
DETERMINING THE PLACE OF AQP-3B IN THE WNT/CA2+ NONCANONICAL PATHWAY (POSTER)

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During *Xenopus laevis* gastrulation, convergent extension is required for the mesoderm to extend into the embryo and shape the embryonic body plan. Recent results from our lab suggest that the inhibition of aqp-3b prevents convergent extension of the mesoderm and that aqp-3b acts through noncanonical Wnt signaling. Wnt signaling is a key signal pathway for embryo and tissue development. There are two types of Wnt signaling pathways, the canonical and the noncanonical pathways. There are three separate branches to noncanonical Wnt signaling. Our lab has shown that aqp-3b acts through the noncanonical Wnt/Ca²⁺ pathway and that it acts upstream of the cytoplasmic Wnt signaling pathway member Disheveled. The Frizzled7 membrane receptor is part of the noncanonical Wnt/Ca²⁺ pathway and also acts upstream of Disheveled. I will test, whether in this signaling cascade, aqp-3b acts upstream or downstream of Frizzled 7. Thus, I will test whether Frizzled 7 activates aqp-3b, if aqp-3b activates Frizzled 7, or if aqp-3b is bypassed and Frizzled 7 activates disheveled. When Frizzled 7 is active, GFP-labeled protein kinase C (PKC-GFP) relocates from the cytoplasm to the plasma membrane. Thus, I will inject either PKC-GFP alone, PKC-GFP + fz7, or PKC-GFP + fz7 + aqp-3bMO (to inhibit aqp3b) into two-cell *Xenopus* embryos and examine under a fluorescence microscope whether the PKC is bound to the membrane (Wnt signaling active) or remains in the cytoplasm (no Wnt signaling). With this procedure the place of aqp-3b within the Wnt/Ca²⁺ pathway will be determined.