

Craniofacial disorders affect 3% of the global population, and have harmful impacts on patient's lives. Scientists are still unsure of which genes contribute to craniofacial disorders. CKAP5 is a gene that influences the structure of microtubules. Since it is known that craniofacial disorders are caused by complications in early neural crest cell migration, the goal of this experiment is to understand if increasing the levels of CKAP5 in *Xenopus laevis* species will impact the neural tube and pharyngeal arches, and therefore lead to differing facial structure in the embryos. The embryos were injected on both sides at cell stage two with CKAP5 mRNA to increase the levels of this gene. Then, they were fixed at stage 42 and imaged to observe craniofacial deformities. A disparity was seen between the control and CKAP5 overexpressed embryos, and the mouth width showed a significant increase. Scientists must conduct future experiments to determine what genes impact the migration of pharyngeal arches. Experiments include test trials with similar genes that address overexpression and knockdown, in situ hybridization, in situ migration assays, and sociological studies of environmental factors and population genetics. Once it is determined what caused craniofacial disorders, scientists can work towards preventing these genetic defects and better address treatment plans for patients.