



Post testicular sperm maturation trigger in sturgeon.



Laboratory of reproductive physiology

Supervisor – Jacky Cosson

First year PhD student

Pietro Boccaletto



Germany

Poland

Czech Republic

Austria

Slovakia

Prague
(Praha)

Vienna
(Wien)

Bratislava

Liberec

Teplice

Ústí
nad Labem

Karlovy
Vary

Kladno

Hradec
Králové

Pardubice

Krnov

Pilsen
(Plzeň)

Rokycany

Příbram

Ostrava

Havířov

Olomouc

Frýdek-Místek

Tábor

Havlíčkův
Brod

Prostějov

Brno

Uherské
Hradiste

Kroměříž

Zlín

České
Budějovice

14°

50°

VODNANY



Fakulta rybnářství
a ochrany vod



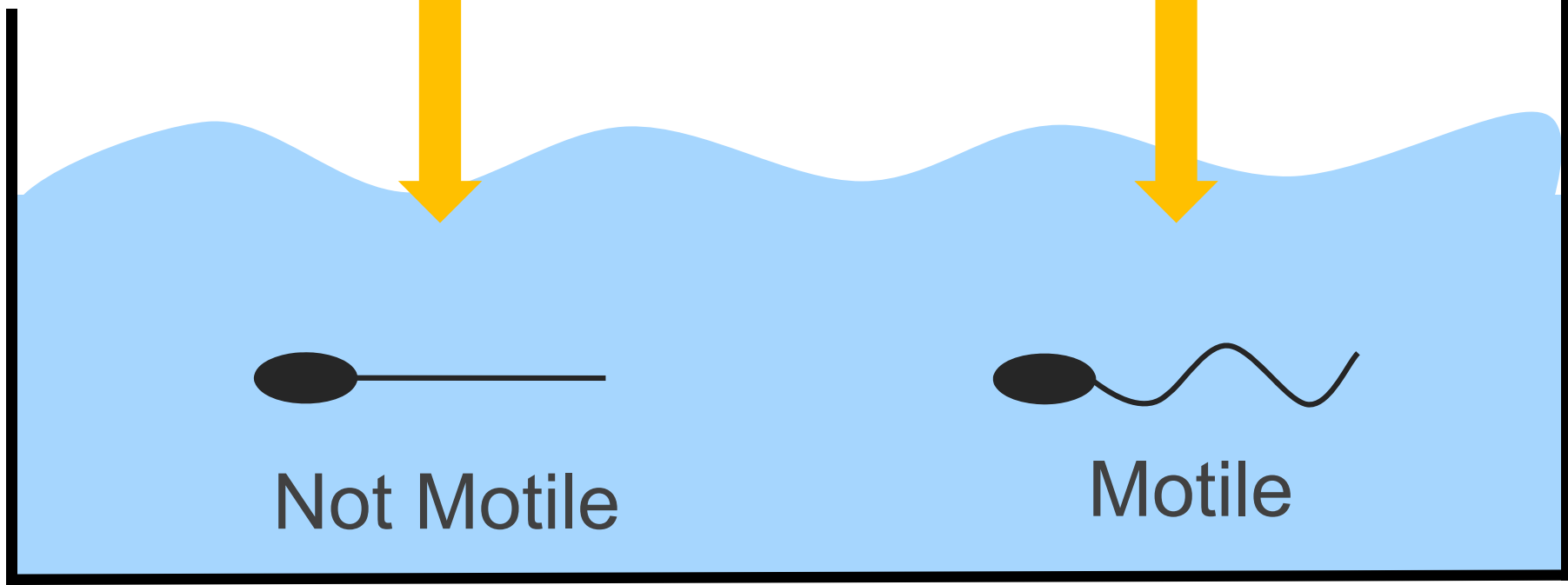


Sperm maturation

Immature

VS

Mature



Not Motile

Motile



ABSTRACT

The aim of the study was to examine sperm maturation in sturgeon and to establish the localization of the maturation. We demonstrated that sperm maturation occurs in sturgeon outside the testes via dilution of sperm by urine. The process involves the participation of high molecular weight (>10 kDa) substances and calcium ions.

Short Communication

In vitro sperm maturation in sterlet, *Acipenser ruthenus*

Borys Dzyuba^{a,*}, Jacky Cosson^a, Sergii Boryshpolets^a, Olga Bondarenko^a,
Viktoriya Dzyuba^{a,b}, Galina Prokopchuk^a, Ievgeniia Gazo^a,
Marek Rodina^a, Otomar Linhart^a

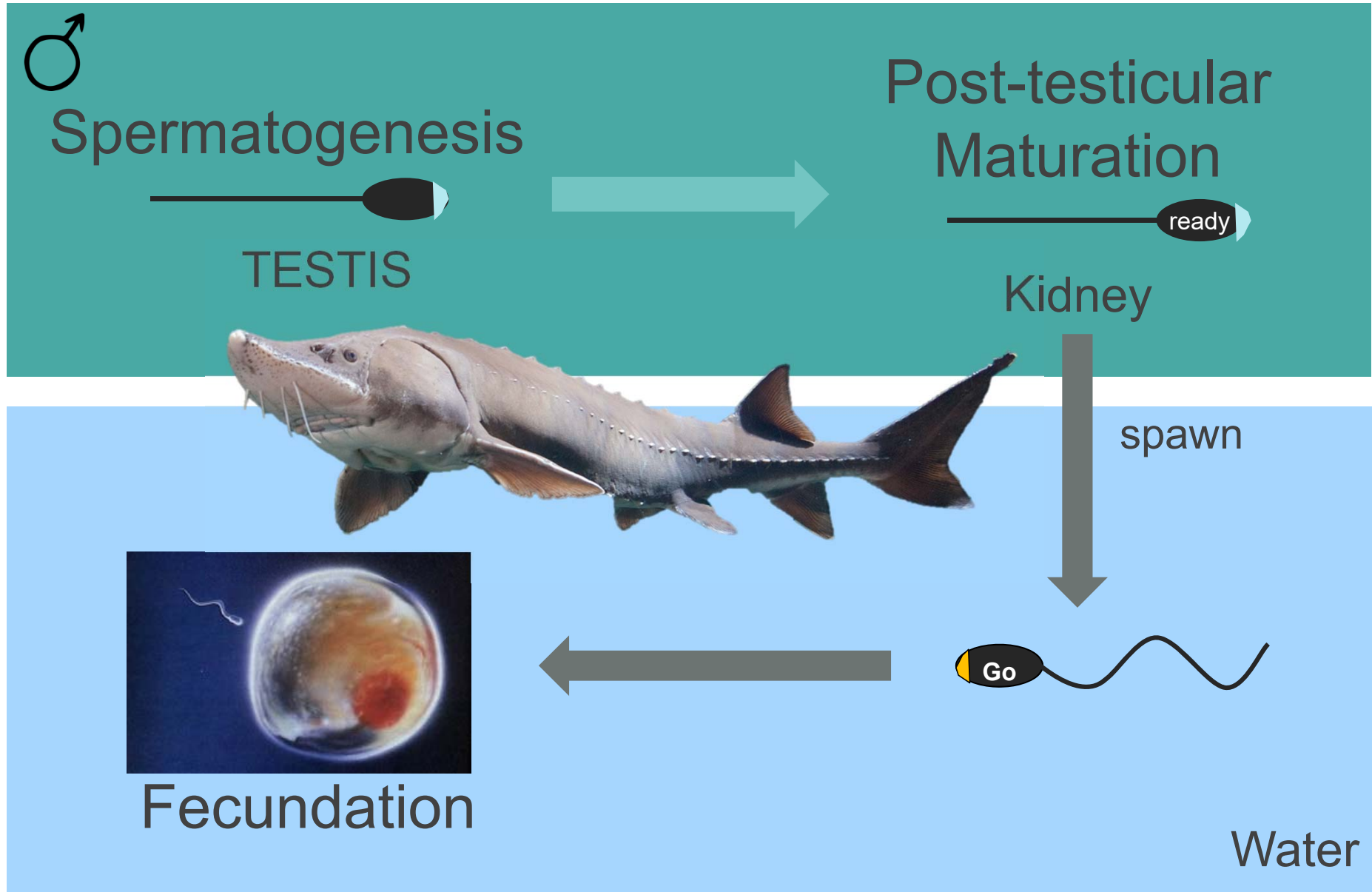
^a Faculty of Fisheries and Protection of Waters, University of South Bohemia in Ceske Budejovice, South Bohemian Research Center of Aquaculture and Biodiversity of Hydrocenoses, Zatisi 728/II, 38925 Vodnany, Czech Republic

^b Institute of Biology, V.N. Karazin Kharkiv National University, Kharkiv, Ukraine



Sperm maturation

Sturgeon





Sturgeon sperm sampling

Testicular sperm - IMMATURE



Wolffian duct sperm MATURE





Epididymal maturation in mammals



Modification of the composition of the sperm membrane by the media that surrounds it.

Release

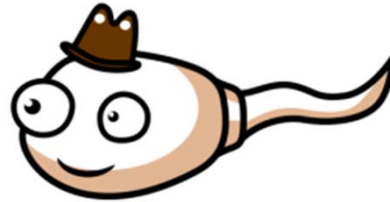
Post-translational
Modification

Absorption

of proteins and lipids



Post translational modifications key post-testicular maturation in Sturgeon?





Understand the maturation trigger

What happens at the membrane level focusing on:

***sperm membrane proteins.**

***Their post translational modifications.**



2D – DIGE in gel electrophoresis protein comparison between immature vs mature sperm.



detect difference in proteins composition between samples using fluorescent probes.



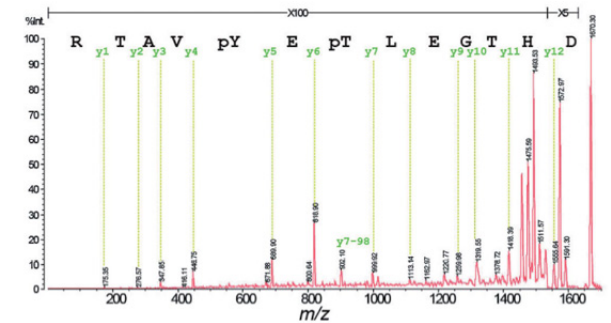
Protein extraction / separation / purification



**PROTEOMIC ANALYSIS
(Ms/Ms ; Maldi-TOF)**



PROTEIN ID?





Conclusion

Sperm post testicular maturation is an important step that is required to make the sperm able to be motile to fertilize the oocyte.

Achieving the ability to mature the testicular sperm in vitro could be a valid technique in aquaculture to recover sperm that otherwise would be not usable.

This preliminary analysis will give me further information necessary to plan the next steps of my experimental



Fakulta rybnářství
a ochrany vod
Faculty of Fisheries
and Protection
of Waters

Jihočeská univerzita
v Českých Budějovicích
University of South Bohemia
in České Budějovice
Czech Republic



***Thanks for your kind
attention.***