

Novel Functions of pVHL and the Jade Proteins

Bernhard Schermer

Kidney Research Center, Cologne, Germany

Cilia are specialized sensory organelles that play important roles in several biological processes including mechanosensation, polarity, photoperception and various signaling networks. While a large number of hereditary diseases is caused by mutations in genes encoding for ciliary proteins, cilia have also been linked to tumorigenesis and cancer. In the past, we identified the von Hippel-Lindau tumour suppressor protein (pVHL) as a ciliary protein in renal epithelial cells and we could demonstrate the impact of pVHL for ciliogenesis. We continued our work on pVHL in *C.elegans*. Here, loss of *vhl-1* results in an increased lifespan of worms. Moreover, we could recently show that loss of *vhl-1* results in significant changes of the RBPome, the proteome bound to RNA. To further elucidate the function and regulation of pVHL we now focussed on the Jade family of proteins. The putative tumor suppressor Jade-1 had been described to be stabilized by pVHL and to inhibit Wnt signaling. Using genome editing we generated several knockout mouse as well as cell lines for Jade-1, Jade-2 and Jade-3 that are currently validated and studied extensively.