

Molecular Biology of Ageing

Responsible persons: Prof. Dr. Peter Baumann, Prof. Dr. Brian Luke, Dr. Olga Vydzhak

Winter semester 2022 / 23

Spots available: 18

ECTS credits: 30

Lecture Topics (16A/C):

Brian Luke Genetics of Human Ageing, Telomeres and Telomeroopathies

Susanne Foitzik Origins and Evolution of Ageing

Christof Niehrs DNA Methylation, Ageing, and Epigenetic Clock

Natalie Schindler Mitochondrial Decline

Anton Khmelinskii Proteostasis in Ageing

Olga Vydzhak Cellular Senescence, Stem Cells Ageing, mTOR/IGF/FOXO in Ageing

Helle Ulrich DNA Damage, Mutations, and Ageing

Tobias Bopp Ageing and Senescence of the Immune System

Sara Vieira-Silva Aging-related changes of the microbiome

Nard Kubben Progeria / Premature Ageing Syndromes

Peter Baumann Model Organisms for Ageing Research, Ageing-Associated Diseases

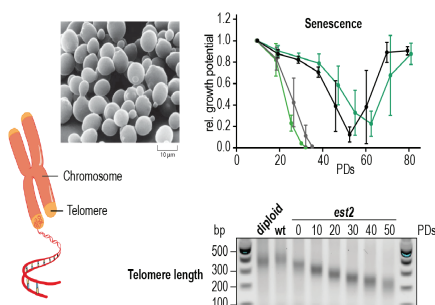
Seminar Series (16A/C):



From López-Otín et al., 2013, Cell.

Seminar series on the molecular biology of ageing will cover hallmark papers in biology of ageing, and will widely cover various aspects of ageing, summarized in the hallmarks of aging (left), from López-Otín et al., 2013, Cell. Students will have a possibility to choose a paper that they will present.

Practical Course + Lab Rotation (16B):



Practical course + lab rotation

will take place in one of the Lecturers' labs and will allow students to gain experience in their preferred area of ageing studies. As an example, in the Luke lab students will focus on studying telomere shortening and replicative senescence in the model organism *S. cerevisiae* (from <http://book.bionumbers.org>). Students will address the replicative potential of telomerase-negative budding yeast cells (top right) and analyze their telomere length by Telo-PCR (bottom right).

Credit point requirements:

Module 16A: - Written exam
- Presentation during seminar series

Module 16B: - Oral Exam (Poster or Presentation)