



Mature fast, die young, but what about germ cells? Germline development and aging in the turquoise killifish - naturally short-lived vertebrate

Project name	Mature fast, die young, but what about germ cells? Germline development and aging in the turquoise killifish - naturally short-lived vertebrate
Registration number	GN22-017810
Realization date	1. 1. 2022 – 31. 12. 2025
Recipient	University of South Bohemia in České Budějovice Faculty of Fisheries and Protection of Waters
Grant program	Czech Science Foundation
Responsible solver	Ing. Roman Franěk, Ph.D.

PROJECT GOALS

Aging is a complex process affecting the whole organism. However, little is known on how germ stem cells age in non-mammalian vertebrates despite their significance. Germ stem cells are precursors of the gametes, which makes them irreplaceable for continuing life. This project will take advantage of a recently established short-lived fish model – the turquoise killifish. The changes germ stem cells undergo during a lifespan, with particular emphasis on the senescent period, will be characterized using modern omics tools together with both traditional techniques of developmental biology and transgenic reporter lines. A novel platform for studying the biology of aged germ cells outside the aged organism will be developed so as to identify an autonomous and nonautonomous mechanism of germline aging and possibilities of preserving their viability and functionality. Obtained results will identify vertebrate conserved and fish-specific mechanisms of germline aging, representing a milestone for senescent phenotype modelling in fish as they are important vertebrate models.

PROJECT BUDGET

	Amount CZK
Total approved costs	4 561 thou. CZK
Public financial support	4 561 thou. CZK
Other public sources	0 thou. CZK
Non-public and foreign sources	0 thou. CZK

CONTACT

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