

Analysis in silico of the functional interaction between WNT5A and YAP/TEAD signaling in cancer

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Abstract

To date, most data regarding the crosstalk between the Wnt signaling pathway and the YAP/TAZ transcriptional coactivators focuses on the Wnt/ β -catenin branch of the pathway. In contrast, the relationship between the non-canonical Wnt pathway and YAP/TAZ remains significantly less explored. Wnt5a is usually regarded as a prototypical non-canonical Wnt ligand, and its expression has been related to cancer progression. On the other hand, YAP/TAZ transcriptional coactivators act in concert with TEAD transcription factors to control gene expression. Although one article has shown previously that WNT5A is a YAP/TEAD target gene, there is a need for further evidence supporting this regulatory relationship, because a possible YAP/Wnt5a regulatory circuit might have profound implications for cancer biology. This article analyzes publicly available ChIP-Seq, gene expression, and protein expression data to explore this relationship, and shows that WNT5A might be a YAP/TEAD target gene in several contexts. Moreover, Wnt5a and YAP expression are significantly correlated in specific cancer types, suggesting that the crosstalk between YAP/TAZ and the Wnt pathway is more intricate than previously thought.

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