REXHEP UKA
Oncology Lab

Department of Hematology and Oncology, University Hospital Zurich,
University of Zurich, Wagistrasse 14, 8952 Schlieren

rexhep.uka@usz.ch
www.shakhovalab.com

KEYWORDS – Cancer, Melanoma, WNT pathway

MAIN FIELDS OF RESEARCH; ABSTRACT

Melanoma is the most aggressive type of skin cancer, characterized by highly invasive and metastatic features. The high mortality rate is largely due to resistance of melanoma cells to conventional chemotherapy, and despite recent advances in melanoma treatment, including targeted therapies and immune checkpoint inhibitors, melanoma remains a deadly disease. The observation on striking parallels between cancer cells and normal stem cells might lead to fundamental changes in the future therapy against cancer. We have previously demonstrated that Sox10, a neural crest transcription factor, plays a crucial role in the development and maintenance of giant congenital melanocytic nevi and melanoma and we identified SOX10 as a novel promising candidate for melanoma treatment. Interestingly, our data reveal that targeted therapies currently available for melanoma patients do not interfere with SOX10 expression neither *in vitro* nor *in vivo* in human patients. To gain further insight into SOX10-mediated melanoma progression, we have performed a mass spectrometry-based screen to identify proteins interacting with SOX10 in melanoma cells. We show here that SOX10 interacts with β-catenin, a key downstream effector of Wnt signalling pathway. The role of Wnt signaling and β-catenin pathway has been the subject of intensive research in the field of melanoma; however, its exact role has remained highly controversial to date. In this study we demonstrate that inhibition of GSK3β results in ultimate downregulation of SOX10 protein in melanoma cell lines *in vitro* and consequently leads to the death of melanoma cells.

SPECIAL TECHNIQUES AND EQUIPMENT

We utilize human melanoma cell cultures and mice models of melanoma. Our main techniques are immunohistochemistry, immunofluorescence, immunoblotting, fluorescence microscopy, histology, molecular biology