Despite the fact that some aspects of single studies differ, there’s a generally accepted view that the whole cartilaginous viscerocranium of vertebrates is neural crest derived. By the series of isotopic transplantation experiments of presumptive neural crest on the model organism Ambystoma mexicanum I partly specify this opinion and prove that the most ventro-caudal cartilage, the second basibranchial, is of a different origin. Further I mention the level of the presumptive neural crest where the single parts of cartilaginous viscerocranium arise from. Moreover there is one element, the first basibranchial, which has double origin. I discuss also some other neural crest derivatives such as head and outer gills mesenchyme, the trabeculae cranii, part of the cartilaginous otic capsule or the connective tissue in the head. I have performed 179 transplantations between transgenic and normal axolotl embryos. My final analysis is composed of 65 embryos of stage 40 – 42 and 7 larvae of length of 15 – 17 mm.