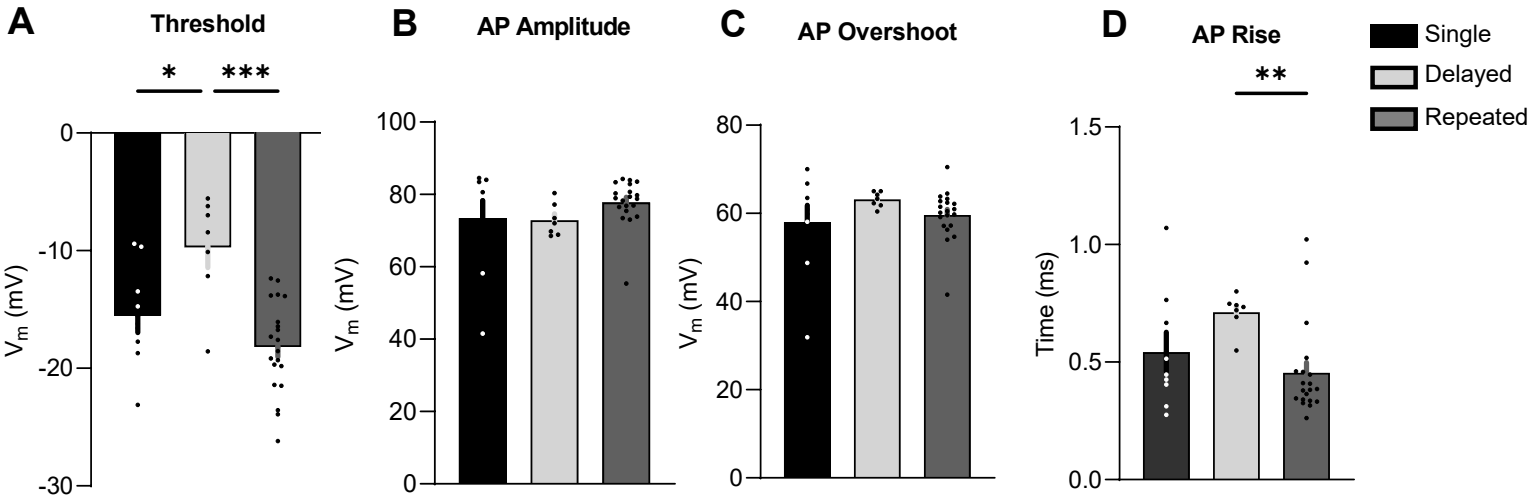

Figure S1: Analysis of active and passive properties of human DRG sensory neuron firing patterns, related to figure 5 A-D) Analysis of threshold, AP amplitude, AP overshoot, and AP rise from all human sensory neurons. All data were analyzed from the control treatment (single: n=9, black; delayed: n=7, light grey; repeated: n=20, dark grey). *p<0.05, **p<0.01, ***p<0.0001; one-way ANOVAs with Tukey's multiple comparisons or Kruskal-Wallis test with Dunn's multiple comparisons. Data are represented as mean ± SEM

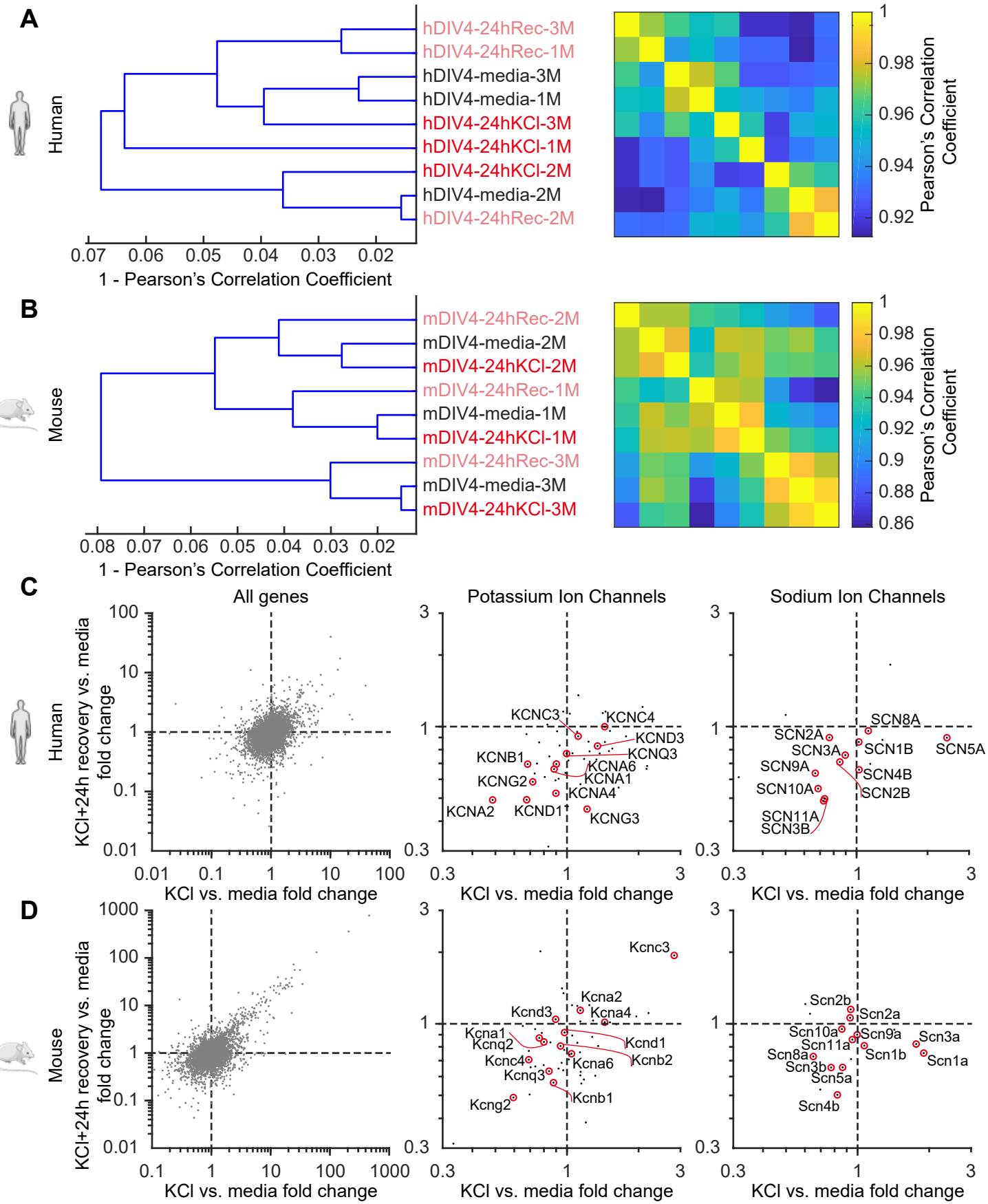

Figure S2: Assessment of global gene expression in mouse and human DRG neurons following sustained depolarization. A-B) Hierarchical clustering of RNA-seq samples from human and mouse DRG sensory neurons. N=3 cultures each, denoted by #1-3. Neurons were collected after approximately 4 days in vitro and the following treatment groups were studied: Media (control), 24hKCl (24h cultured in KCl media), and 24hRec (additional 24h recovery in fresh media after cultured in KCl for 24hr). C-D) Differential gene expression analysis between condition with KCl vs. media fold change (X-axis) and 24hRec vs media (Y-axis). Middle and right panels: Isolated potassium and sodium ion channels for better representation.

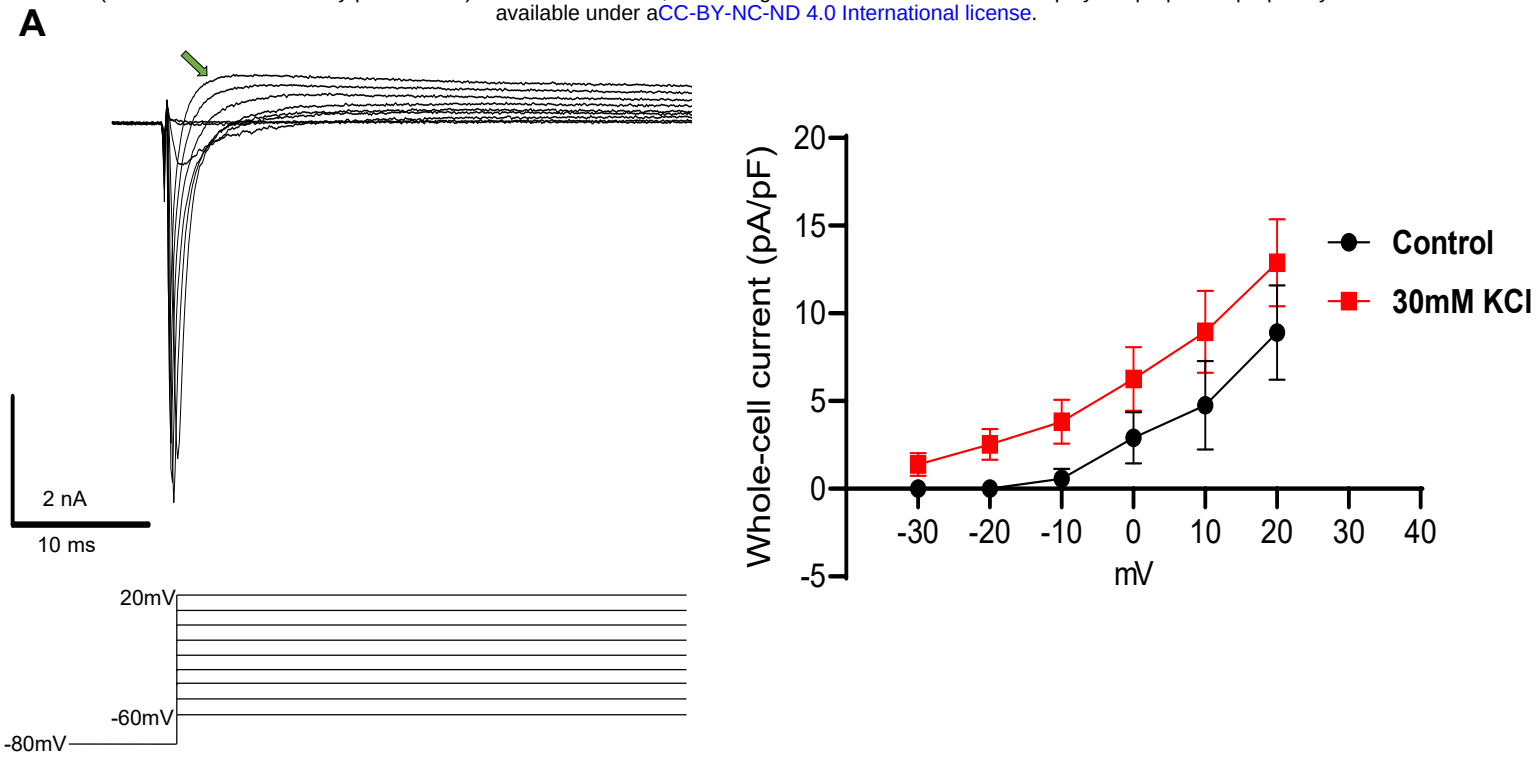

Figure S3: Mouse DRG neurons exhibit an unknown voltage-gated outward current, related to figure 6. A) Example traces of voltage-gated outward currents in mouse DRG neurons using a voltage-step pulse protocol shown below traces. Current density analysis of an unknown outward current from control (right; black) and KCl-treated cells (right; red). Analysis was done using the value at the peak of the outward current before the current decay (green arrow).