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EphB3 and EphA5 expression during motor axon outgrowth in the periphery

During neural development, motor axons grow precisely to their final target regions to innervate muscle. We are interested in identifying the molecules that guide motor axons and understanding how they work. Members of the Eph family of receptor tyrosine kinases and their ligands, the ephrins, are thought to play key roles in motor axon guidance. Using chicken embryos, we are examining the expression of EphB3 and EphA5 during the stages that motor axons project through the somites to target limb muscles in the hindlimb. This analysis will guide our functional studies to determine the requirement for EphB3 and EphA5 in axon pathfinding. Functional analyses will include gain and loss-of-function experiments using in ovo electroporation to alter gene expression/ function. The results of these studies will provide important insights into how motor axons are guided to their target muscles during development.