

Dark Waters Make Dark Tadpoles

Pigmentation plasticity in
Spadefoot toad tadpoles



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Crypsis through Background matching

Selection on phenotypes

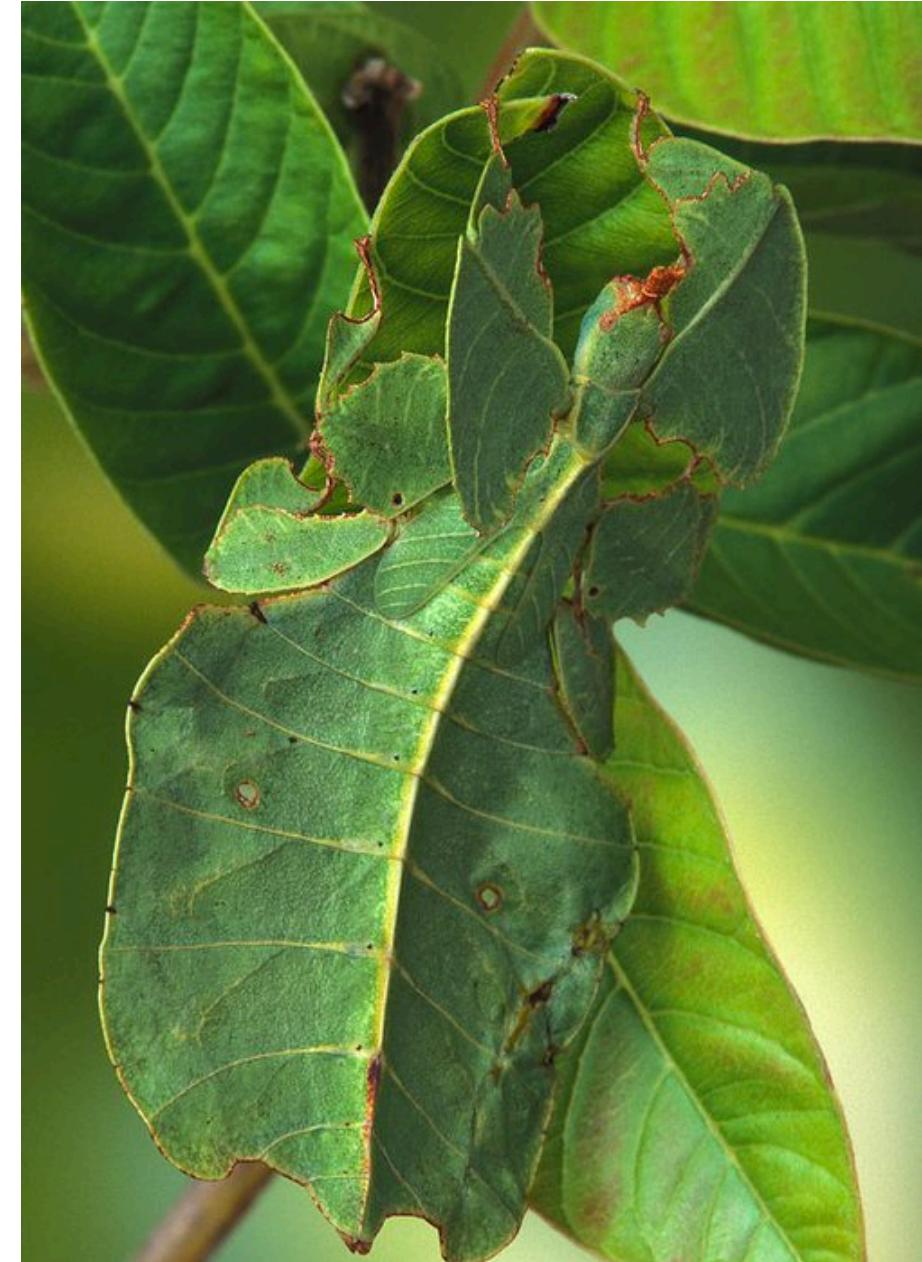


Photo credits: Doug Waylett, Michael Kidwell, Robert Jensen, Anna Veselova, Kris Wiktor, Mircea C, Davem Hunt

Crypsis through Background matching

Pigmentation plasticity



Pigmentation plasticity in amphibians



Non-breeding male



Breeding male



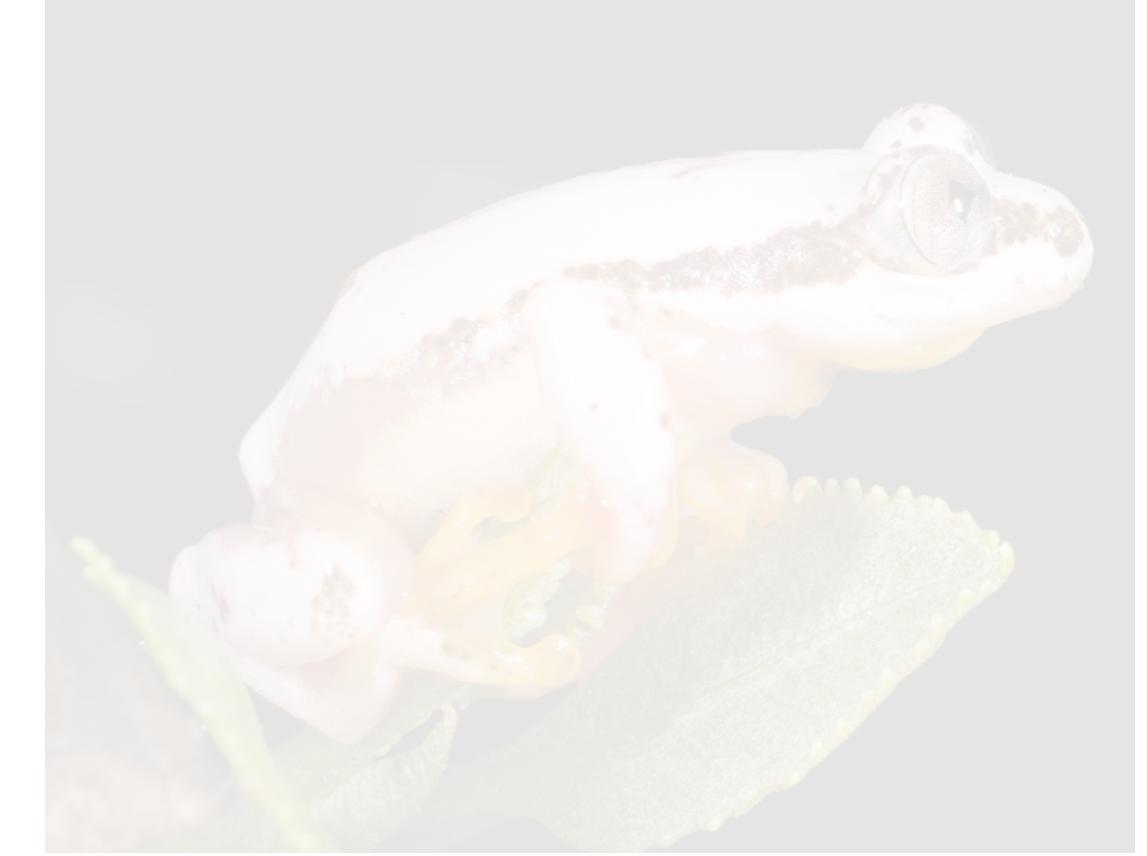
No predators



Predators



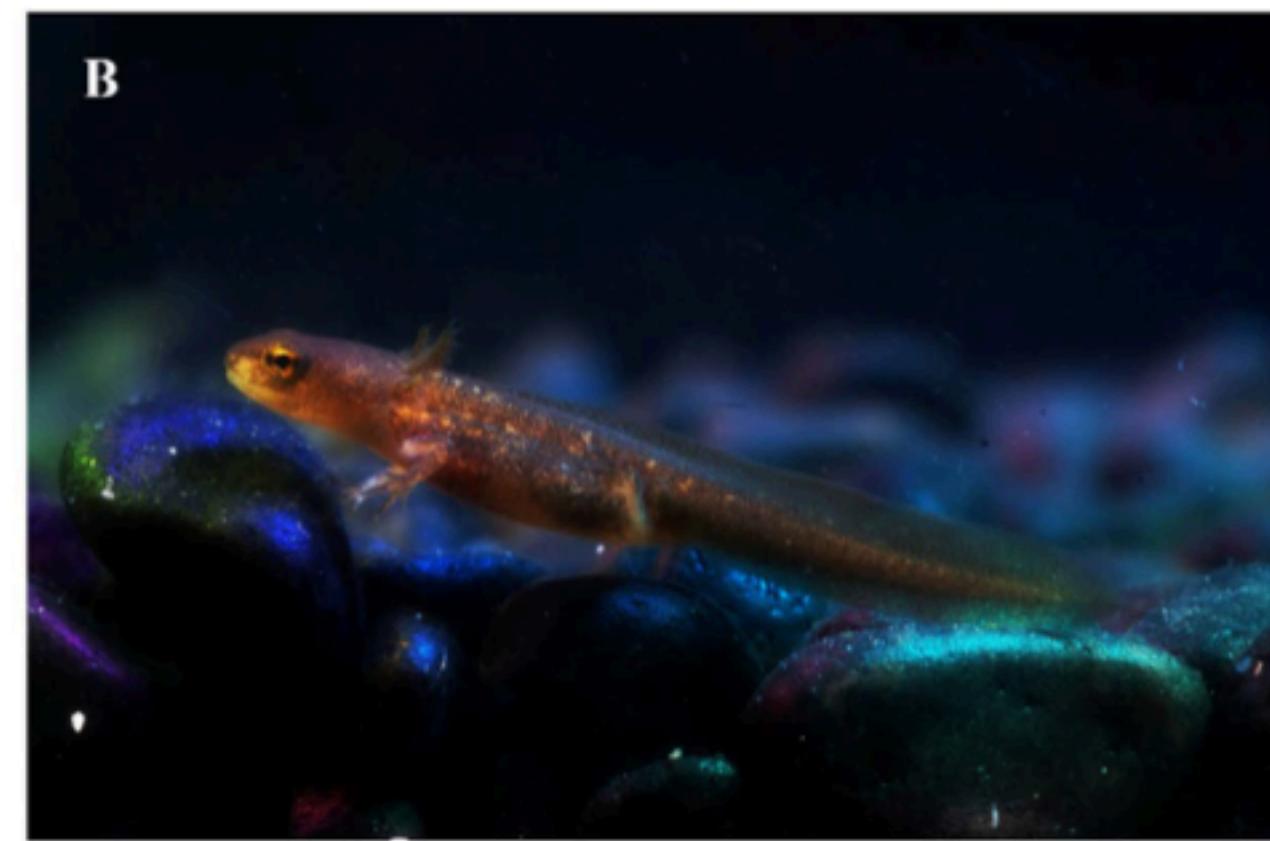
Night



Day



Light background



Dark background

Background matching in Spadefoot toad tadpoles



Western Spadefoot toad
Pelobates cultripes



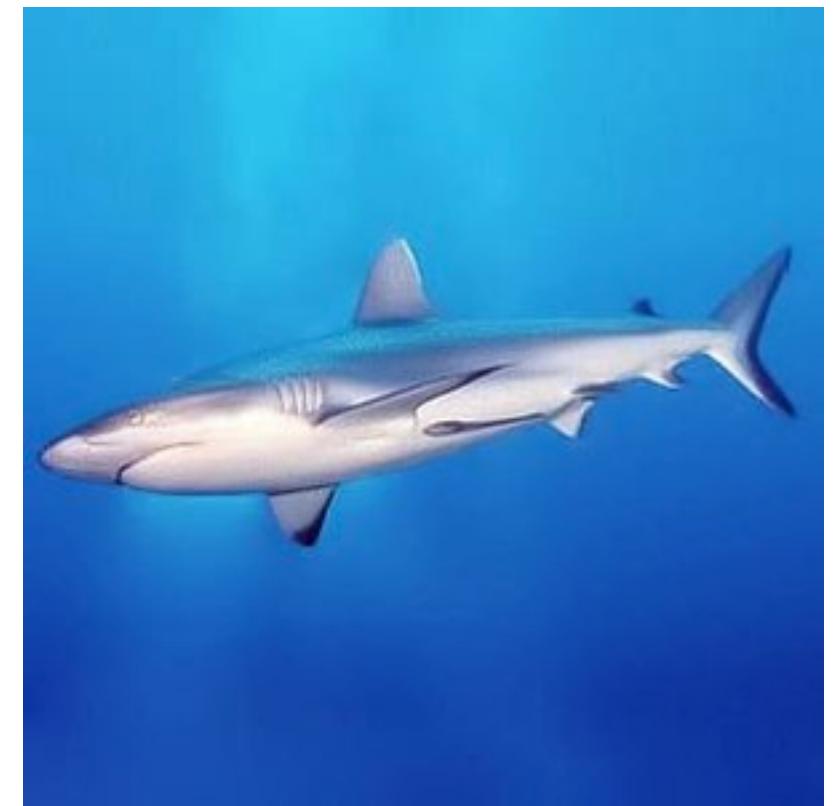
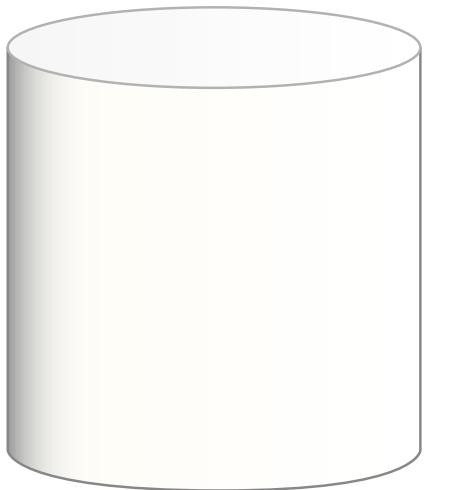
Background matching experiment



Try it yourself!!!



Countershading



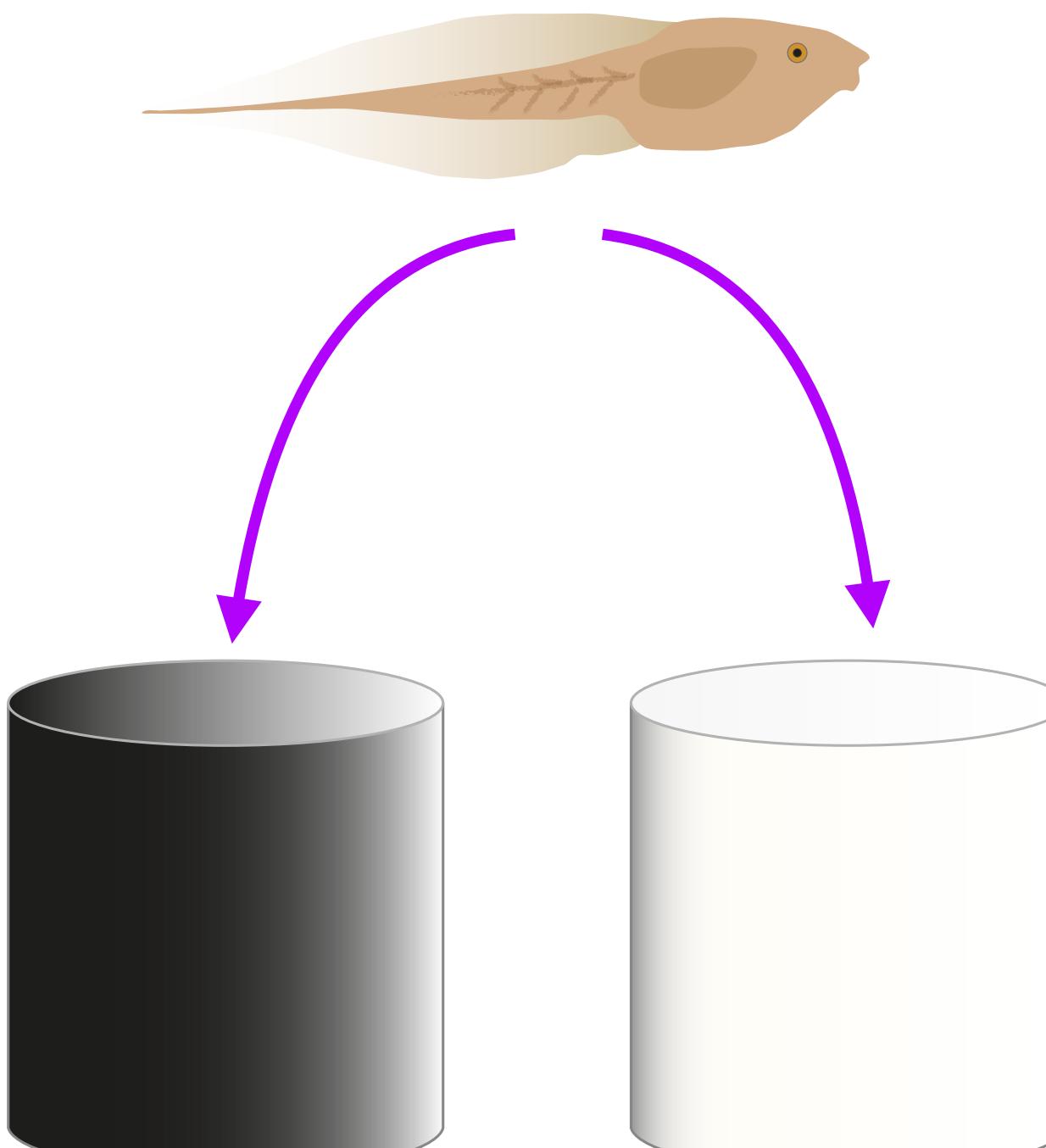
Molecular Mechanisms



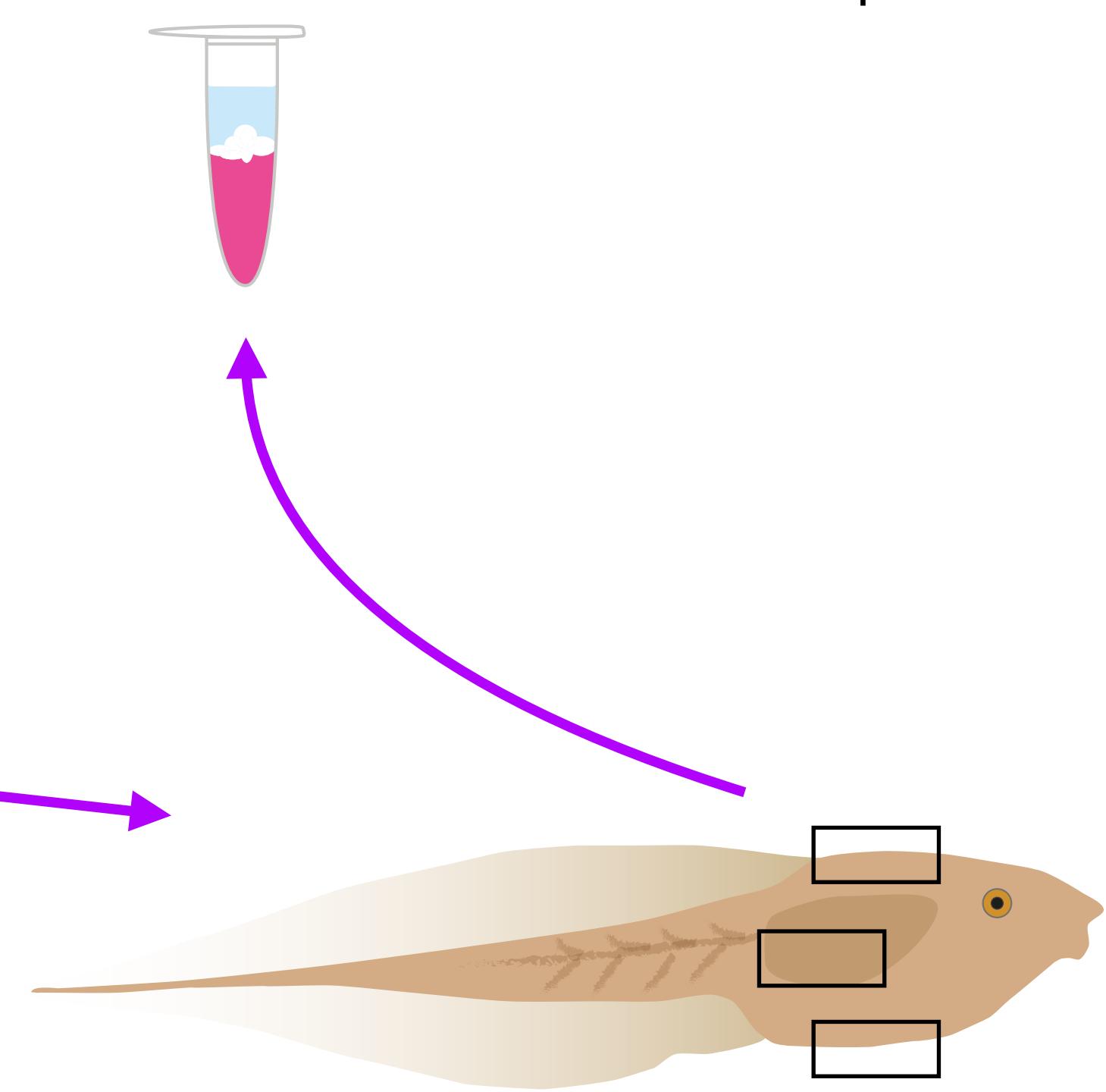
- a. What genes are switched on/off in response to background colour?
- b. What genes regulate countershading patterning?



RNAseq experiment



X4
40-day exposure



RNAseq experiment

- 2 environmental treatments
 - 3 tissues (2 regions of skin + liver sample)
 - 4 biological replicates
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- BGI short-read RNA seq (100bp paired end)