A Novel Role for VICKZ Proteins in Maintaining Epithelial Integrity during Embryogenesis.

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Abstract:

VICKZ (IGF2BP1,2,3/ZBP1/Vg1RBP/IMP1,2,3) proteins bind RNA and help regulate many RNA-mediated processes. In the midbrain region of early chick embryos, VICKZ is expressed in the neural folds and along the basal surface of the neural epithelium, but, upon neural tube closure, is down-regulated in prospective cranial neural crest (CNC) cells, concomitant with their emigration and epithelial-to-mesenchymal transition (EMT). Electroporation of constructs that modulate cVICKZ expression demonstrates that this down-regulation is both necessary and sufficient for CNC EMT. These results suggest that VICKZ down-regulation in CNC cell-autonomously promotes EMT and migration. Reduction of VICKZ throughout the embryo, however, inhibits CNC migration non-cell-autonomously, as judged by transplantation experiments in Xenopus embryos.

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