

The **Weidinger lab** at the Institute of Biochemistry and Molecular Biology of Ulm University invites applications for a

PhD student (TV-L 13/65%, f/m/d)

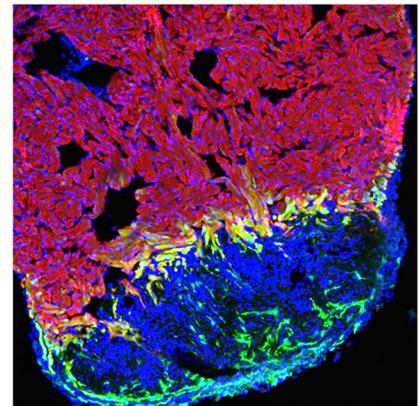
“Does zebrafish heart regeneration depend on anti-aging pathways?”

While heart injury results in permanent damage in adult mammals including humans, zebrafish can efficiently regenerate the heart. Our lab studies the underlying cellular and molecular mechanisms (*Bertozzi et al Dev. Biol* 2021, *Honkoop et al elife* 2019, *Wu et al Dev. Cell* 2016, *Zebrowski et al., elife* 2015, *Schnabel et al., PLOS One* 2011).

Cardiomyocytes are regenerated from spared differentiated cardiomyocytes, which dedifferentiate and re-enter the cell cycle.

Surprisingly, we have found that proliferating cardiomyocytes experience replication stress, which is a major reason for declining regenerative abilities in aged mammals. Zebrafish can overcome the replication stress with the help of BMP signaling. Thus, we speculate that zebrafish heart regeneration depends on an elevated ability to overcome roadblocks that cause declining tissue renewal during aging in mammals, suggesting that zebrafish regeneration can be used to identify anti-aging mechanisms.

The successful PhD candidate will use state-of-the art *in vivo* experiments in zebrafish, including Cre-lox based transgenics, genetic mutants and RNASeq to test this hypothesis and to identify mechanisms by which BMP signaling alleviates replication stress. The project is embedded in a collaborate research initiative (SFB) of Ulm University.



We are looking for an enthusiastic, highly motivated scientist (f/m/d) who is dedicated to performing fundamental research.

We expect:

- Training in developmental biology, molecular biology, cellular biology or related fields.
- Enthusiasm for regenerative biology.
- Excellent communication skills in spoken and written English.

We offer:

- The opportunity to work in an international, dynamic and motivated team.
- State-of-the art resources, including a 1000 tank zebrafish facility.
- The possibility to join the international graduate school of Ulm University, iGradU.
- Payment and benefits according to the collective agreement TV-L 13.

Further information about our lab can be found at www.uni-ulm.de/weidinger.

Applications including a CV, a statement of research experience and interests (max. 2 pages), and contact data for 2-3 references should be emailed to Prof. Dr. **Gilbert Weidinger**, gilbert.weidinger@uni-ulm.de until 30.4.2021.