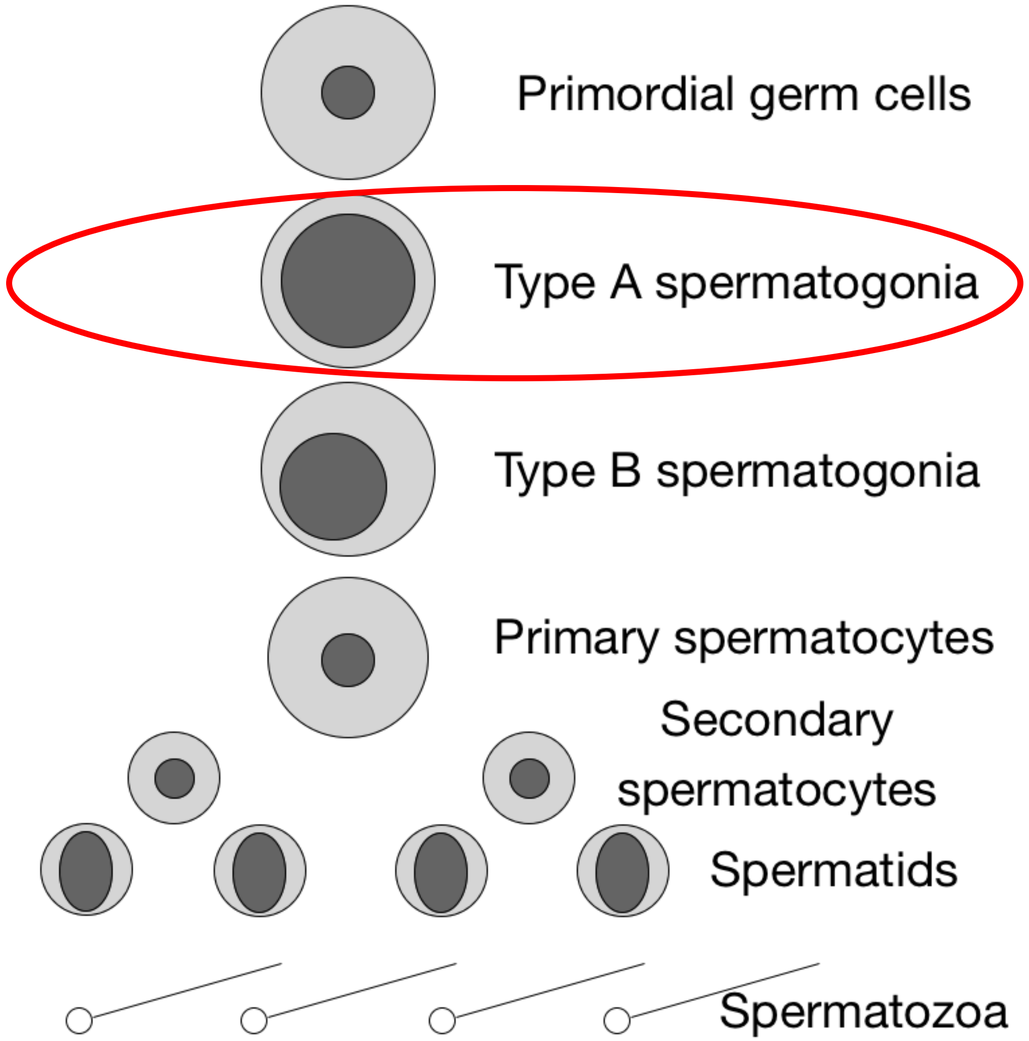
Our experience with surrogate technology in fish: expectations vs. reality

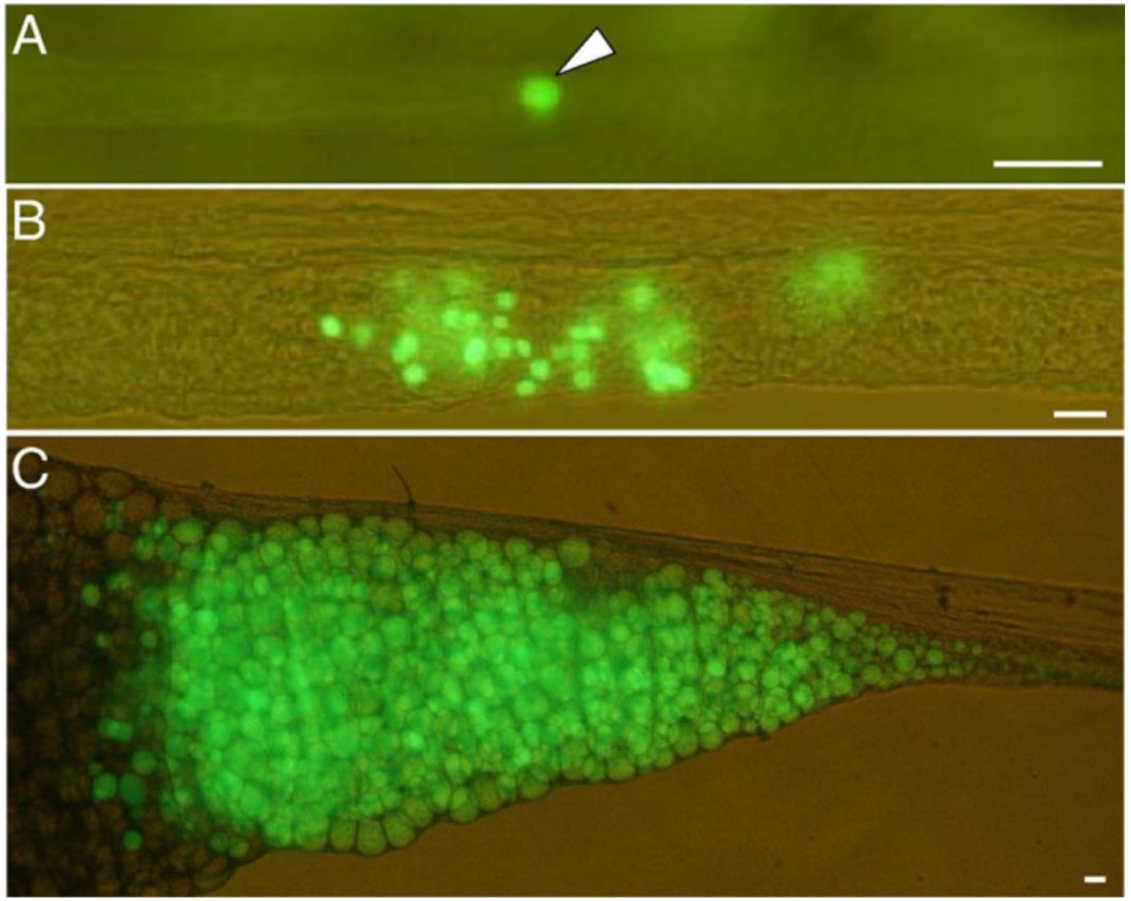
Ákos Horváth, Kinga Katalin Lefler, Réka Enikő Balogh, Nevena Kitanović, György Hoitsy, Simona Sušnik Bajec, Zoran Marinović

MAGYAR AGRÁR- ÉS ÉLETTUDOMÁNYI EGYETEM

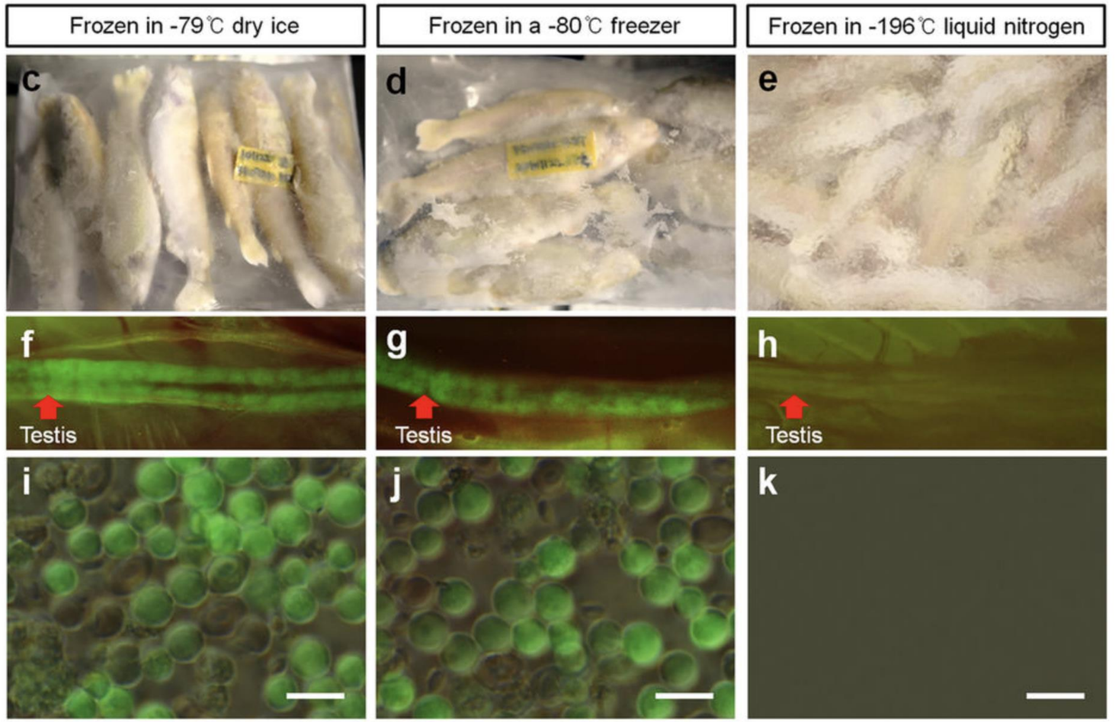
INTRODUCTION

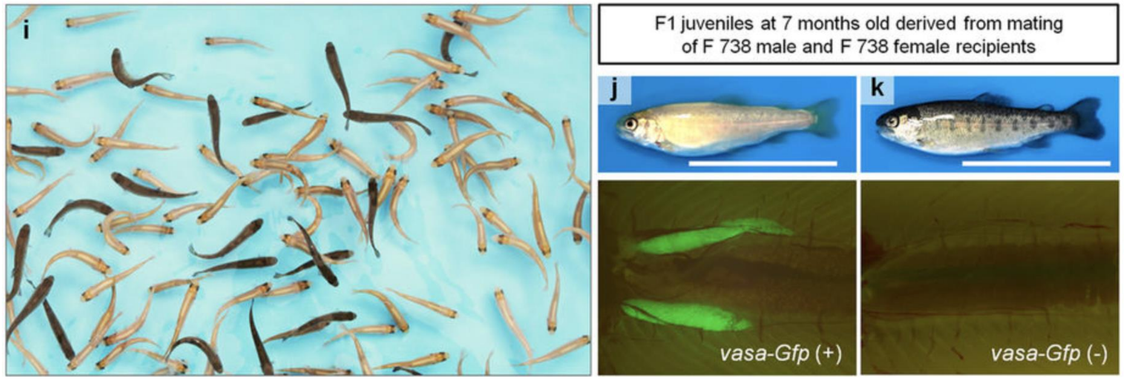


INTRODUCTION



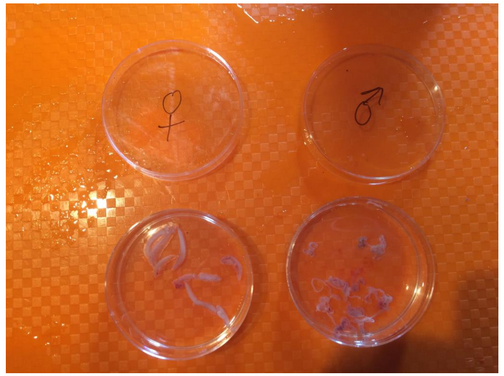
Yoshizaki et al., Comparative Biochemistry and Physiology, Part D 6 (2011) 55–61



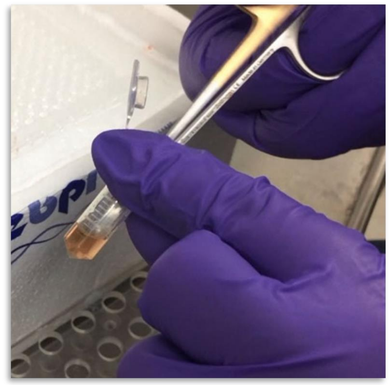


Lee et al., Scientific Reports volume 5, Article number: 16045 (2015)

METHODS

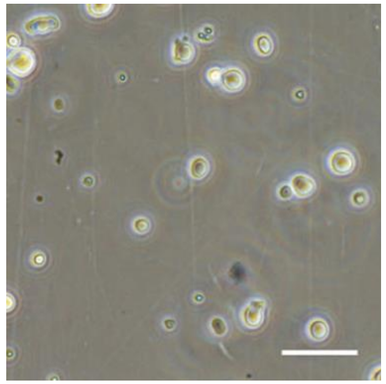


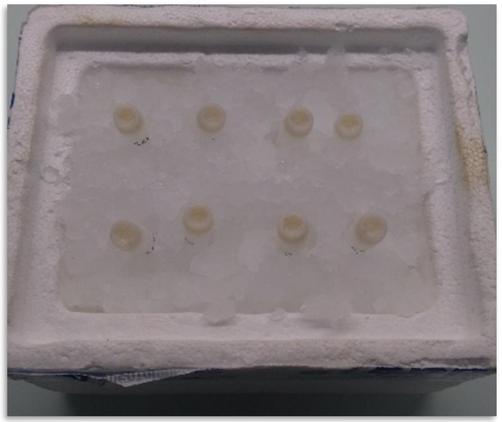
L-15 + 10% FBS



2 mg/ml collagenase
+ 10 mg/ml DNA-se
in L-15 + 10% FBS

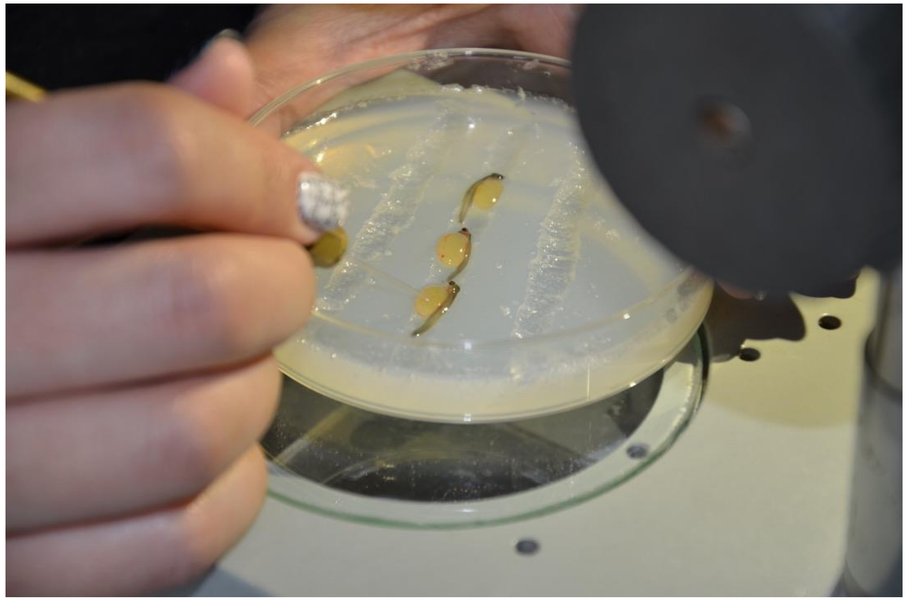
90 min





METHODS

MAGYAR AGRÁR- ÉS ÉLETTUDOMÁNYI EGYETEM



METHODS

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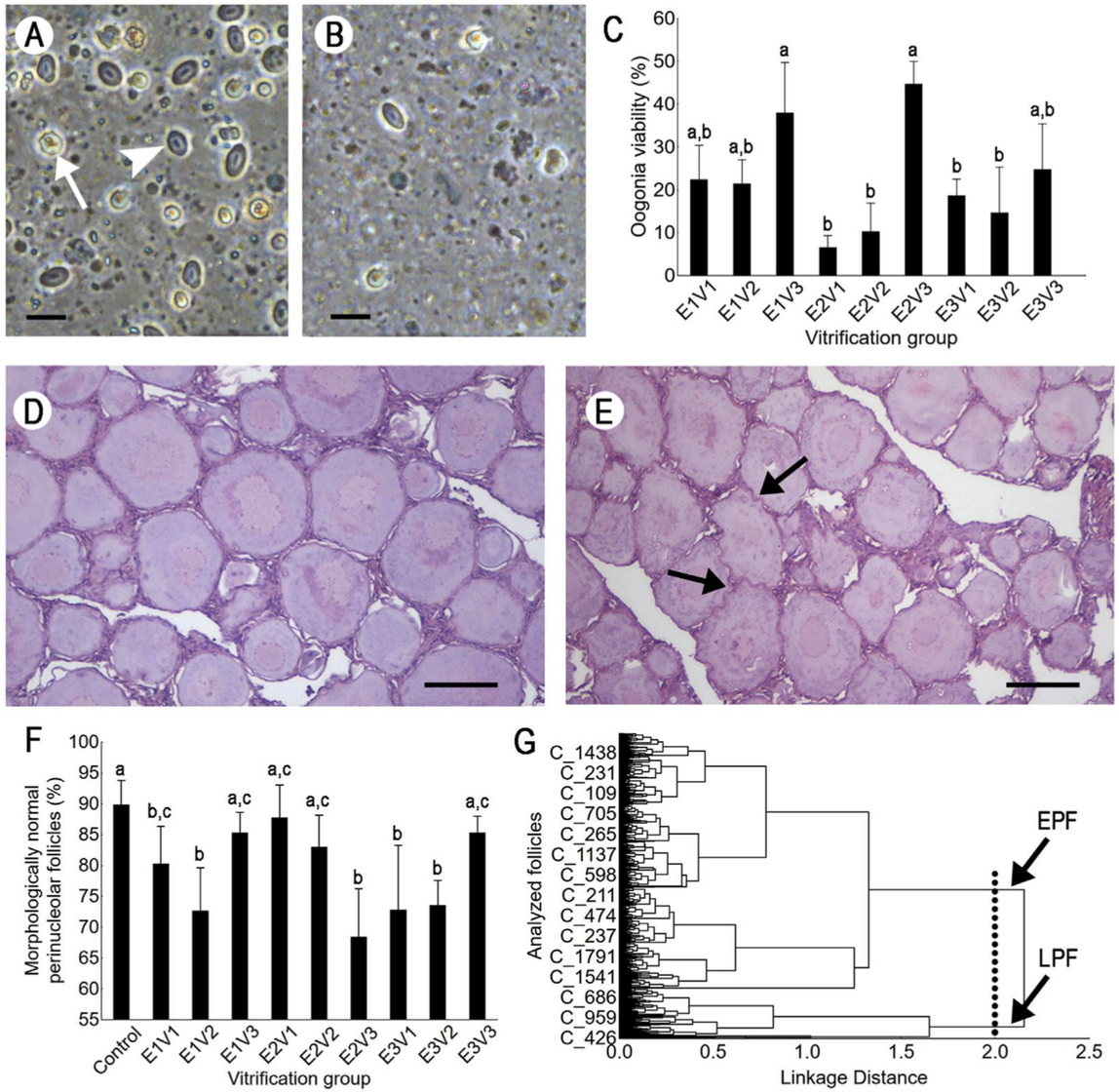


Contents lists available at ScienceDirect

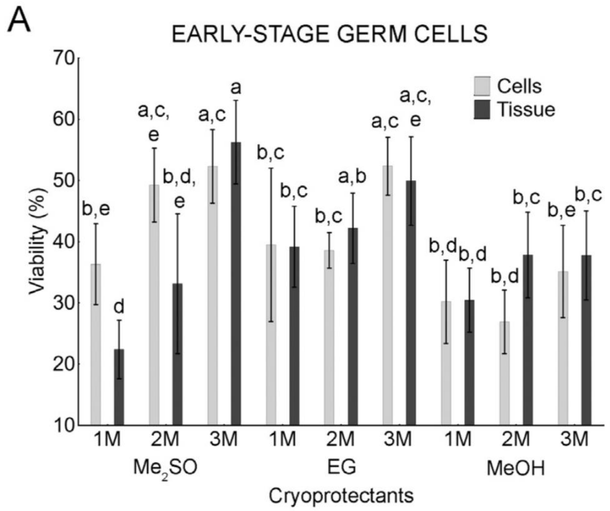
Cryobiology

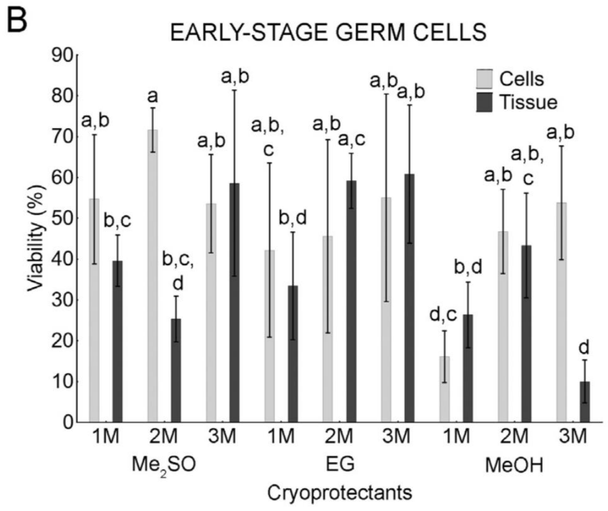
journal homepage: www.elsevier.com/locate/ycryo

First successful vitrification of salmonid ovarian tissue

Jelena Lujić [a], Zoran Marinović [a, b, *], Simona Sušnik Bajec [c], Ida Djurdjevič [c], Eszter Kása [a], Béla Urbányi [a], Ákos Horváth [a]

RESULTS





General and Comparative Endocrinology 245 (2017) 77–83

Contents lists available at ScienceDirect

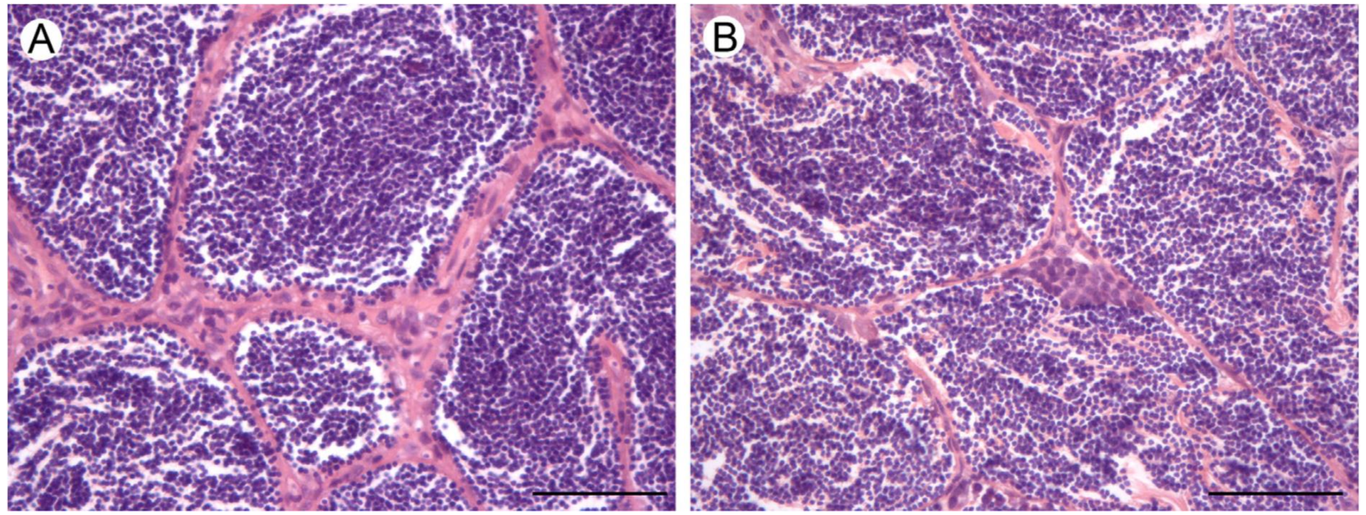
General and Comparative Endocrinology

journal homepage: www.elsevier.com/locate/ygcen

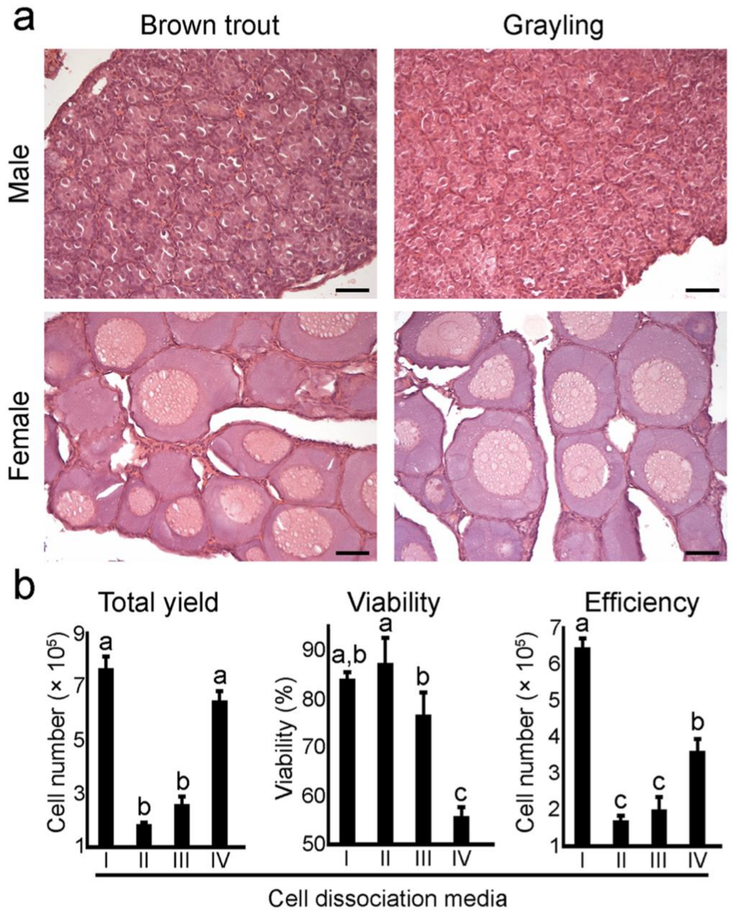
Cryosurvival of isolated testicular cells and testicular tissue of tench *Tinca tinca* and goldfish *Carassius auratus* following slow-rate freezing

Zoran Marinović [a,b,*], Jelena Lujić [a], Eszter Kása [a], Gergely Bernáth [a], Béla Urbányi [a], Ákos Horváth [a]

[a] Szent István University, Department of Aquaculture, Páter K. u. 1., 2100 Gödöllő, Hungary
[b] University of Novi Sad, Department of Biology and Ecology, Trg Dositeja Obradovića 3, 21000 Novi Sad, Serbia

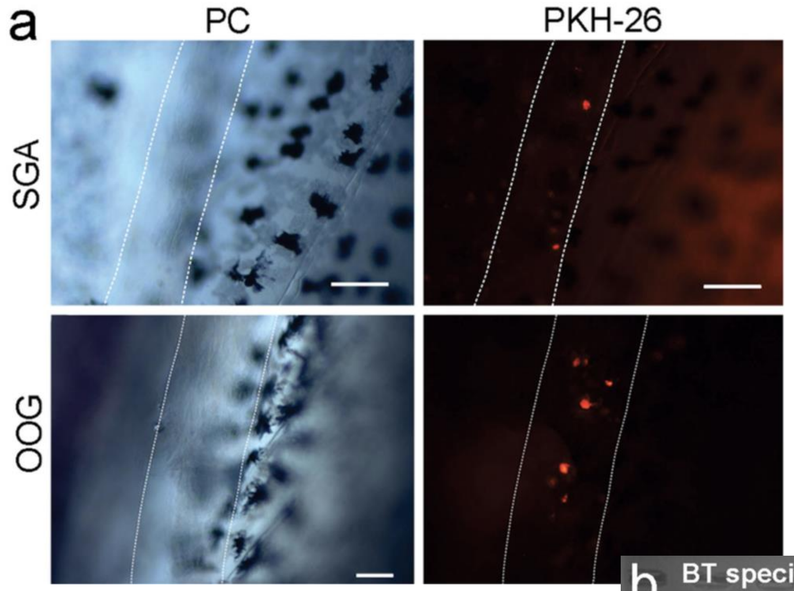


RESULTS



2 mg/ml collagenase + 10 mg/ml DNA-se in L-15 + 10% FBS

90 min

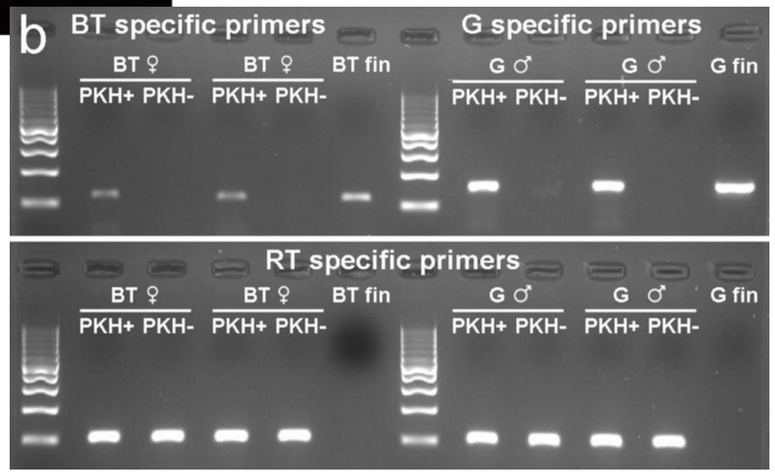


Fish Physiol Biochem
https://doi.org/10.1007/s10695-018-0510-4

CrossMark

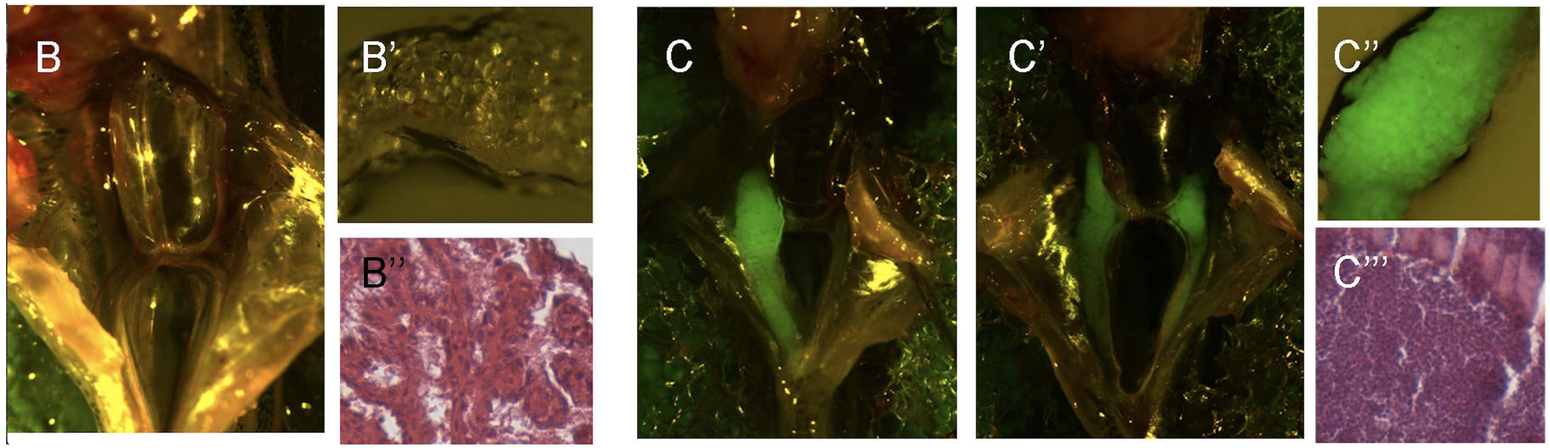
Interspecific germ cell transplantation: a new light in the conservation of valuable Balkan trout genetic resources?

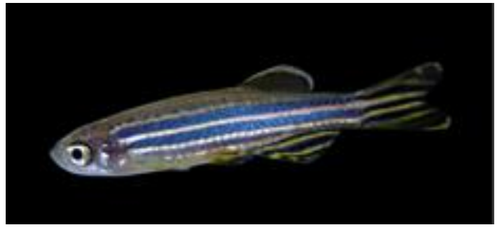
Jelena Lujić · Zoran Marinović · Simona Sušnik Bajec · Ida Djurdjevič · Béla Urbányi · Ákos Horváth

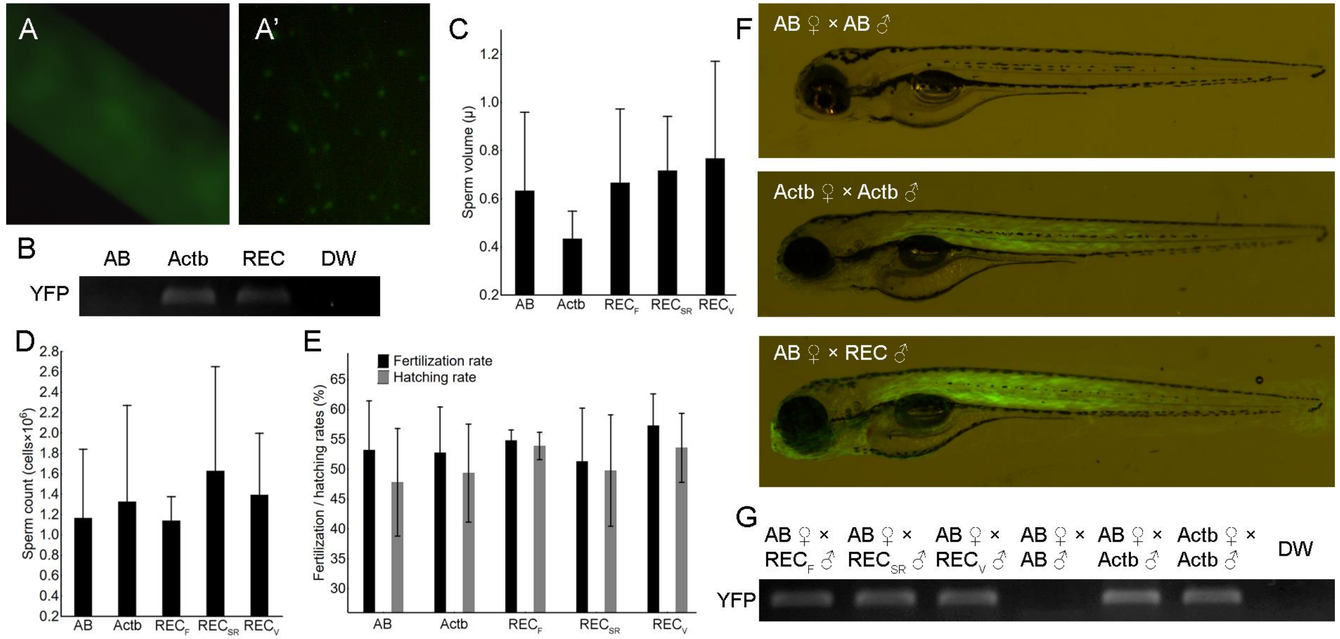


RESULTS

MAGYAR AGRÁR- ÉS ÉLETTUDOMÁNYI EGYETEM







SCIENTIFIC REPORTS
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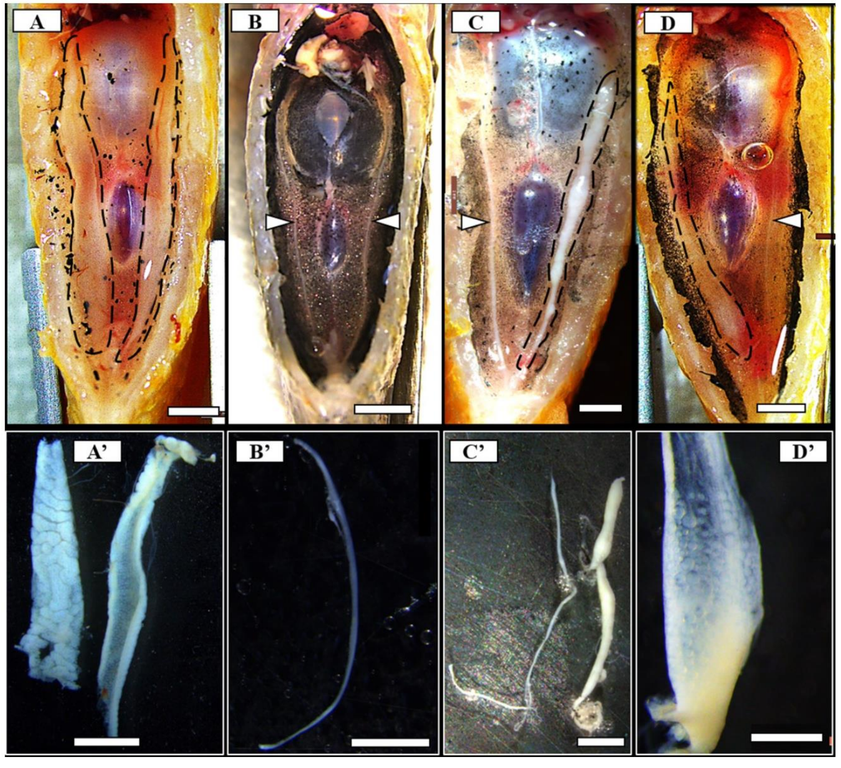
Preservation of zebrafish genetic resources through testis cryopreservation and spermatogonia transplantation

Received: 27 July 2018
Accepted: 24 August 2019
Published online: 25 September 2019

Zoran Marinović[1], Qian Li[2], Jelena Lujić[1], Yoshiko Iwasaki[2], Zsolt Csenki[1], Béla Urbányi[1], Goro Yoshizaki[2] & Ákos Horváth[1]

RESULTS



PLOS ONE

RESEARCH ARTICLE

Cryopreservation and transplantation of common carp spermatogonia

Roman Franěk[1☯]*, Zoran Marinović[2☯], Jelena Lujić[2], Béla Urbányi[2], Michaela Fučíková[1], Vojtěch Kašpar[1], Martin Pšenička[1‡], Ákos Horváth[2‡]

1 University of South Bohemia in České Budějovice, Faculty of Fisheries and Protection of Waters, South Bohemian Research Center of Aquaculture and Biodiversity of Hydrocenoses, Czech Republic,
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‡ These authors also contributed equally to this work.
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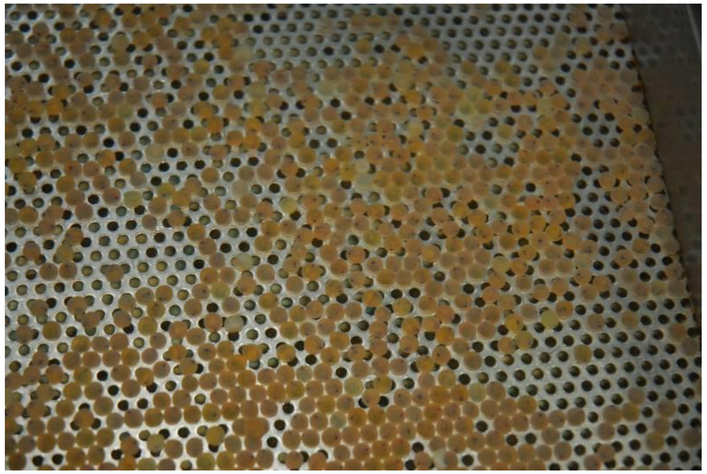
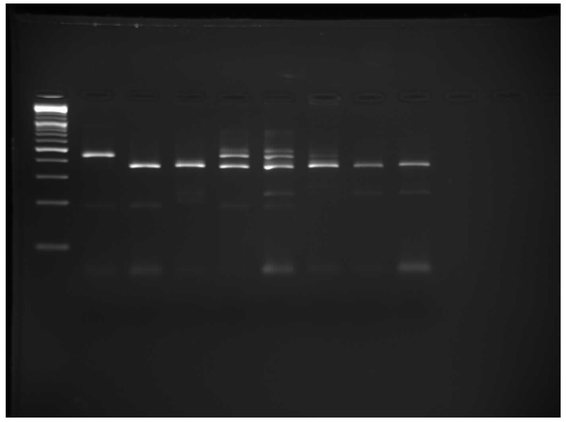
RESULTS

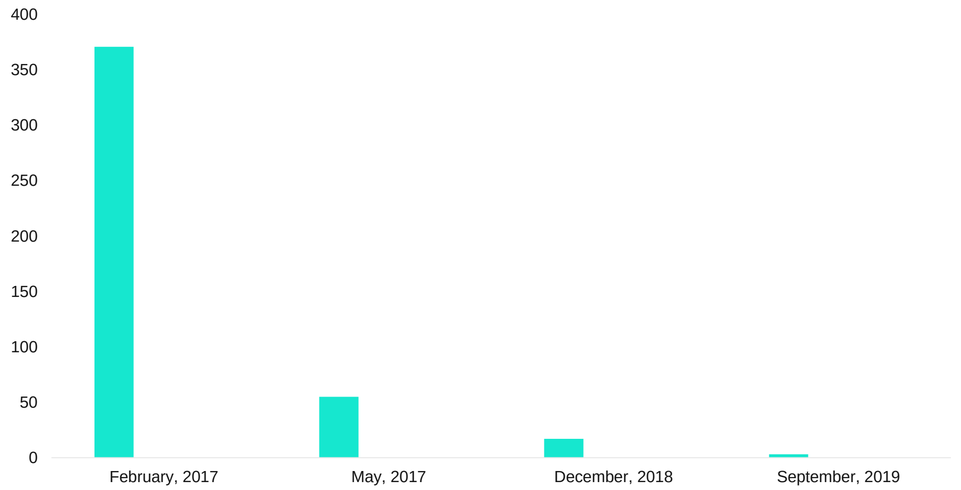
MAGYAR AGRÁR- ÉS ÉLETTUDOMÁNYI EGYETEM

RESULTS

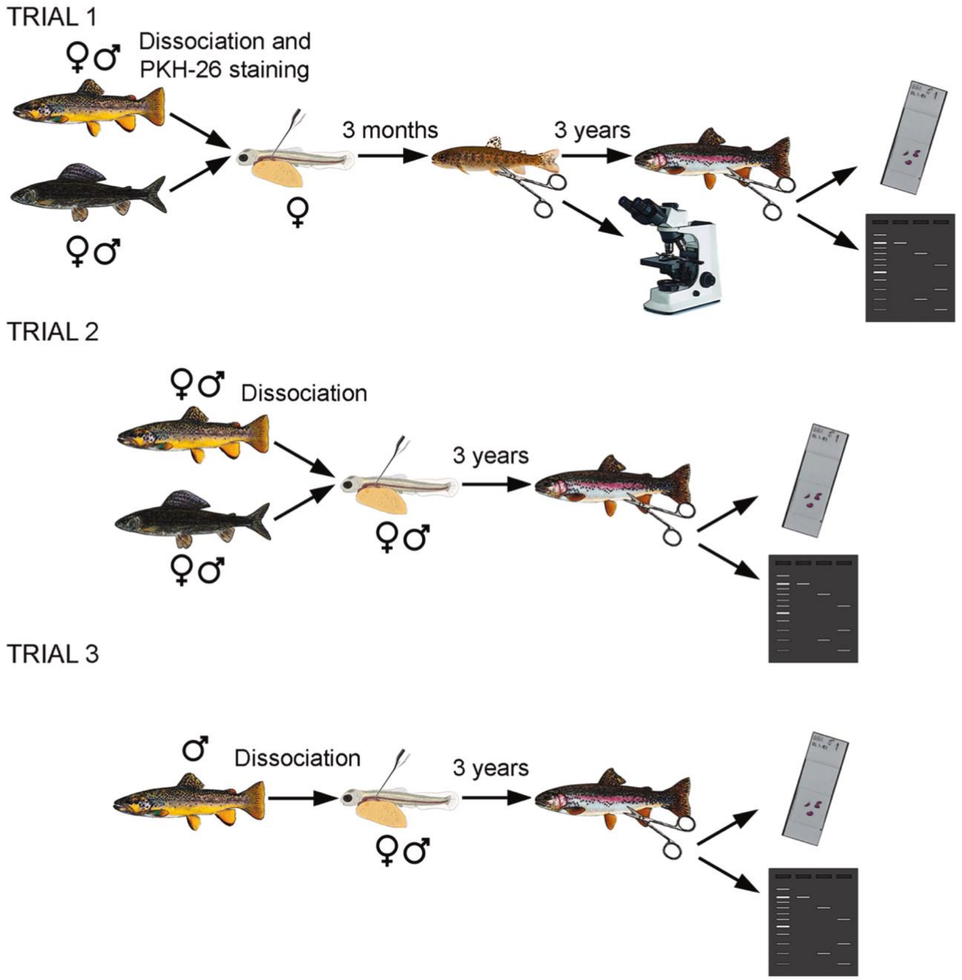


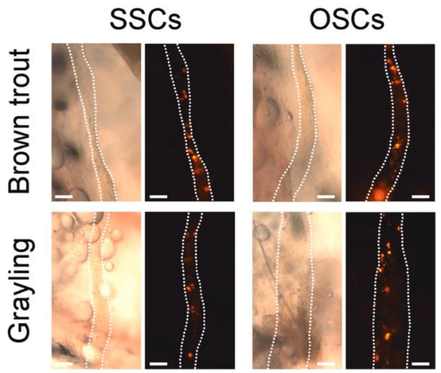


LDH-C1* gene amplified and sequenced



RESULTS



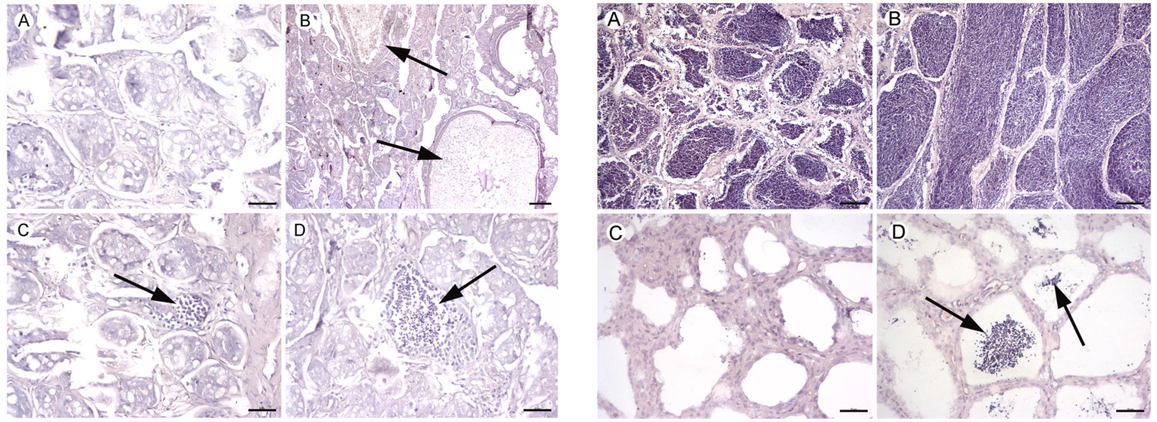


66.7%

36.4%

Trial 1

Trial 3



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Aquaculture Reports

journal homepage: www.elsevier.com/locate/aqrep

Evaluation of triploid rainbow trout *Oncorhynchus mykiss* as a surrogate parent for brown trout *Salmo trutta m. fario* and grayling *Thymallus thymallus*

Zoran Marinović [a,*], Jelena Lujić [b], Simona Sušnik Bajec [c], Ida Djurdjević [c], Aleš Snoj [c], György Hoitsy [d], Béla Urbányi [a], Ákos Horváth [a]

CONCLUSIONS

MAGYAR AGRÁR- ÉS ÉLETTUDOMÁNYI EGYETEM

- Surrogate technology offers possibilities in the conservation of genetic resources in fish
- Surrogate technology can successfully be applied to cyprinids and salmonids
- Careful selection of recipients is important

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