

Developmental Biology

Volume 247, Issue 2, 15 July 2002, Pages 225-236

Regular Article

Combinatorial Signaling by an Unconventional Wg Pathway and the Dpp Pathway Requires Nejire (CBP/p300) to Regulate *dpp* Expression in Posterior Tracheal BranchesN.T. Takaesu^a ... S.J. Newfeld^{a, b1} Show more<https://doi.org/10.1006/dbio.2002.0693>[Get rights and content](#)Under an Elsevier [user license](#)[open archive](#)

Abstract

The *decapentaplegic* (*dpp*) gene influences many developmental events in *Drosophila melanogaster*. We have been analyzing *dpp* expression in two groups of dorsal ectoderm cells at the posterior end of the embryo, in abdominal segment 8 and the telson. These *dpp*-expressing cells become tracheal cells in the posterior-most branches of the tracheal system (Dorsal Branch10, Spiracular Branch10, and the Posterior Spiracle). These branches are not identified by reagents typically used in analyses of tracheal development, suggesting that *dpp* expression confers a distinct identity upon posterior tracheal cells. We have determined that *dpp* posterior ectoderm expression begins during germ band extension and continues throughout development. We have isolated the sequences responsible for these aspects of *dpp* expression in a reporter gene. We have determined that an unconventional form of Wingless (Wg) signaling, Dpp signaling, and the transcriptional coactivator Nejire (CBP/p300) are required for the initiation and maintenance of *dpp* expression in the posterior-most branches of the tracheal system. Our data suggest a model for the integration of Wg and Dpp signals that may be applicable to branching morphogenesis in other developmental systems.

Keywords

Drosophila; Wingless; Decapentaplegic; Nejire (CBP; p300); combinatorial signaling; dorsal ectoderm; tracheal system; posterior spiracle


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1 To whom correspondence should be addressed. Fax: (480) 965-2519. E-mail: newfeld@asu.edu.

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