

### **Orphan GPCRs in the vascular and immune system**

GPCRs are central regulators of vascular functions such as vessel tone, endothelial permeability, leukocyte transmigration, and angiogenesis. Among the more than 800 GPCRs encoded in the human genome, there are still about 130 orphan GPCRs, i.e., GPCRs with as yet unknown endogenous ligand and function. To better understand the biological function of these enigmatic GPCRs, we performed single-cell expression analyses in primary murine vascular and immune cells and identified rare cell populations with specific GPCR repertoires. Based on these data, we analyze the function of orphan GPCRs in specialized subpopulations of smooth muscle cells, endothelial cells and immune cells and I will present selected topics from these studies in my talk.