Abstract:

The pharynx is a region in vertebrate embryos that gives rise to multiple organs including the cartilage of the head and neck, thymus and parathyroid glands. If the pharynx does not develop properly, it can cause birth defects such as DiGeorge Syndrome. We hypothesized that the FGF signaling pathway plays an important role in the development of the *Xenopus* pharynx as in other vertebrates. We manipulated FGF signaling in *Xenopus* embryos at various stages of development. *In situ* hybridization of control and FGF manipulated embryos showed a change of RA pathway gene expression in manipulated embryos. These results suggest that FGF signaling plays a key role in *Xenopus* pharyngeal development at least partially by regulating RA signaling. Future work will determine the exact interactions of the FGF and RA signaling pathways. These results will aid in our understanding of the genetic cues that guide vertebrate pharyngeal development and how disruptions in these cues may result in birth defects.