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Wnt-dependent regulation of Sox10 expression in melanoma development

Shakhova Olga, Rexhep Uka, Christian Britschgi, Claudia Matter, Anja Kraettli, Mitchell Levesque and **Reinhard Dummer**
University Hospital Zurich, Switzerland

Metastatic melanoma is the most aggressive skin cancer and despite tremendous efforts and substantial advances in clinical treatment of melanoma patients within recent years, it remains a deadly disease. Melanoma tissue is often heterogeneous and, in addition to melanocytes, contains cells of other neural crest lineages. The transcriptional factor Sox10 is one of the key regulatory molecules of neural crest stem cells development and as we have previously demonstrated, Sox10 plays a crucial role in the formation and maintenance of giant congenital melanocytic nevi and melanoma *in vitro* and *in vivo*. However, the molecular mechanisms underlying Sox10-mediated melanoma development remain largely uncharacterized. To identify interaction partners of Sox10, we have performed unbiased screen using mass-spectrometry based proteomics. We demonstrate here that the canonical Wnt signaling is involved in fine-tuning of Sox10 expression levels in a β-catenin-dependent manner. Moreover, we show that Sox10 physically interacts with β-catenin and that interfering with Wnt signaling impairs melanoma formation via deregulation of Sox10 expression.

olga.shakhova@usz.ch