Supplemental Figure 1

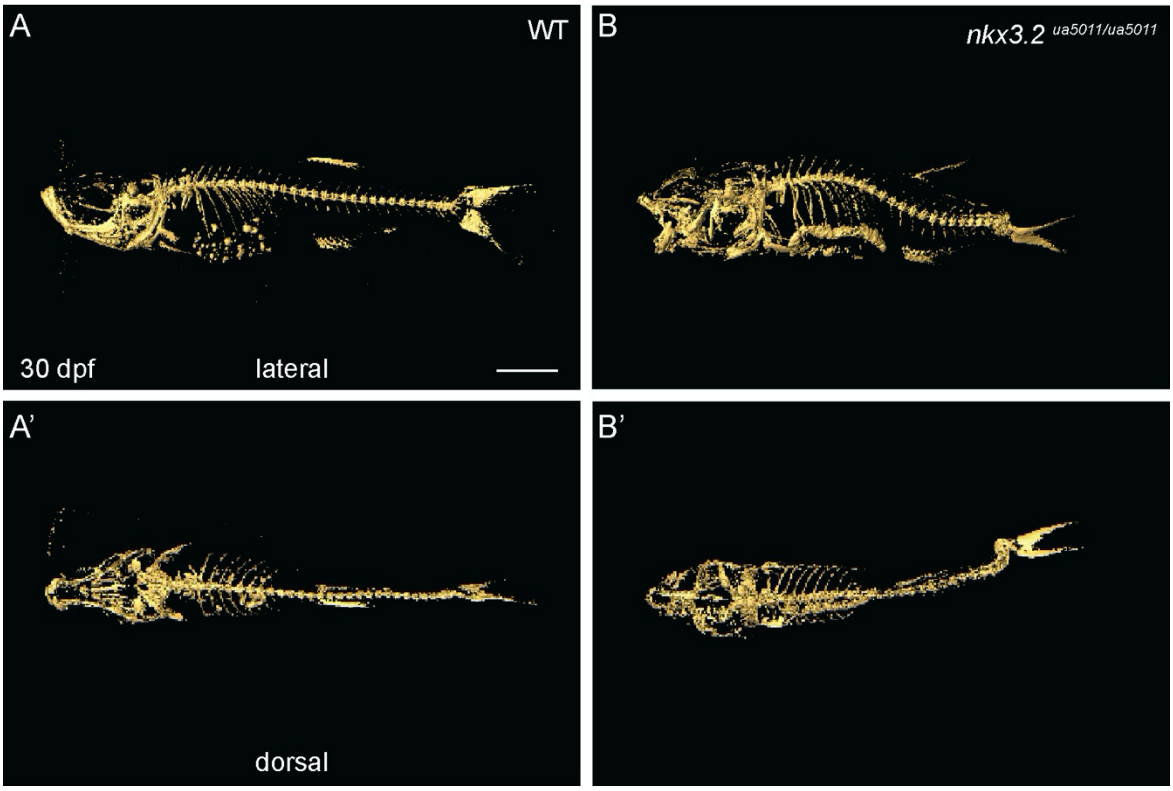

Figure S1. *nkx3.2* mutant zebrafish develop spinal abnormalities at 30 dpf. Lateral and dorsal views of μCT imaging of 30 dpf wild-type (WT, A) and *nkx3.2*$^{ua5011/ua5011}$ mutant (B) fish reveals spinal abnormalities in mutants, including a kink in the caudal spine. Scale bar = 2mm.

Supplemental Figure 2

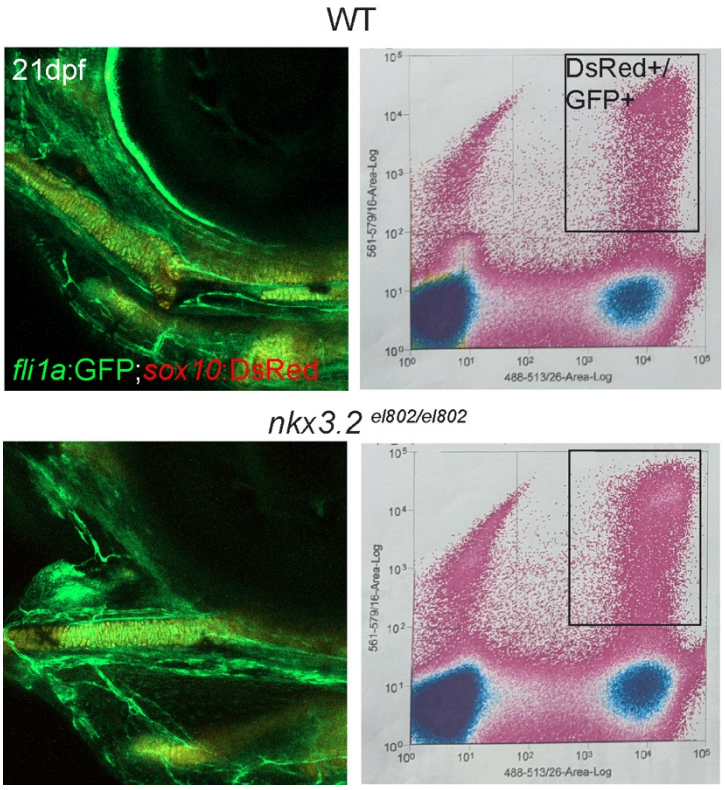

Figure S2. Fluorescence activated cell sorting (FACS) for single-cell isolation of *fli1a:*GFP+*;sox10:*DsRed+ populations. Confocal images to the left show *fli1a:*GFP+*;sox10:*DsRed+ chondrocytes in the jaw region at 21 dpf. FACS plots to the right show gating for GFP (x-axis) and DsRed (y-axis), with cells in the upper right quadrant (boxed) used for single-cell analysis.

Supplemental Figure 3

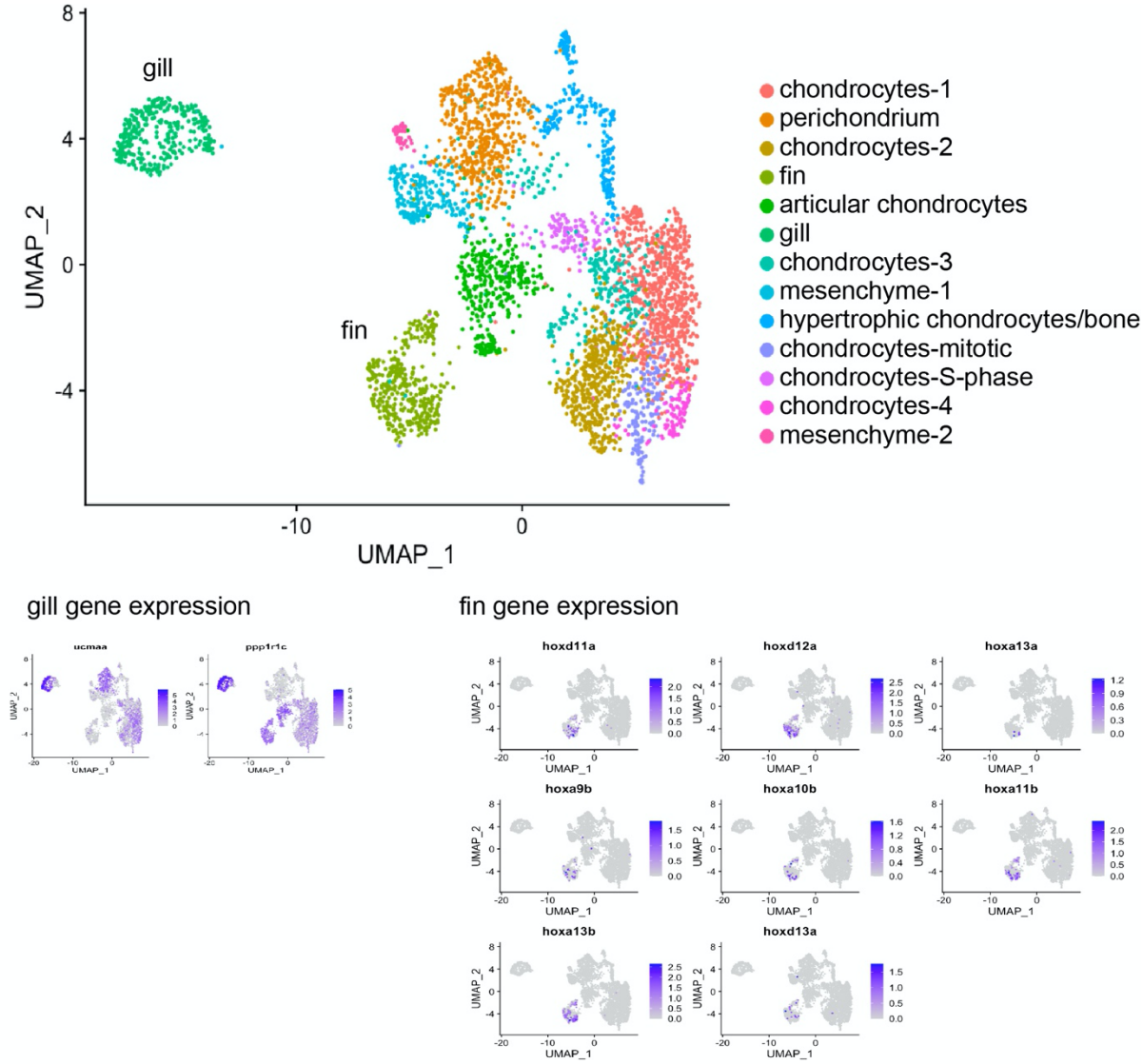

Figure S3. Identification of fin and gill populations in single-cell RNA-seq analysis. Fin and gill cells are present in unique clusters in the UMAP visualization of all profiled cells. Gill cells are marked by high levels of expression of *ucmaa* and *ppp1r1c*. Fin cells are marked by expression of posterior *hox9-13* genes. Although we attempted to isolate only head chondrocytes, this analysis reveals some contamination by pectoral fin chondrocytes during the dissection process.