



**Biochemie-Zentrum der Universität Heidelberg**

Ruprecht-Karls-Universität

**Project:** Role of Angiopoietins in the developing cerebellum

**Project leader:** Carmen Ruiz de Almodóvar

**Application Deadline:** 31<sup>st</sup> May 2017

**Start of Master thesis project:** June 2017

### **Project Description:**

Even though they have distinct functions, the nervous and vascular systems share many more similarities and common principles than previously anticipated. For example, blood vessels and nerves grow in a similar manner. Moreover, recent evidences show that vascular factors are expressed in neural cells and participate in diverse neuronal processes during development and in the adult brain. This new concept, termed the Neuro-vascular link, highlights the significance of a shared-tight molecular regulation between the vascular and the nervous system and underlines the importance to study the function of vascular molecules within the nervous system.

Angiopoietins and their receptors are well known for their function in building and maintaining a functional vascular system. Interestingly, we found that Angiopoietins and their receptors are not only present on vascular cells within the developing cerebellum but also in different neural cells. In this project, we aim to understand their functional role during cerebellum development. We hypothesize that the cerebellum forms via an orchestration of signals coming not only from the already known neuronal factors but also via vascular cues, which together, assure the highly and stereotypic neuronal and axon patterning required for proper connectivity and function.

### **Methods that will be used:**

Mouse genetics  
In vivo mouse work  
*In vitro* cell culture  
Cell Biology  
Biochemistry and Molecular Biology techniques  
Histology  
Immunohistochemistry  
Light and fluorescent microscopy  
Confocal microscopy

### **Applications:**

Send your letter of motivation for applying to this position and your CV (with transcripts) to [carmen.ruizdealmodovar@bzh.uni-heidelberg.de](mailto:carmen.ruizdealmodovar@bzh.uni-heidelberg.de)