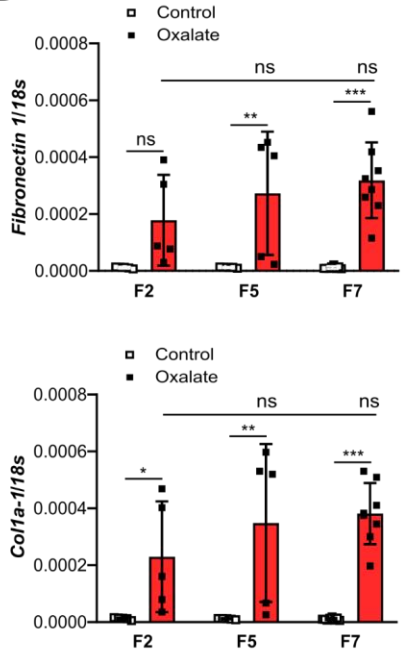
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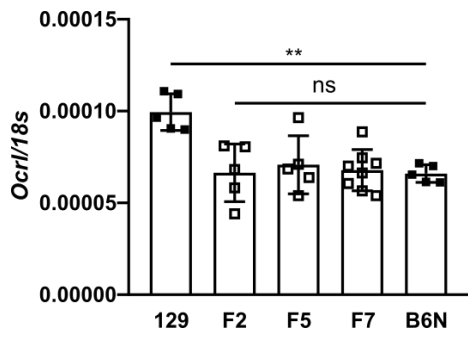
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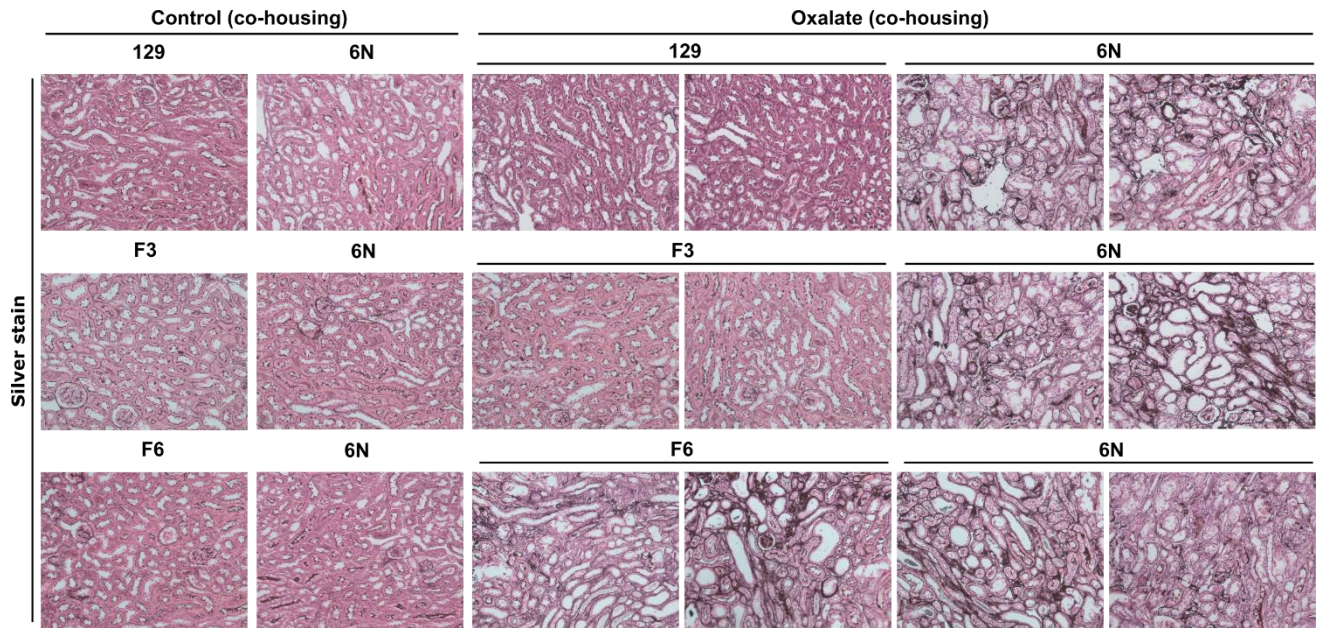
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Supplementary Figure S5. Backcrossing of 129 mice on a B6N background induced CaOx-crystal-related tubular injury and fibrosis. 129/B6N mice were generated by breeding 129 with B6N mice for up to 7 generations (F2, F5 and F7). 129/B6N F2, F5 and F7 mice were either placed on a control diet or oxalate-rich diet for 14 days. (A and B) Images of PAS stained kidney section (A) and quantification of the tubular injury score (B). Original magnification x200. (C) Silver stain of kidney sections illustrates interstitial fibrosis. Original magnification x200. (D) Intrarenal mRNA expression levels of *Fibronectin 1* and *Colla1* determined by RT-PCR. Data are mean \pm SD from 5 to 8 mice per group. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$; ns, not significant.



Supplementary Figure S6. Intrarenal mRNA expression levels of *Ocr1* in healthy 129, 129/B6N generation F2, F5 and F7 as well as B6N mice determined by RT-PCR (one-way ANOVA). Data are mean \pm SD from 5 mice per group. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$; ns indicates not significant.



Supplementary Figure S7. Co-housing does not drive interstitial fibrosis in 129 mice on a B6N background. Three week-old B6N mice were co-housed either with 129 mice or B6N/129 F3 and F6 mice for 4 weeks, and then placed on a control diet or oxalate-rich diet for 14 days. Silver staining to illustrate interstitial fibrosis in kidney sections of all four mouse strains. Original magnification x200.

1.2 Supplementary Tables

Supplementary Table 1. Murine primer sequences

Mouse Gene	Primer Sequence
<i>18s</i>	Forward 5'- GCAATTATTCCTCCATGAACG -3' Reverse 5'- AGGGCCTCACTAAACCATCC -3'
<i>KIM-1</i>	Forward 5'- TCAGCTCGGGAATGCACAA -3' Reverse 5'- TGGTTGCCTTCCGTGTCTCT -3'
<i>Colla1</i>	Forward 5'- ACATGTTTCAGCTTTGTGGACC -3' Reverse 5'- TAGGCCATTGTGTATGCAGC -3'
<i>Fibronectin 1</i>	Forward 5'- GGAGTGGCACTGTCAACCTC -3' Reverse 5'- ACTGGATGGGGTGGGAAT -3'
<i>CD44</i>	Forward 5'- AGCGGCAGGTTACATTCAA -3' Reverse 5'- CAAGTTTTGGTGGCACACAG -3'
<i>Annexin II</i>	Forward 5'- GCACATTGCTGCGGTTTGTCTAG -3' Reverse 5'- CACCAACTTCGATGCTGAGAGG -3'
<i>Tnfa</i>	Forward 5'-CCACCACGCTCTTCTGTCTAC-3' Reverse 5'-AGGGTCTGGGCCATAGAACT-3'
<i>Il6</i>	Forward 5'-TGATGCACTTGCAGAAAACA-3' Reverse 5'-ACCAGAGGAAATTTCAATAGGC-3'
<i>Spp1</i>	Forward 5'- GCTTGGCTTATGGACTGAGGTC -3' Reverse 5'- CCTTAGACTCACCGCTCTTCATG -3'
<i>Grpr</i>	Forward 5'- GAGTGCCTACAATCTTCCCGTG -3' Reverse 5'- CAGAGTAGTGGTAGGAACGGTAC -3'
<i>S100a4</i>	Forward 5'- AGCTCAAGGAGCTACTGACCAG -3' Reverse 5'- GCTGTCCAAGTTGCTCATCACC -3'
<i>Abcc4</i>	Forward 5'- CACACGATGCAGCTACCAGTGA -3' Reverse 5'- GGTCATCCAGAGAAGCCTCCAT -3'
<i>Aprt</i>	Forward 5'- GTCATTGTGGATGACCTCCTGG -3' Reverse 5'- TGGTATAGGTCCTAGCCTCTCC -3'
<i>Gckr</i>	Forward 5'- AGACTGTGGACCAGGGTGTGTTGT -3' Reverse 5'- GCTGATGCCAACTTGCTTCGTC -3'
<i>Dgkd</i>	Forward 5'- GCCTATGAGAAGACGACAGAGAG -3' Reverse 5'- GAGGATGAAGCCTGAGACTCGT -3'
<i>Abcg2</i>	Forward 5'- CAGTTCTCAGCAGCTCTTCGAC -3' Reverse 5'- TCCTCCAGAGATGCCACGGATA -3'
<i>Kcnk5</i>	Forward 5'- CATCTCCACCATTGGCTTTGGG -3' Reverse 5'- CCACAAACATGCTCACCTTCCAG -3'
<i>Slc22a2</i>	Forward 5'- CGGAGTCTCCAAGATGGTTGATC -3' Reverse 5'- CCAGTATCCTCATCTGCCGTCA -3'
<i>Hibadh</i>	Forward 5'- ATGCTGGTCCAGCGACTTAC -3' Reverse 5'- GCAGAGTCTTGAGCCAATCCCA -3'
<i>Pou2af1</i>	Forward 5'- GTGTTTCGAGTCAAGGAGCCAGT -3' Reverse 5'- GCAGAAACCTCCATGTCAAGGC -3'
<i>Dgkh</i>	Forward 5'- CCAAAGTGGAGAAGGCACAGGA -3' Reverse 5'- GCAAGGCTTGTAGCAACTGCTC -3'
<i>Wdr72</i>	Forward 5'- GGAAGCACCTTTCCCTGTGAG -3'

	Reverse 5'- GCTCTTCTCCTGTCTCATGCC -3'
<i>Bcas3</i>	Forward 5'- GACTTCCAGGTCGTGGTTTGCA -3' Reverse 5'- ATGTGCTCCACTAAGGTCCCGT -3'
<i>Sox9</i>	Forward 5'- CACACGTCAAGCGACCCATGAA -3' Reverse 5'- TCTTCTCGCTCTCGTTCAGCAG -3'
<i>Bcr</i>	Forward 5'- CTGCTCTACAAACCTGTGGACC -3' Reverse 5'- TCTCCTCGTTGATGCTGGACAG-3'
<i>Jun</i>	Forward 5'- CAGTCCAGCAATGGGCACATCA -3' Reverse 5'- GGAAGCGTGTCTGGCTATGCA -3'
<i>Lyz2</i>	Forward 5'- TGCCAGAACTCTGAAAAGGAATGG -3' Reverse 5'- CAGTGCTTTGGTCTCCACGGTT -3'
<i>Mgp</i>	Forward 5'- AGGAACGCAACAAGCCTGCCTA -3' Reverse 5'- CTGCCTGAAGTAGCGGTTGTAG -3'
<i>Myc</i>	Forward 5'- TCGCTGCTGTCCTCCGAGTCC -3' Reverse 5'- GGTTTGCCTCTTCTCCACAGAC -3'
<i>S100a8</i>	Forward 5'- CAAGGAAATCACCATGCCCTCTA -3' Reverse 5'- ACCATCGCAAGGAACTCCTCGA -3'
<i>Slc22a12</i>	Forward 5'- GGAGGAACCAAGCAGGGACAAA -3' Reverse 5'- CCGTAGAAGGTGAAGCCAAAGG -3'
<i>Slc22a18</i>	Forward 5'- GTCCTCAGCTTTACCTGTGTCC -3' Reverse 5'- CTTGACCAGGAATACAGGCAGC -3'
<i>Sod2</i>	Forward 5'- TAACGCGCAGATCATGCAGCTG -3' Reverse 5'- AGGCTGAAGAGCGACCTGAGTT -3'
<i>Umod</i>	Forward 5'- TGACCAACTGCTATGCCACACC -3' Reverse 5'- GCCTGAGATGACTCGCCATTCT -3'
<i>Slc26a1</i>	Forward 5'- GATCATTGGGCTACAGGACTGC -3' Reverse 5'- GAGAGATAGGTAGACACGAAGCC -3'
<i>Slc26a3</i>	Forward 5'- CAGTTTGCTGAAATAGGCAGATTG -3' Reverse 5'- GCCTAATCCGAGTCCAAGGACA -3'
<i>Slc26a6</i>	Forward 5'- TACCGTGTGGACAGTAACCAGG -3' Reverse 5'- CCTGTACCAAGCTCCGAGACAT -3'
<i>Adcy10</i>	Forward 5'- CTTGTGAGTGGTGTGTCAGGCTGA -3' Reverse 5'- CAAACAGCAGCTCCGTGGTGAA -3'
<i>Agxt</i>	Forward 5'- CGGTATTGCTGTTCTGGTCCA -3' Reverse 5'- AGTCCACCAGGAGTAGGCACTG -3'
<i>Atp6v0a4</i>	Forward 5'- CAGTCATCCTGGGAATCGCTCA -3' Reverse 5'- CCAGGTATCCAAACAGACTCAGC -3'
<i>Atp6v1b1</i>	Forward 5'- CCAGAAAGGACCACGGAGATGT -3' Reverse 5'- AGGAACTCCAGGTAGAGCAGGT -3'
<i>Casr</i>	Forward 5'- AGGAAGGGCATCATTGAGGGAG -3' Reverse 5'- CTCATTGGACCAGAAGTCATCCG -3'
<i>Cln5</i>	Forward 5'- GCACCTTATGCCTGTGGTTCTG -3' Reverse 5'- CAGGCTCAAGCCAGATGACACC -3'
<i>Cldn16</i>	Forward 5'- CAGACTGTTGGATGGTGAACGC -3' Reverse 5'- TGGAGTCGTACTIONCATCGCAGGT -3'
<i>Cldn19</i>	Forward 5'- GCACTCGGGTTGGAGACAGTAA -3'

	Reverse 5'- GGTAGCATACCAGGAGACAGCA -3'
<i>Ocr1</i>	Forward 5'- AACCTTGGCTCGACTGTGATCC -3' Reverse 5'- CTTTCCACAGCCAAGGACCACT -3'
<i>Slc12a1</i>	Forward 5'- CCAATGCAGTGGCTGTCGCTAT -3' Reverse 5'- AATCACCACGGTGATGGAACCG -3'
<i>Slc34a3</i>	Forward 5'- GCGGTATTACCAGCAACACCAC -3' Reverse 5'- TGTCCTCCTCTGGAGATGCTGA -3'
<i>Slc4a1</i>	Forward 5'- CTTGTGCTAGGCTTCTCAGGAC -3' Reverse 5'- CCACCAACATCACGAGCAGGAT -3'
<i>Kcnj1</i>	Forward 5'- CTCTGTCTCCTCATCCGAGTAG -3' Reverse 5'- TGGTCTCTCCTTCAGGTGTGATG -3'
<i>Aqp2</i>	Forward 5'- GCCATCCTCCATGAGATTACCC -3' Reverse 5'- CGCTCATCAGTGGAGGCAAAGA -3'
<i>Scnn1b</i>	Forward 5'- ATGAACGGCTCCGATGTTGCCA -3' Reverse 5'- CTCTCCTTCAGGCAGTGGGTAT -3'
<i>Scnn1g</i>	Forward 5'- AGAACTGCTGGTGACCTGCTTC -3' Reverse 5'- GTGCTGAGGATGGTGGCGTTTT -3'
<i>Slc12a3</i>	Forward 5'- CTCCTACCTTGCCATCTCAGCT -3' Reverse 5'- GGAGCATTCTGTGAAGTTCAGC -3'
<i>Wnk1</i>	Forward 5'- CTACATCCTCCAGCAAGCAGT -3' Reverse 5'- CAGAGGTAACCAATGGAACAGGC -3'
<i>Alpl</i>	Forward 5'- CCAGAAAGACACCTTGACTGTGG -3' Reverse 5'- TCTTGTCCGTGTCGCTACCAT -3'
<i>Aqp1</i>	Forward 5'- CTTGCCATTGGCTTGTCTGTGG -3' Reverse 5'- CCAGTGGTTTGAGAAGTTGCGG -3'
<i>Car2</i>	Forward 5'- CTCTGCTGGAATGTGTGACCTG -3' Reverse 5'- CCAGTTGTCCACCATCGCTTCT -3'
<i>Clcnkb</i>	Forward 5'- CACCTCCATCTACAAGACCAGC -3' Reverse 5'- GAAAGTCCGCTGGCTGTAGTTG -3'
<i>Cldn14</i>	Forward 5'- ACGTCATCACCACCATTCTGC -3' Reverse 5'- CTGACACTGGTAGATGCCTGTG -3'
<i>Cyp24a1</i>	Forward 5'- GTCCTTCAAAGGACACAGAGG -3' Reverse 5'- CGCTTGCCACACTTTGGTGTTG -3'
<i>Grhpr</i>	Forward 5'- AGCCAACCTCAGAGTCATCAGC -3' Reverse 5'- AGTGGCATCTGTCAGGACACCT -3'
<i>Hogal</i>	Forward 5'- CTGCCCTCATTCAACTACAC -3' Reverse 5'- ACCACTGTCCTTCAAGCCGATG -3'
<i>Slc34a1</i>	Forward 5'- GGCTCCAACATTGGCACTACCA -3' Reverse 5'- ACCACAGTAGGATGCCCGAGAT -3'
<i>Slc9a3r1</i>	Forward 5'- ATCTGCCTCCAGCGATAACAGT -3' Reverse 5'- AGCCAAGGAGATGTTGAGGTCC -3'
<i>Trpv5</i>	Forward 5'- AGAGTTGGTGCCTCTCGCTACT -3' Reverse 5'- CGCCATTACATTGGTAAGCCTC -3'
<i>Trpv6</i>	Forward 5'- GAAGCGGAAACACATCCAGTGG -3' Reverse 5'- ACAGGTGTCTGGTCCAGGATCT -3'
<i>Trpm6</i>	Forward 5'- CGTGACATCGTCTTTGAGCCGT -3' Reverse 5'- GGTAGACAGCTTGCAGGAATGG -3'

<i>Vdr</i>	Forward 5'- GCTCAAACGCTGCGTGGACATT -3' Reverse 5'- GGATGGCGATAATGTGCTGTTGC -3'
<i>Nnt</i>	Forward 5'- TCTCCACTCACCGCTGATGTCT -3' Reverse 5'- AGCAGCAAGACTCTGAGAAGTTG -3'
<i>Ugt1a7c</i>	Forward 5'- GCTGAGGCTTTGGGCAGAATTC -3' Reverse 5'- GTGATGAATGCCCCGAGTCTTTGG -3'
<i>Hsd3b2</i>	Forward 5'- ATCAGGGTCCTGGACAAGGTCT -3' Reverse 5'- TGGCAAGCTCTCCTCAGGTA CT -3'
<i>Abca3</i>	Forward 5'- CTTCATGGACGAAGCTGACCTG -3' Reverse 5'- GTGCGGTTCTTTTACCAGCGTC -3'
<i>Gatc</i>	Forward 5'- CTGACAATGTTGCAGAAGGCAGC -3' Reverse 5'- GTTTACCATGTCTGGCAAGGAAAT -3'
<i>Atox1</i>	Forward 5'- GTGTGCCCGCTCAGTCAT -3' Reverse 5'- ACTCCTCCCAGCTTGTGAG -3'
<i>Acot1</i>	Forward 5'- AAGAAGCCGTGAACTACCTGCG -3' Reverse 5'- TGTGATGCCCTTCAGGAAGGAG -3'
<i>Slc22a7</i>	Forward 5'- ACTGCTCTGACCTTCGGCATCA -3' Reverse 5'- CAGACGTGAACAGGTAGGCTGT -3'
<i>Mme</i>	Forward 5'- CAGCCGAAACTACAAGGAGTCC -3' Reverse 5'- CATAAAGCCTCCCCACAGCATTC -3'
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<i>Ndufa4</i>	Forward 5'- AGCAGCACTGTATGTGATGCGC -3' Reverse 5'- TGTAGTCCACATTCACAGAGTAGA -3'
<i>Sod3</i>	Forward 5'- GACCTGGTTGAGAAGATAGGCG -3' Reverse 5'- TGGCTGATGGTTGTACCCTGCA -3'
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