

# Master Thesis (f/m)



**Insilico Biotechnology is a market-leading company providing predictive solutions for the Bioeconomy. An interdisciplinary team of experts offers mechanistic models, customized software, and a high performance computing platform for the simulation of living cells. For world-leading pharma and biotech companies Insilico's technology lowers time, risk and costs of development processes. Founded in 2001, Insilico is a privately held company based in Stuttgart.**

To strengthen our young and dynamic research and development team in Stuttgart, we are looking for a master student that will complete a

## **Master Thesis regarding the Reconstruction of a Mechanistic Model of the Blood Brain Barrier (f/m)** (Reference number 17MT1)

### **Key responsibilities (note abstract on next page):**

- Mechanistic metabolic model reconstruction of the blood-brain barrier
- Refinement using existing reconstructions and data from clinical partners
- Model development documentation

### **Your qualifications:**

- Successfully completed bachelor's degree in Biotechnology, Biochemical Engineering, Biosystems Engineering, Bioinformatics, or comparable
- Basic knowledge in modelling and simulation
- Good written and oral command of German and English is essential

### **What we offer:**

- Personal and professional development in an expanding, internationally operating company at the interface of information technology and biotechnology
- Open and flexible working environment with flat hierarchies
- State-of-the-art office and infrastructure with excellent connections to public transport, Stuttgart airport and highways

**Start:** as soon as possible

**Location:** Stuttgart

**Duration:** 6 months

**Schedule:** full-time

We are looking forward to receiving your complete application documents per e-mail, stating reference number 17MT1. Please include an overview of your academic records and your earliest possible date of entry.

E-Mail address for application documents:  
career@insilico-biotechnology.com

Your contact person for enquiries by phone:  
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## Abstract of Master's Thesis

The blood-brain barrier (BBB) serves as a gateway to the brain, which plays a role in many diseases of the brain, i.e. in Alzheimer's disease. A detailed mechanistic understanding of the blood-brain barrier is therefore crucial for the development of drugs targeting these diseases. Mathematical models deliver this mechanistic insight and thus facilitate the drug development process through in-silico simulations. Here, a mechanistic metabolic network model for the blood-brain barrier will be developed. This model will be based on the existing reconstructions (RECON2, HMDB), and data (RNA,...) from clinical partners.