Award ID:
RP110153

Project Title:
The role of Tcf3 in skin squamous cell carcinoma

Award Mechanism:
Individual Investigator

Principal Investigator:
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Entity:
Baylor College of Medicine

Lay Summary:

Squamous cell carcinoma (SCC) is one of the most common skin cancers. Although its occurrence is less frequent than that of basal cell carcinoma (BCC), its greater potential to invade into other tissues makes it a more devastating disease. Two particularly prominent markers, high b?catenin and epidermal growth factor receptor (EGFR) signaling, are commonly seen in SCC and other types of cancer. However, the cause of their hyperactivity in SCC and their relationship is not entirely understood. Our preliminary data suggest that a misregulation of the transcription factor Tcf3, a cofactor of b?catenin, has a causal role in the development of SCC. Misregulation of Tcf3 might also be the cause of the hyperactivity of beta?catenin and overexpression of EGFR. Our goal is to use mouse model to elucidate the role of Tcf3 in the development of SCC, and to delineate the mechanistic pathways by which overexpression of Tcf3 acts to contribute to skin SCC development. Our results will clarify the causal link between Tcf3/b?catenin signaling and EGFR overexpression in the development of SCC, which is currently not understood. This elucidation of the pathways that lead to SCC development will be crucial for the development of better and/or novel therapeutic targets. In addition, our findings might be broadly applicable to other systems and might provide important insights into the pathogenesis of SCC in other organs as well.