Supplemental Data

Table S1. Analysis of physiologic parameters in *Hif1aHif2a* mutants. Shown are data for *Hif1aHif2a*$^{-/-}$ and and *Cre*$^{-}$ littermate control mice (n=4-5). **Abb.:** NS, not statistically significant.

Parameter	Unit	*Cre*$^{-}$	*Hif1aHif2a*	P
Body weight	**g**	23.6 ± 1.3	24 ± 1.3	NS
Kidney weight	**mg**	180 ± 12.5	185 ± 11	NS
Hgb	**g/dL**	15.7 ± 1.37	15.1 ± 0.31	NS
RBC	**10^6/mm^3**	13.07 ± 1.56	12.32 ± 0.7	NS
WBC	**10^3/mm^3**	10. 3± 1.33	9.49 ± 1.12	NS
PLTs	**10^3/mm^3**	1060 ± 46	1242 ± 88	NS
Ser. Epo	**pg/ml**	161 ± 67	129 ± 32	NS
BUN	**mg/dL**	29 ± 1.8	26 ± 1.4	NS
Na^+	**mmol/L**	148 ± 0.7	148 ± 0.9	NS
K^+	**mmol/L**	6 ± 0.3	6 ± 0.1	NS
Cl^-	**mmol/L**	113 ± 0.3	114 ± 1.2	NS
Glucose	**mg/dL**	195 ± 9.5	192 ± 10	NS
Urine Prot/Creat	**µg/mg**	20.7 ± 6.8	11 ± 3.8	NS

Supplemental Figures

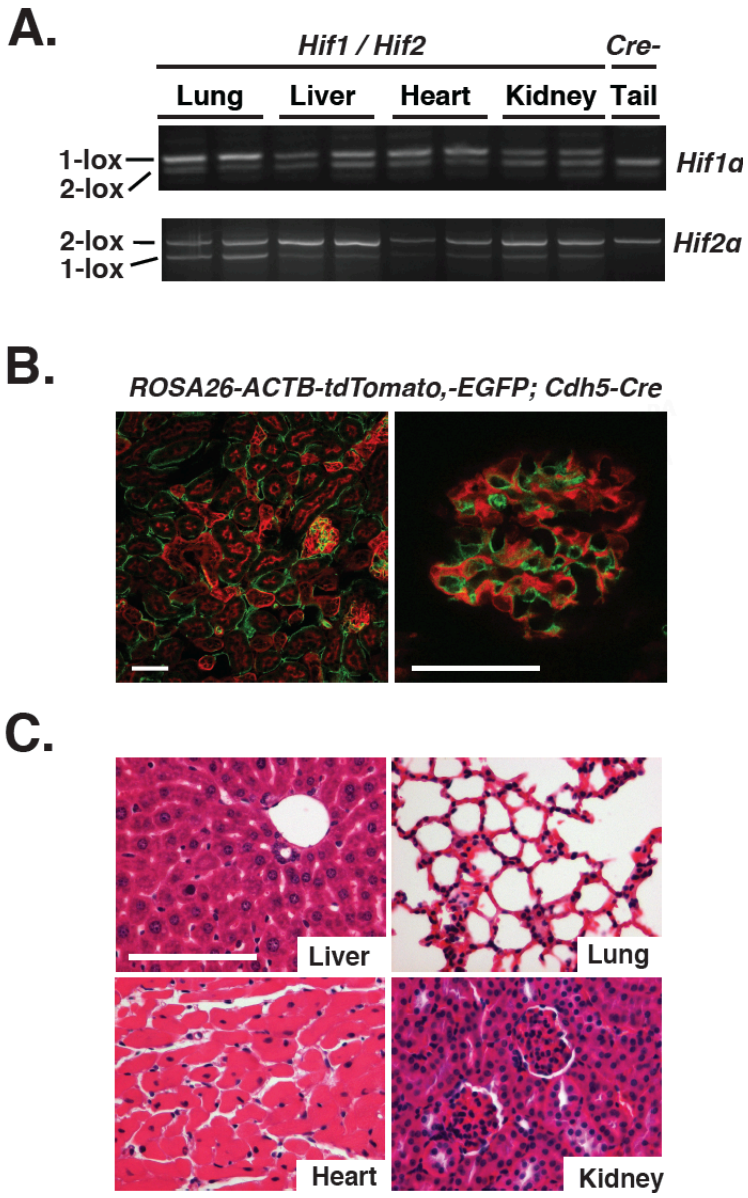

Figure S1. Generation of EC-specific *Hif1aHif2a* mutants. **(A)** Genomic PCR analysis of lung, liver, heart and kidney tissue from mice homozygous for the conditional *Hif1α* and *Hif2a* alleles. **(B)** Representative images of 50 μm kidney tissue sections from *ROSA26-ACTB-tdTomato,-EGFP* reporter (*mT/mG)* mice crossed with *Cdh5-cre* transgenics. Sections were analyzed by confocal laser scanning microscopy. Cells with a history of *Cdh5-cre* expression are identified by green fluorescence (glomerular and peritubular ECs), cells without history of *Cdh5-cre* expression are identified by red fluorescence. **(C)** Representative images of H&E stained liver, heart, lung and kidney sections from *Hif1aHif2a*$^{-/-}$ mice. Scale bars represent 100 μm.

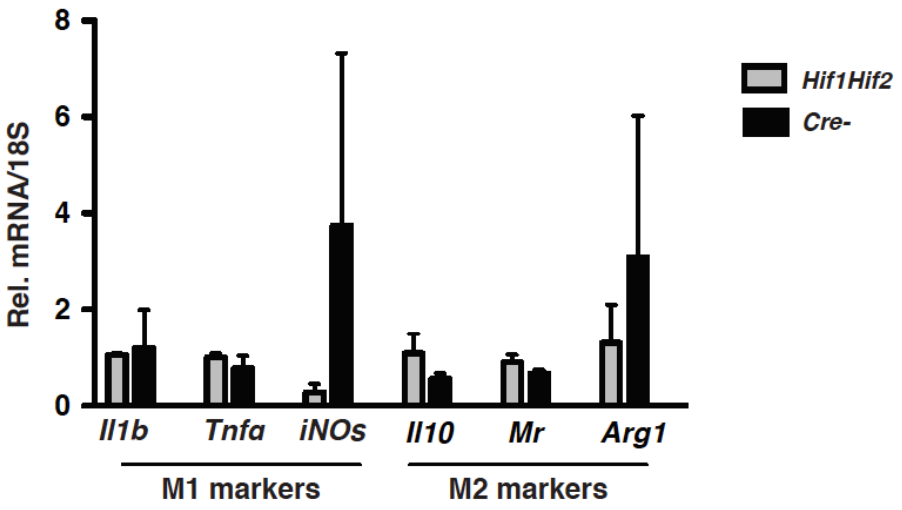

Figure S2. Inactivation of endothelial HIF does not alter macrophage polarization post UUO. RT-PCR analysis of M1 and M2 macrophage markers in $CD11b^{+}$ cells isolated from EC-specific *Hif1aHif2a*$^{-/-}$ and *Cre*$^{-}$ UUO kidneys 12 days after ligation. Graph bars represent mean values ± SEM.

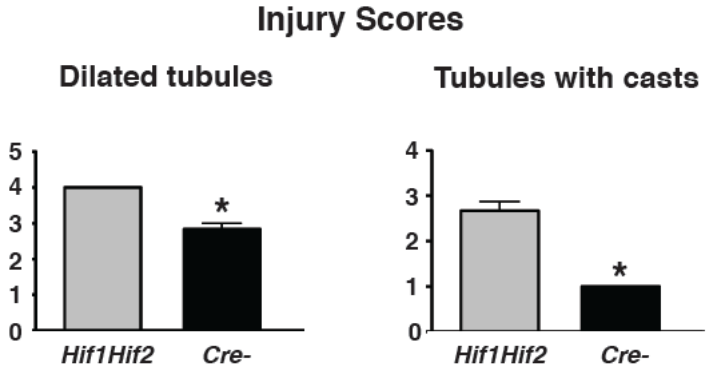

Figure S3. Kidney injury scores. Shown are semi-quantitative scores for dilated tubules and tubules with cast-forming material from *Hif1aHif2a*$^{-/-}$ mice compared to *Cre*$^{-}$ littermates at day 3 post IRI (n=6). Graph bars represent mean values ± SEM; *, P<0.05. **Abb.:** ns, not statistically significant.

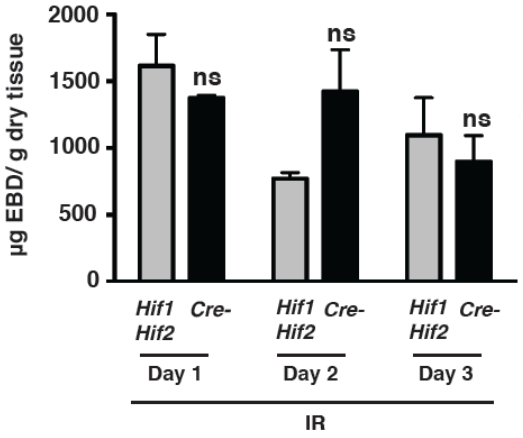

Figure S4. Inactivation of endothelial HIF-1α and HIF-2α does not alter renal vascular permeability in IRI kidneys. EBD permeability in injured kidneys from *Hif1aHif2a*$^{-/-}$ mice and *Cre*$^{-}$ littermate controls at time points indicated (n=3-5). Graph bars represent mean ± SEM; **Abb.:** ns, not statistically significant.

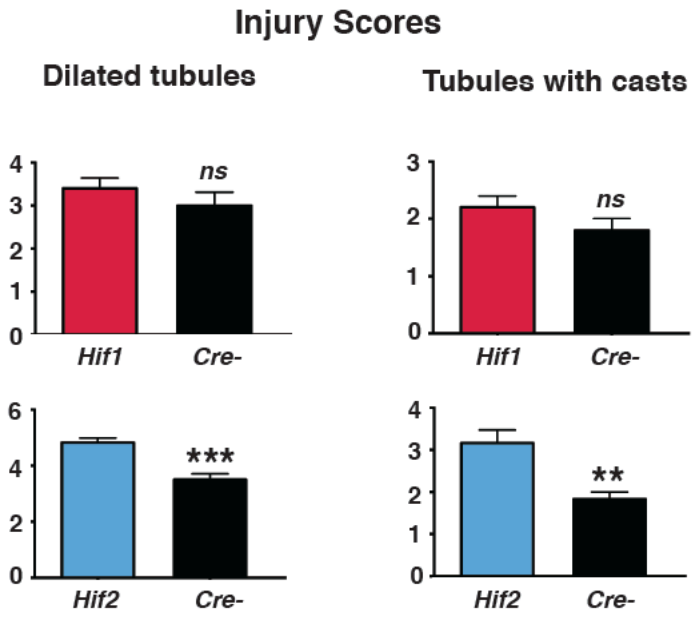

Figure S5. Kidney injury scores. Semi-quantitative scores for dilated tubules and tubules with cast-forming material from *Hif1a*$^{-/-}$ compared to control animals (n=5) and *Hif2a* mutants compared to littermate controls (n=6) at day 3 post IRI. Graph bars represent mean values ± SEM; **, P<0.01, ***, P<0.001. **Abb.:** ns, not statistically significant.

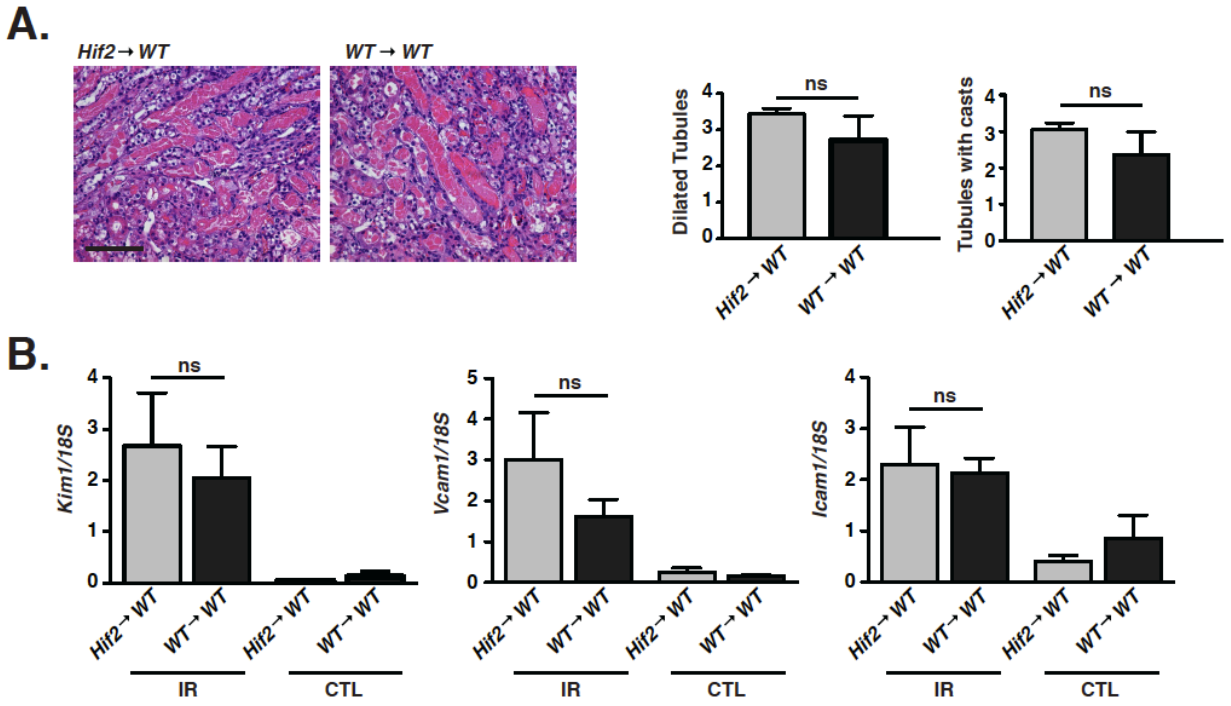

Figure S6. *Hif2*$^{-/-}$ bone marrow cells do not cotribute to renal IRI. Results from the analysis of WT mice, which were transplanted with either bone marow cells derived from *Cdh5-cre Hif2a* mutants (*Hif2→WT*) or from WT mice (*WT→WT*) and subjected to renal IRI. **(A)** H&E staining of kidney sections 3 days post IRI and semi-quantitative scores for dilated tubules and tubules with cast-forming material (n= 4-5). **(B)** Shown are corresponding *Kim1*, *Vcam1* and *Icam1* mRNA levels in IR and CTL kidneys. Graph bars represent mean values ± SEM. **Abb.:** ns, not statistically significant; IR, kidney subjected to unilateral renal ischemia-reperfusion; CTL, contralateral kidney. Scale bars indicate 100 µm.

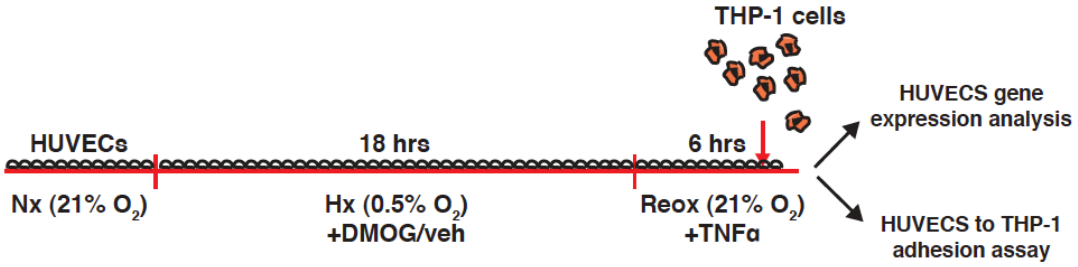

Figure S7. Experimental protocol for studying the effect of HIF prolyl-hydroxylase inhibition on endothelial cells. Shown are the timing and experimental conditions to study the role of hypoxia-reoxygenation on EC adhesion molecule expression and cell adhesion. **Abb.:** Hx, hypoxia; Nx, normoxia; Reox, reoxygenation; TNFα, tumor necrosis factor α.

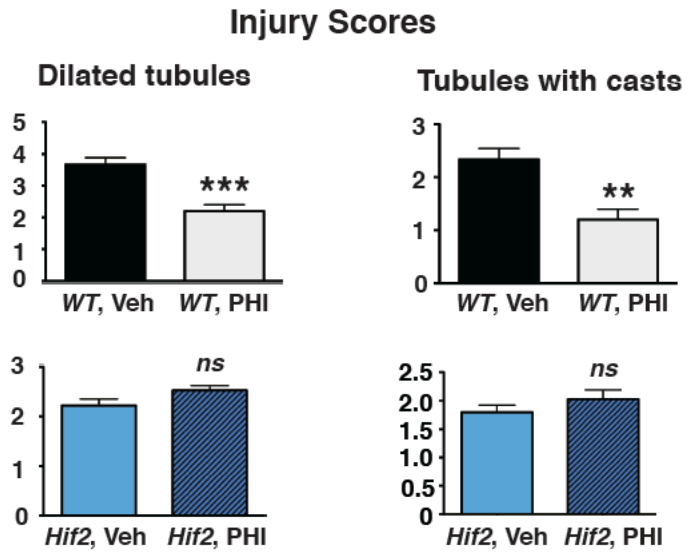

Figure S8. Kidney injury scores. Shown are semi-quantitative scores for dilated tubules and tubules with cast-forming material from mice of different genotypes at day 3 post IRI: PHI- and vehicle treated WT mice (n=5-6); PHI- and vehicle treated *Hif2a* mutants (n=4-5). Graph bars represent mean values ± SEM; **, P<0.01, ***, P<0.001. **Abb.:** ns, not statistically significant.