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# Repression of MAP3K1 expression and JNK activity by canonical Wnt signaling

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## Abstract

Morphogenesis is a complex and highly coordinated process orchestrated by temporal spatial activity of developmental pathways. How the different pathways interact to guide the developmental program remains an intriguing and open question. MAP3K1-JNK and Wnt are signaling pathways crucial for embryonic eyelid closure, an epithelial morphogenetic event conserved in mammals. Here we used a mouse model of eyelid development and genetic and biochemistry tools to investigate the relationships between the two pathways. We found that Wnt activation repressed MAP3K1 expression. Using Axin-LacZ reporter mice, spatial Wnt activity was detected in the leading edge of the developing eyelid. Conditional knockout of *Wntless (Wls)* in ocular surface ectoderm blocked eyelid formation, and significantly increased MAP3K1

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