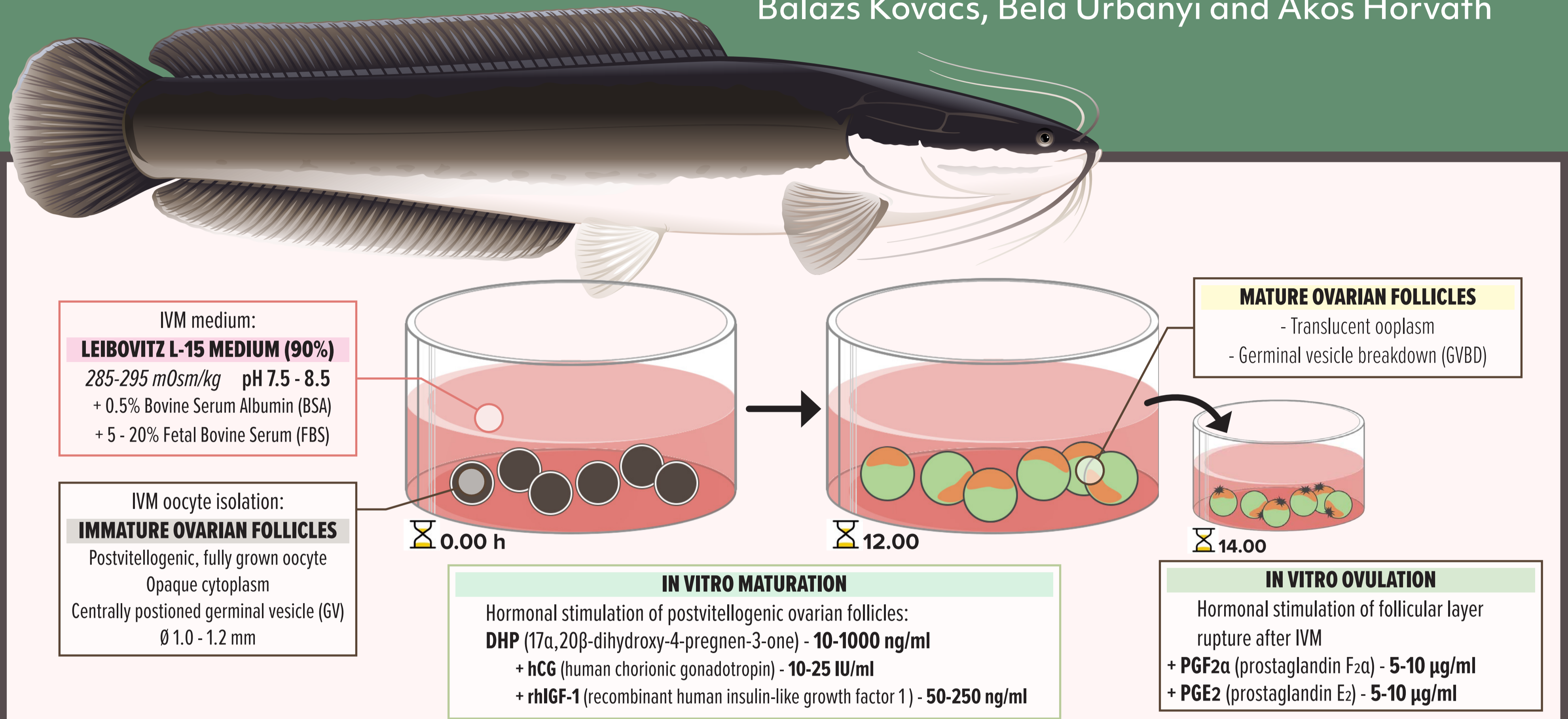
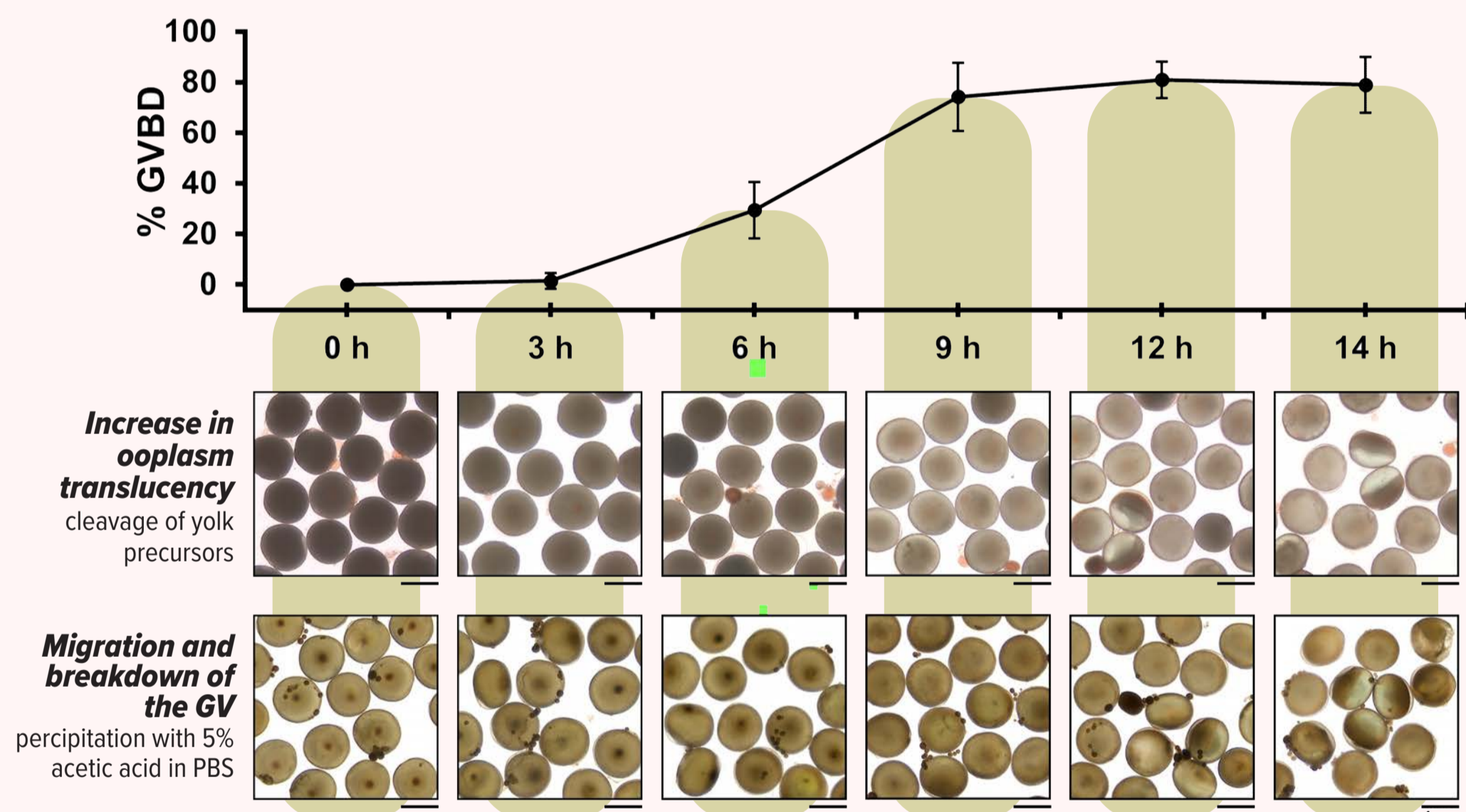


# Producing viable larvae of African catfish *Clarias gariepinus* from *in vitro* matured and ovulated oocytes

**Nevena Kitanović**, Réka Enikő Balogh, Zoran Marinović, Tamás Müller, Balázs Kovács, Béla Urbányi and Ákos Horváth

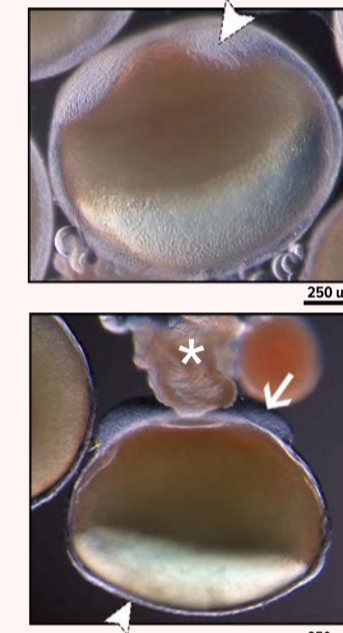


## IN VITRO MATURATION



### Progress of in vitro maturation during a 14-hour treatment with DHP (1 $\mu$ g/ml).

The maturation process was marked by the change in the ooplasm optical density, as well as by the migration of GV (germinal vesicle; GV) towards the periphery and its subsequent dissolution (germinal vesicle breakdown; GVBD), which is a marker for meiosis resumption.

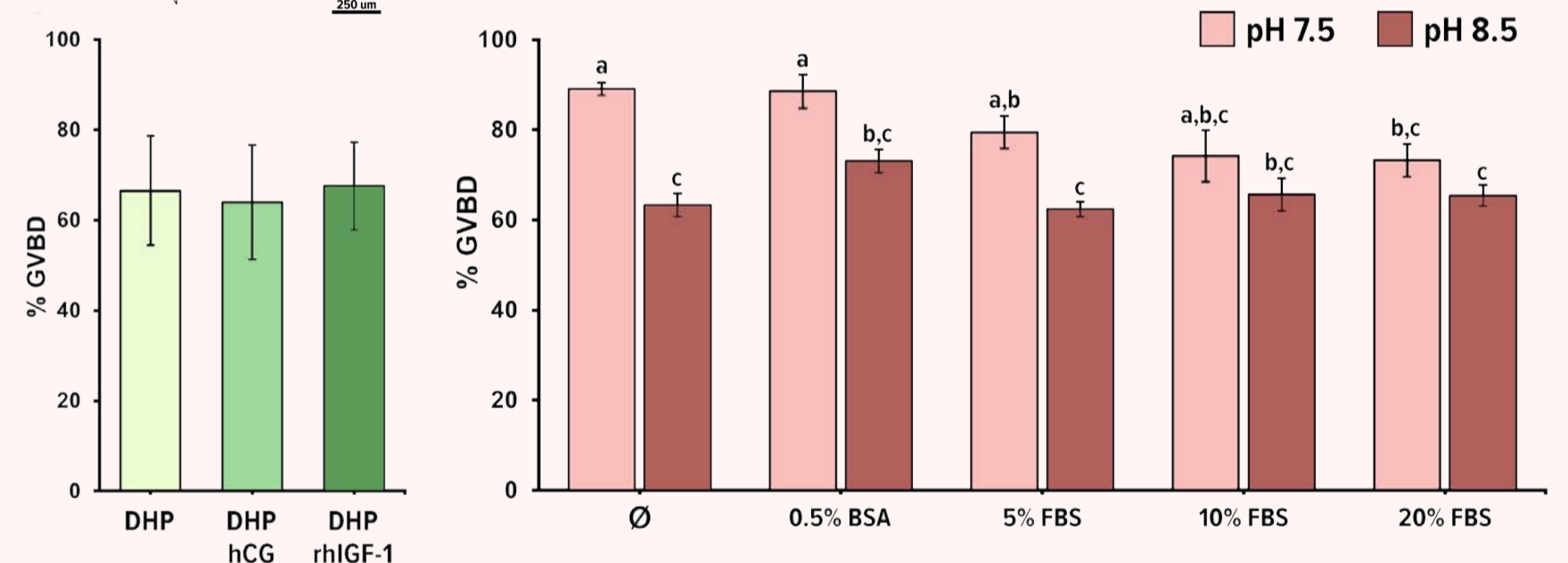


### African catfish ovarian follicle after DHP-induced in vitro maturation.

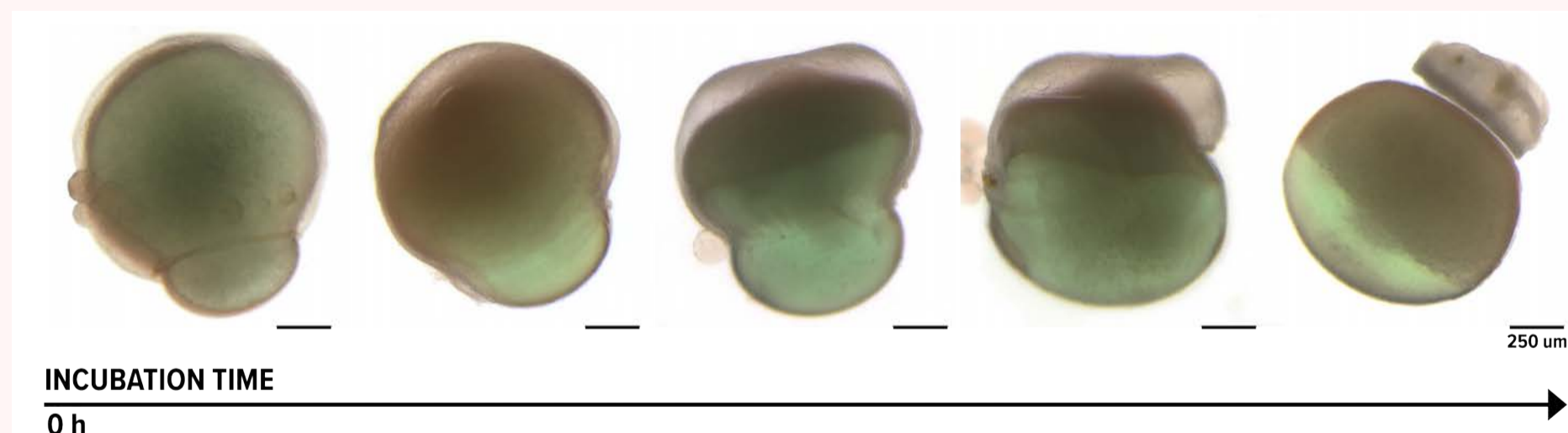
The oocyte is surrounded by an intact follicular layer (not ovulated). An annular bulge formed on the animal pole surrounds the micropyle opening (arrowhead).

### African catfish mature oocyte (egg) after PGF2 $\alpha$ -induced in vitro ovulation.

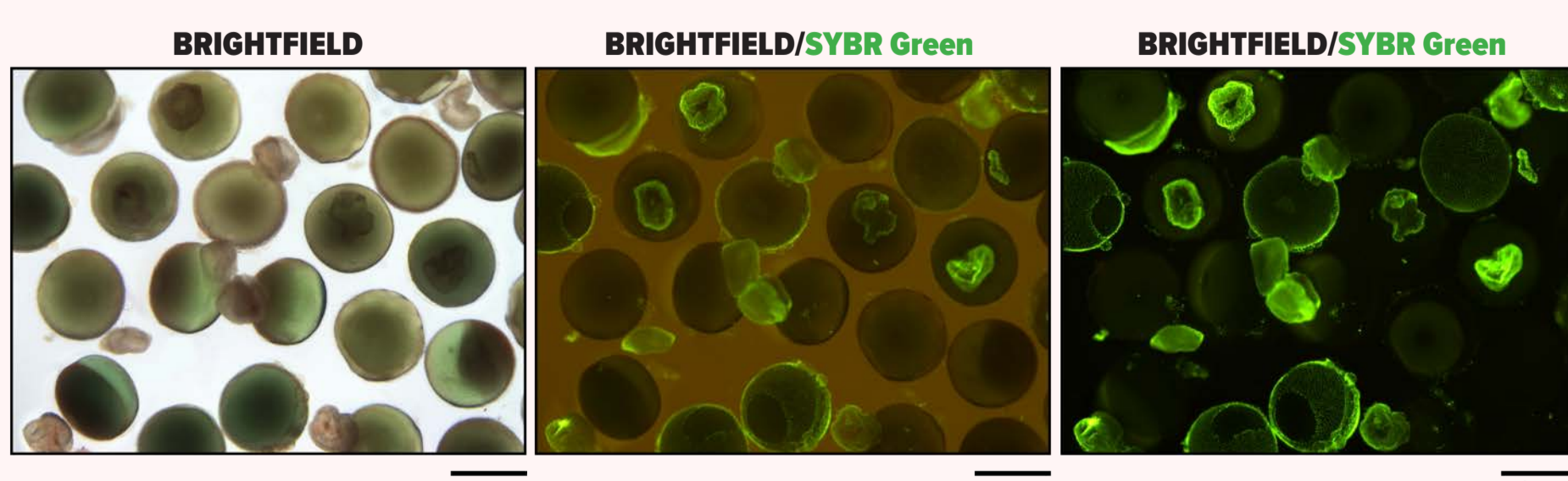
The remnants of the follicular layer are attached to the animal pole (asterisk). After ovulation, an adhesive disc composed of many attaching filaments forms on the animal pole (arrow), while a thin mucous layer surrounds the oocyte surface (arrowhead).



## IN VITRO OVULATION

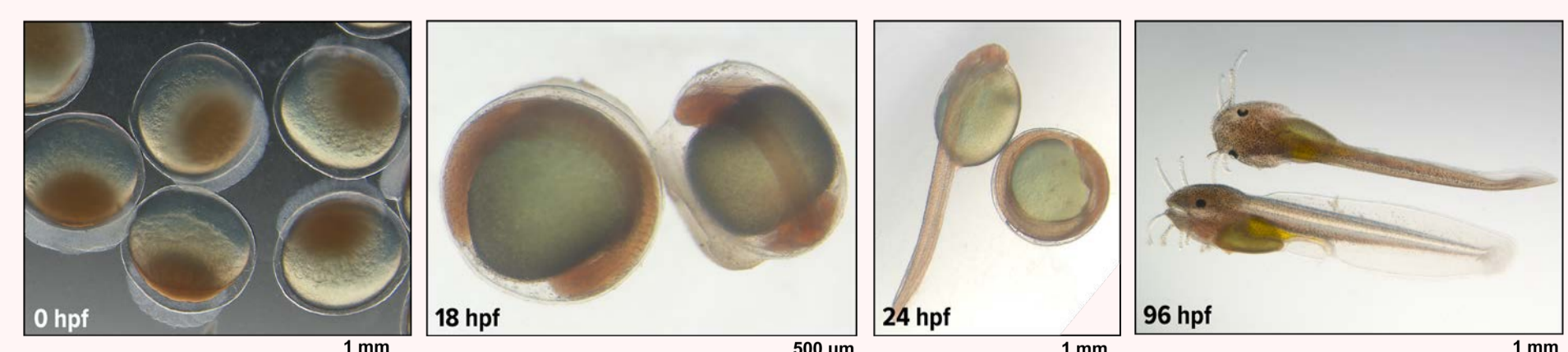
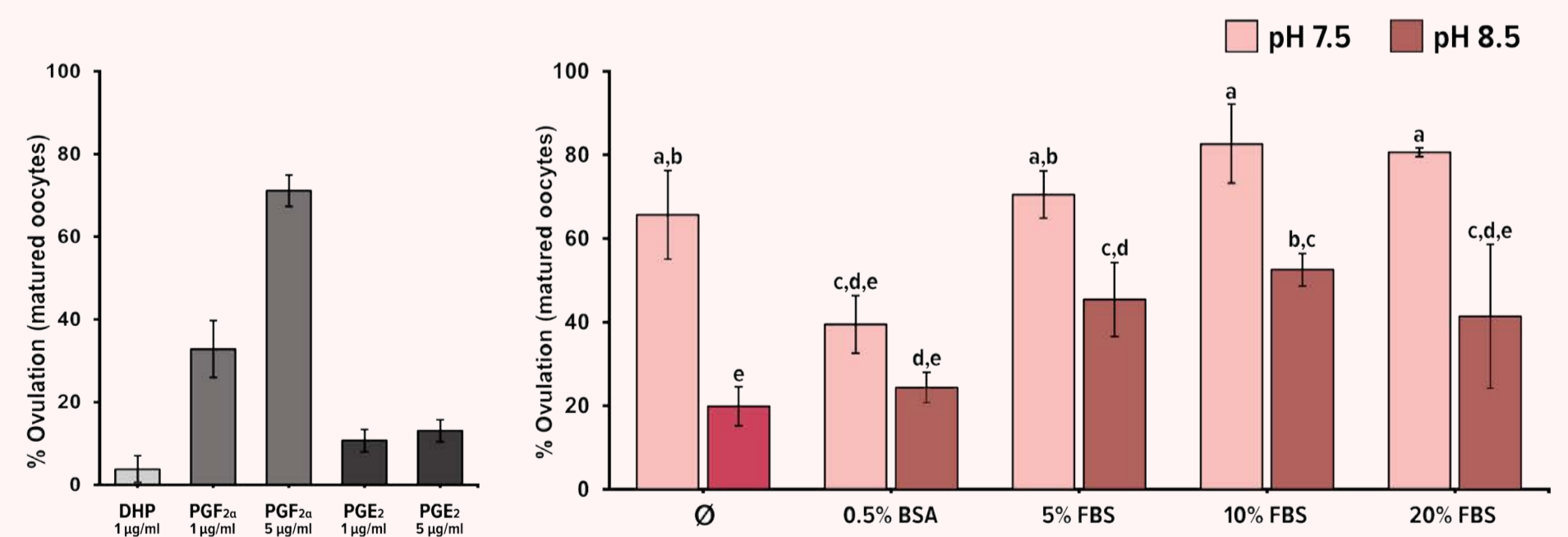


### Progress of follicular layer rupture and ovulation during a 2-hour treatment with PGF2 $\alpha$ (5 $\mu$ g/ml), following a DHP-induced in vitro maturation.



### Visualization of follicular layer integrity during in vitro ovulation.

Nuclei of follicular and thecal cells are stained with SYBR Green I fluorescent dye.



### Fertilization of and development of eggs and embryos of maturation and ovulation in vitro.

In vitro matured and ovulated oocytes obtained in non-supplemented media (pH 7.5) maintained their developmental competence and were successfully fertilized. The hatching rate was 39%, after which the survival rate of larvae was 8% at 72 hours post fertilization (hpf).

