

# Dark Waters Make Dark Tadpoles

Pigmentation plasticity in  
Spadefoot toad tadpoles



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# Crypsis through Background matching

Selection on phenotypes

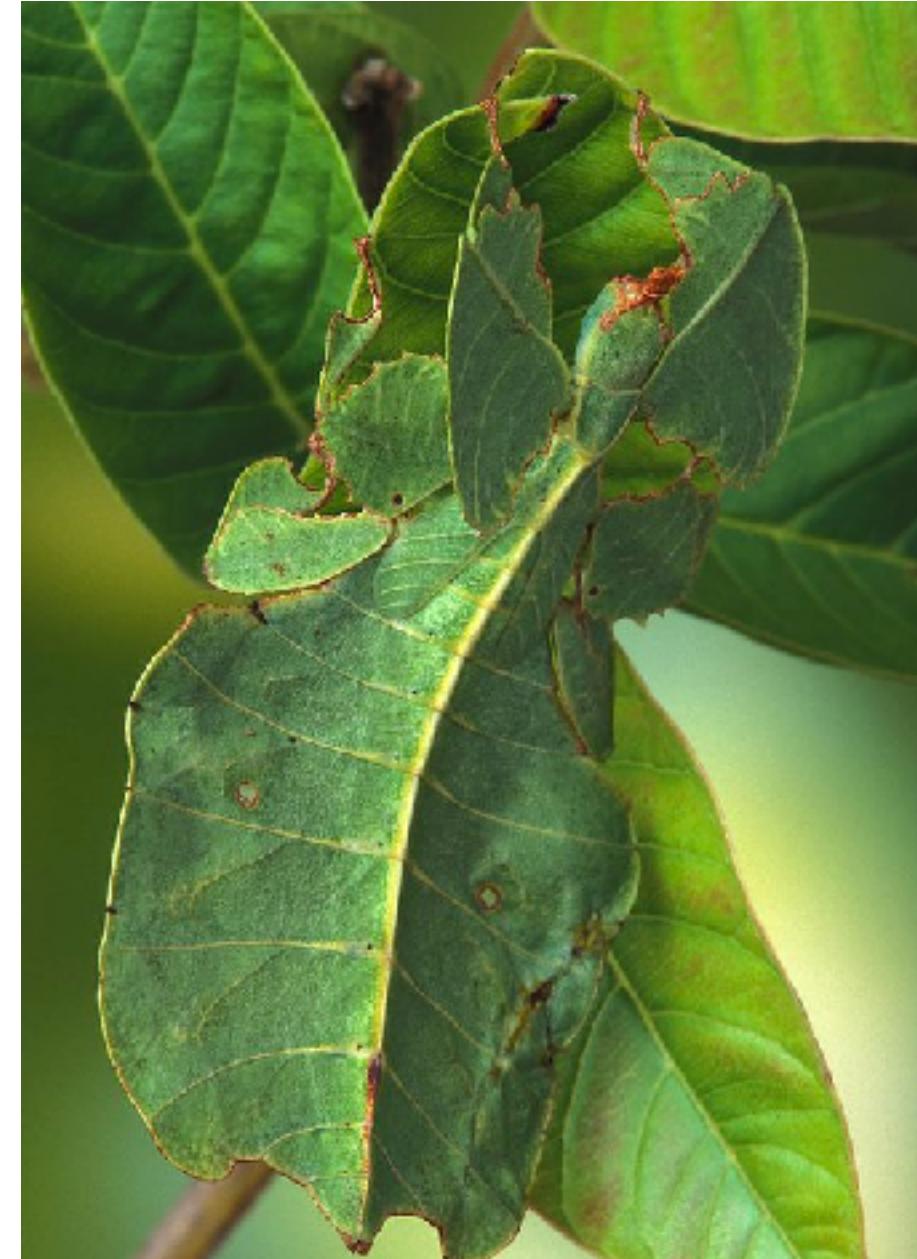


Photo credits: Doug Waylett, Michael Kidwell, Robert Jensen, Anna Veselova, Kris Wiktor, Mircea C, Davem Hunt

# Crypsis through Background matching

Pigmentation plasticity



# Crypsis through Background matching

Pigmentation plasticity



# Pigmentation plasticity in amphibians



Non-breeding male



Breeding male



Night



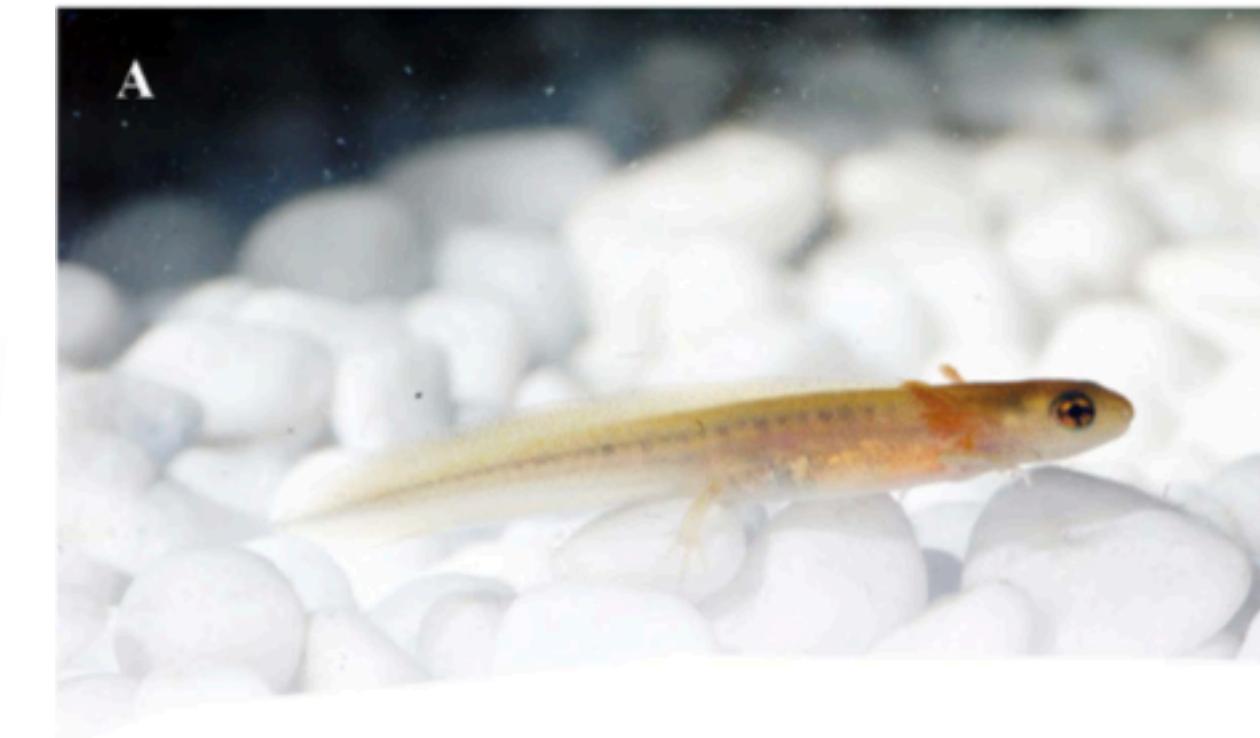
Day



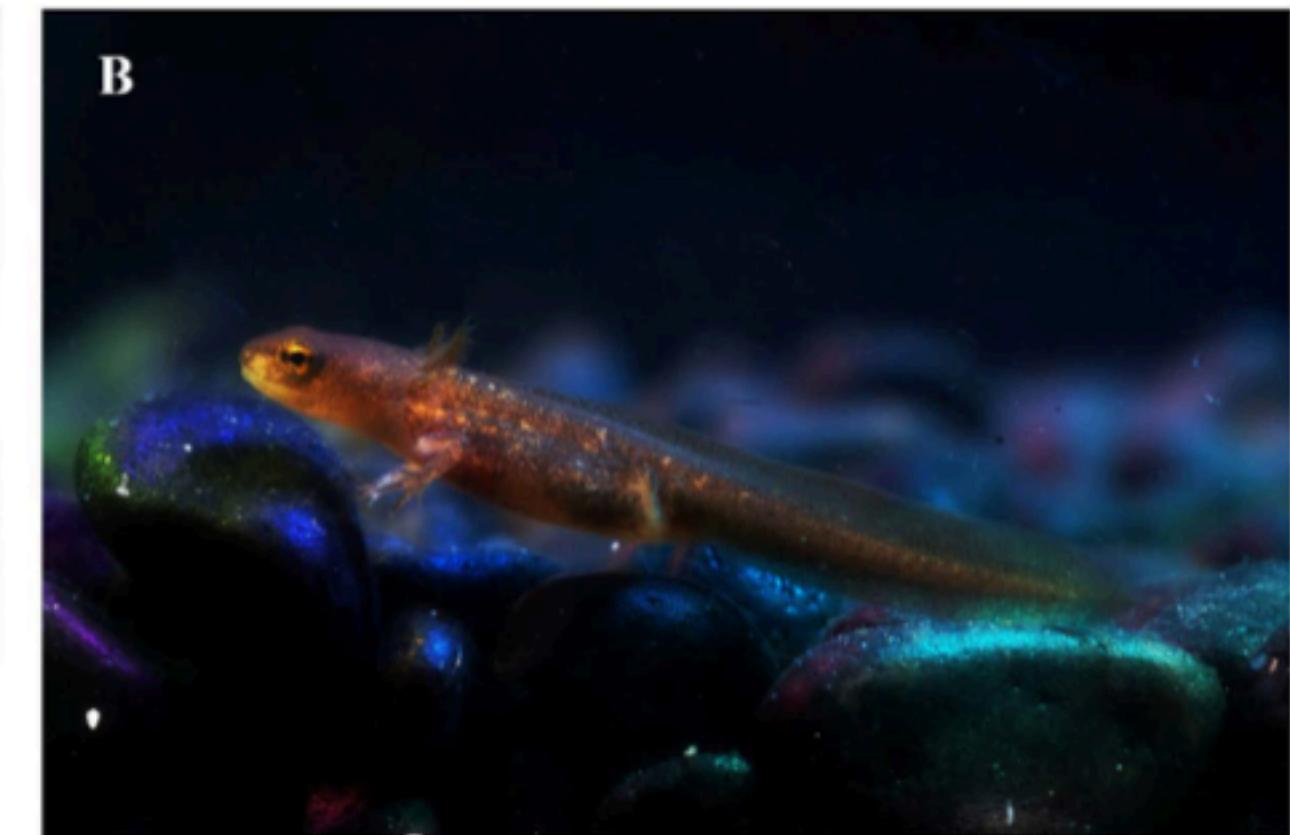
No predators



Predators



Light background



Dark background

# Pigmentation plasticity in amphibians



Non-breeding male



Breeding male



No predators



Predators



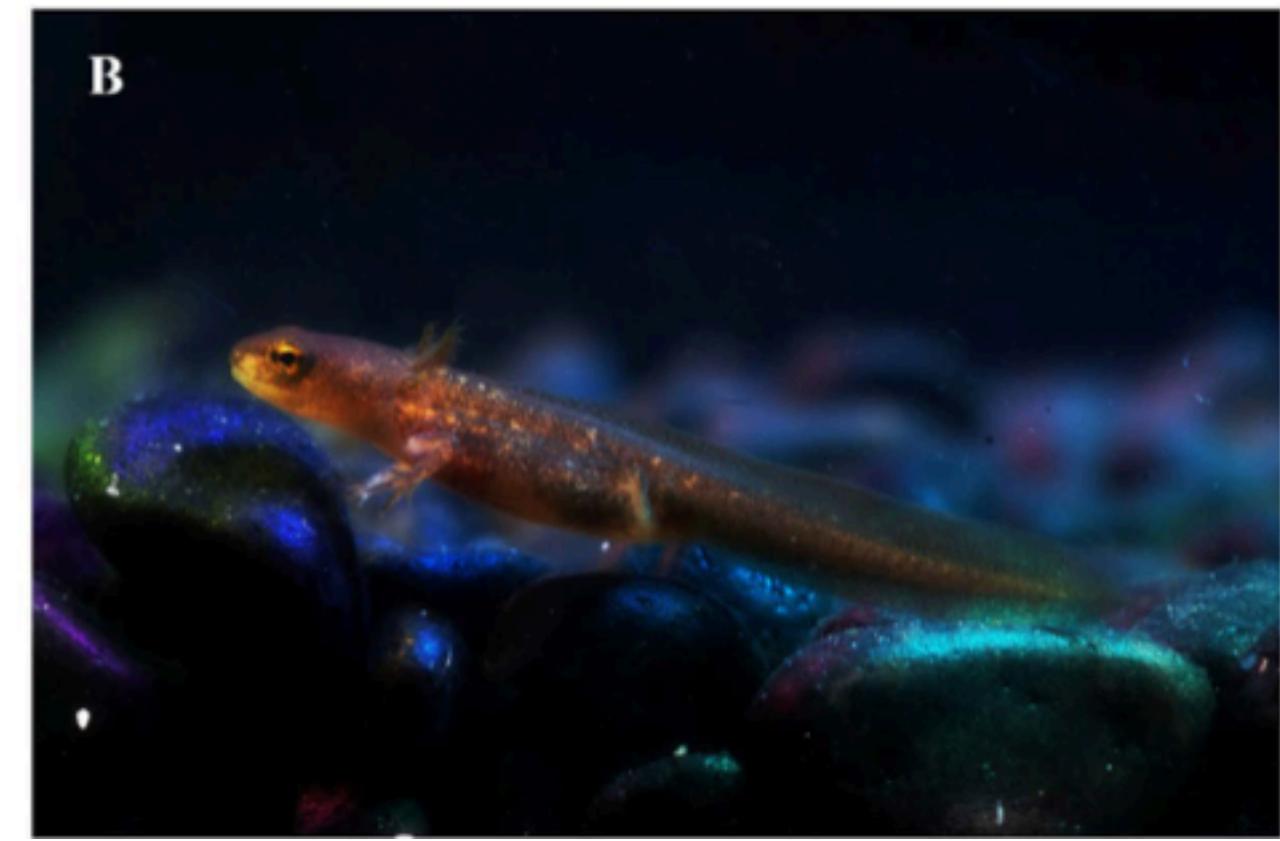
Night



Day



Light background



Dark background

# Background matching in Spadefoot toad tadpoles



Western Spadefoot toad  
*Pelobates cultripes*



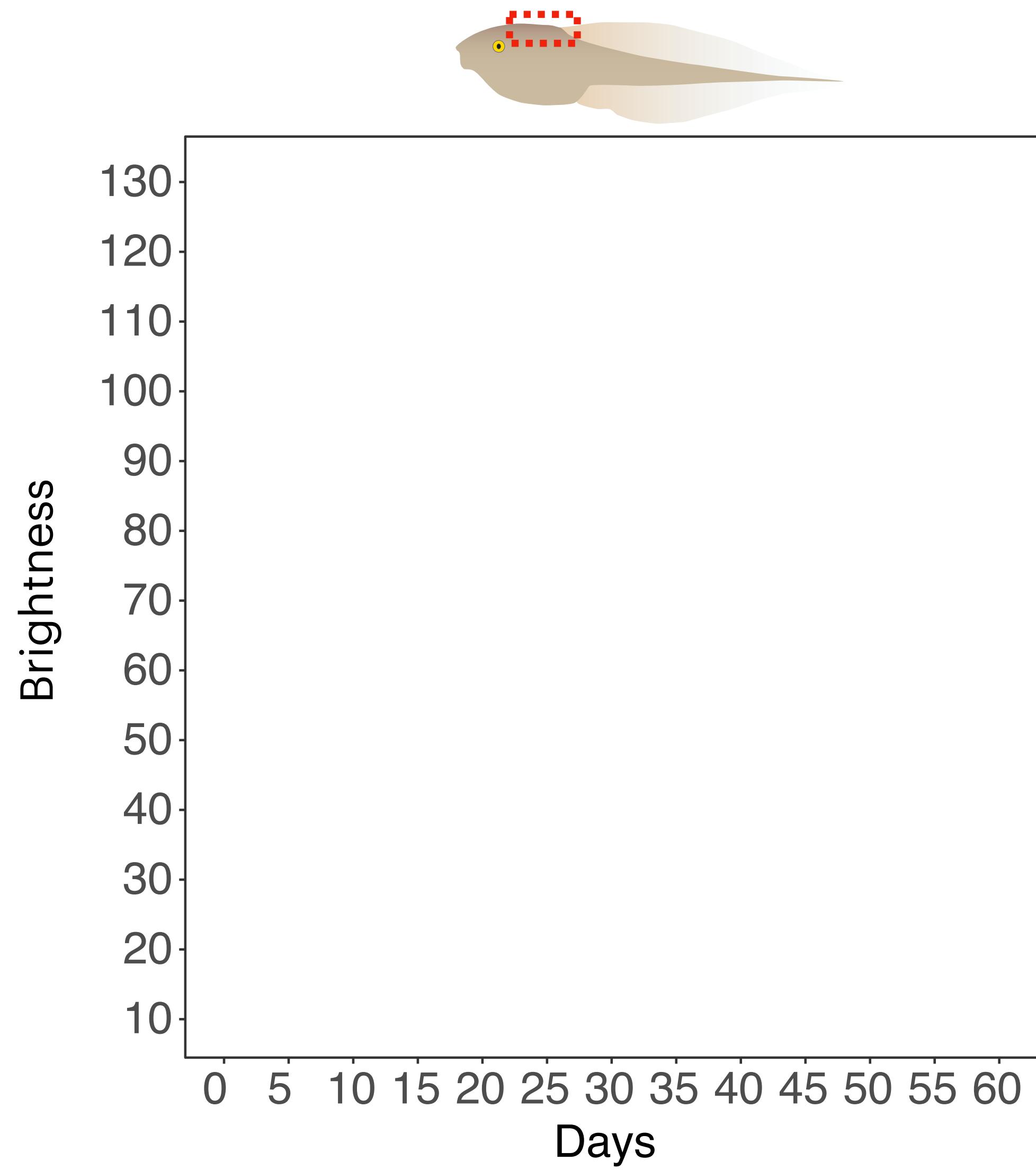
# Background matching in Spadefoot toad tadpoles



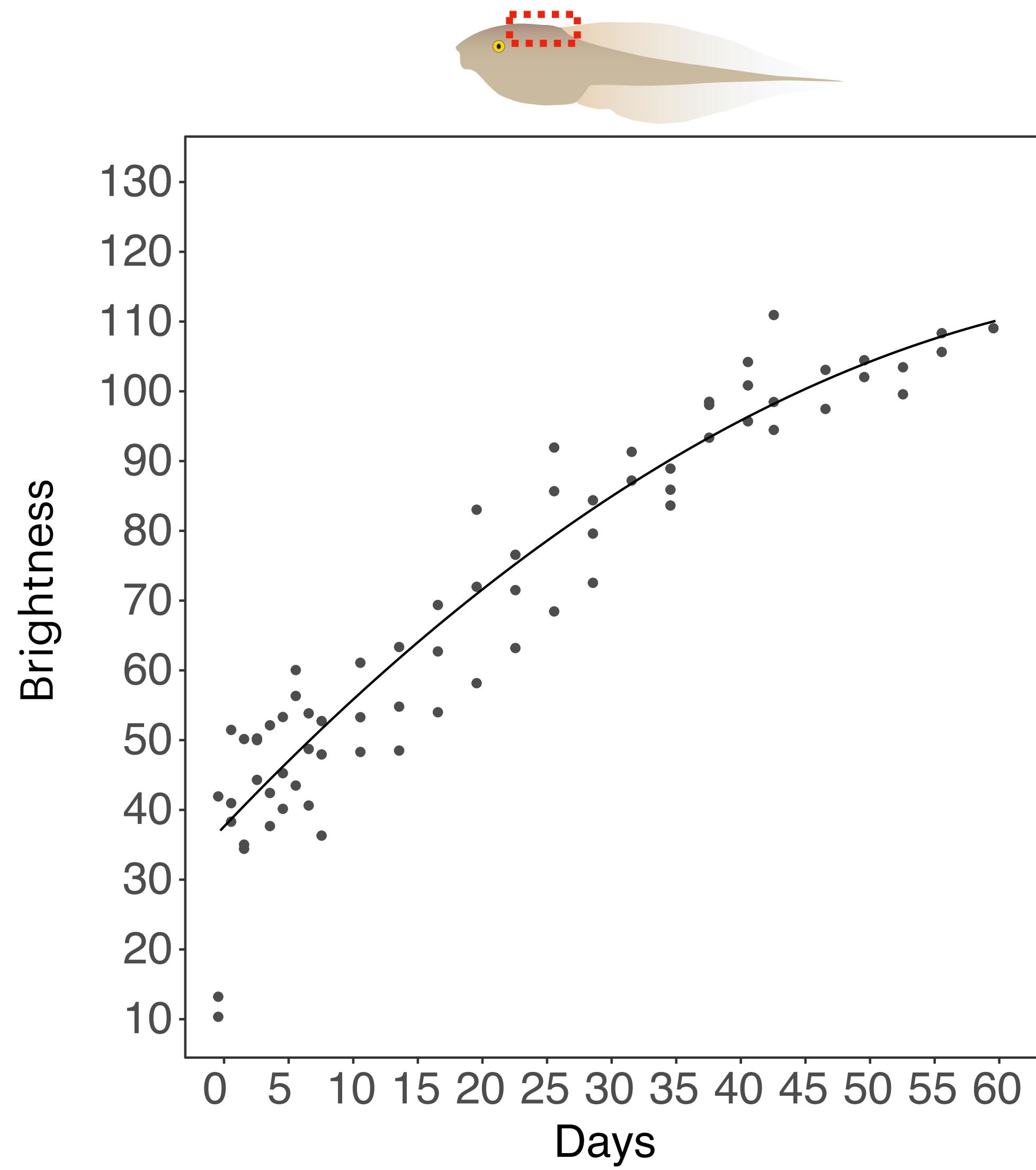
Western Spadefoot toad  
*Pelobates cultripes*



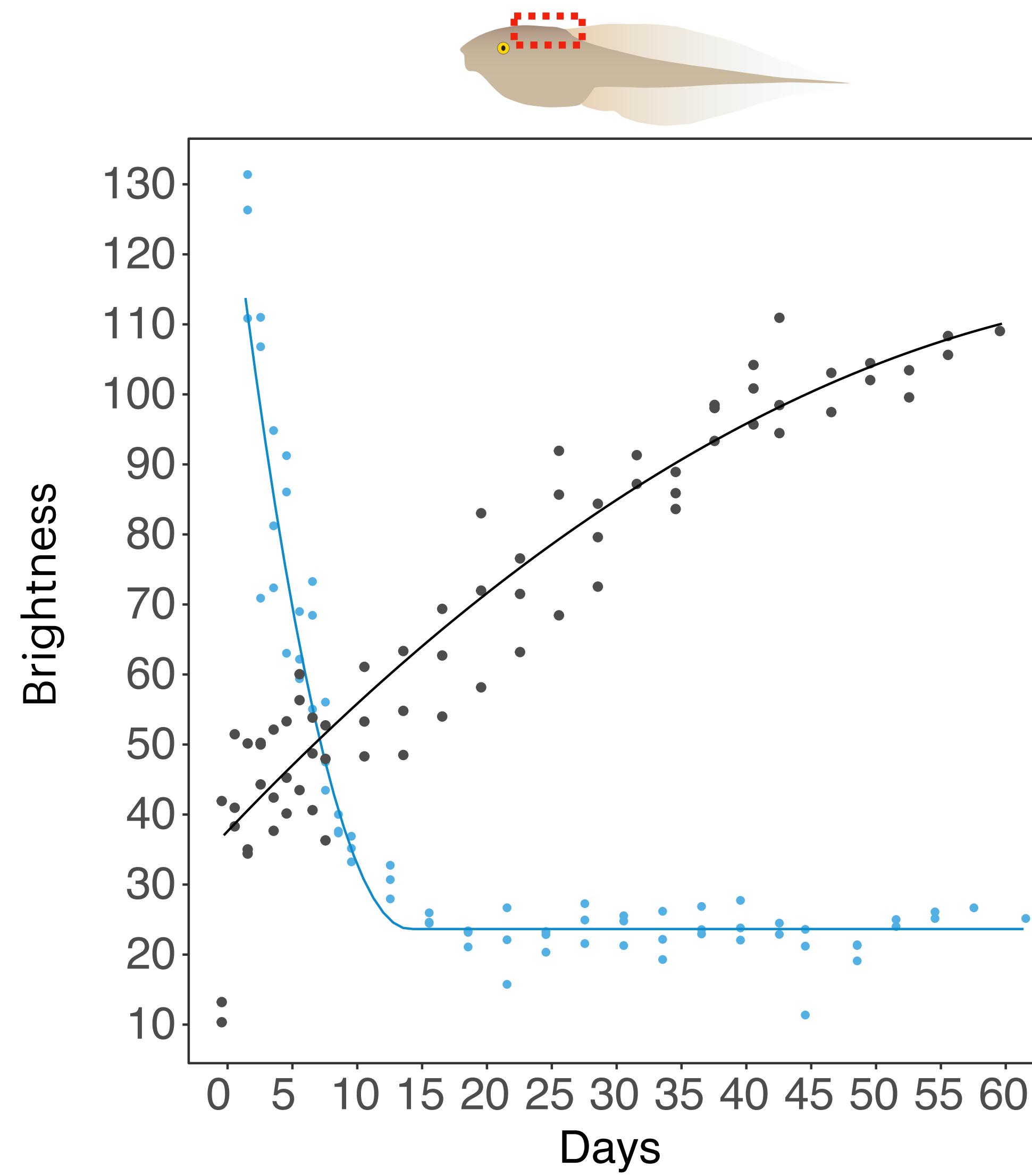
# Speed and Reversibility



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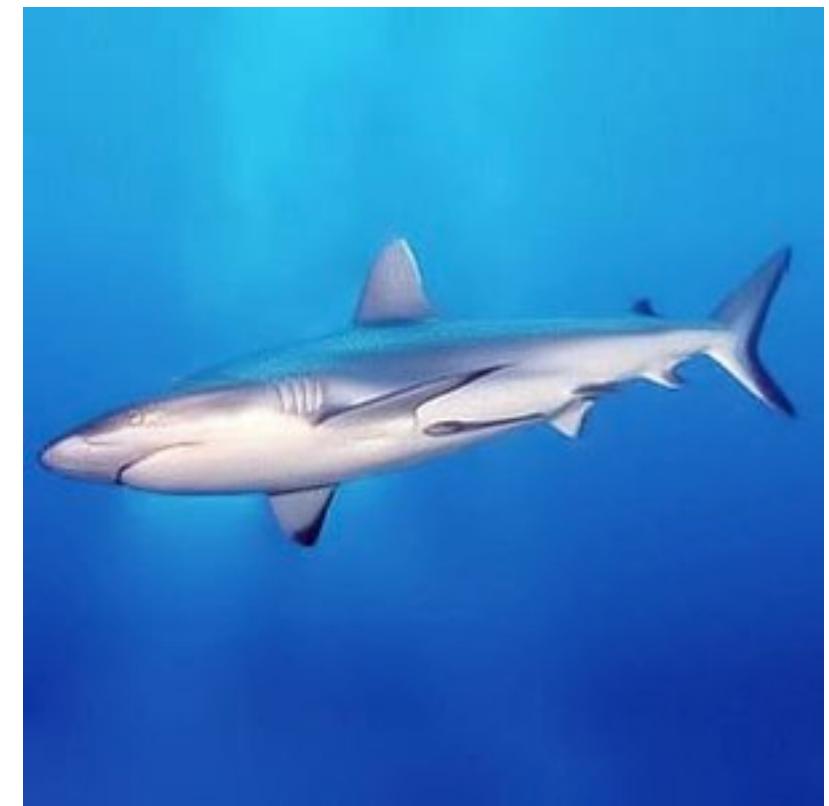
# Speed and Reversibility



# Countershading



# Countershading



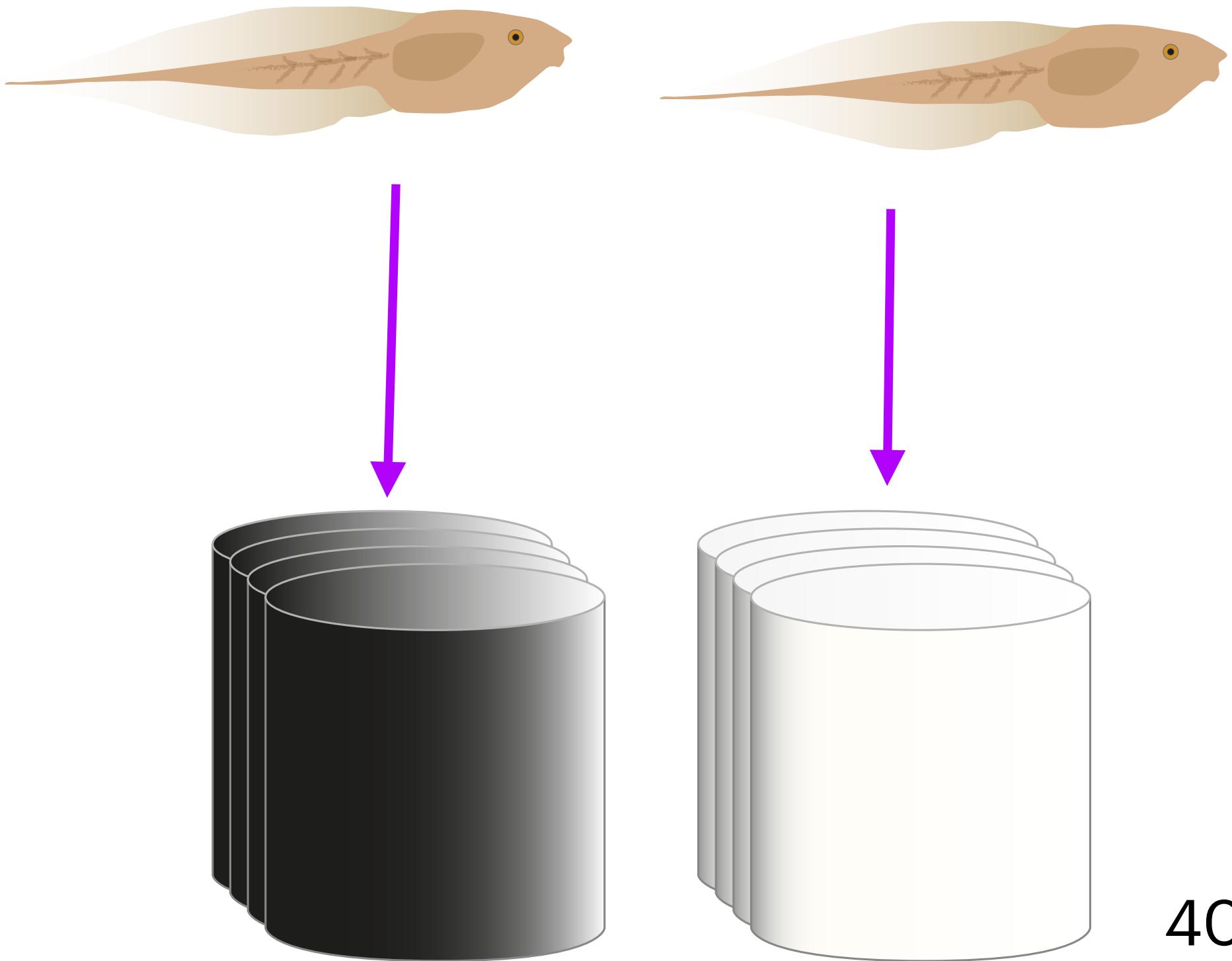
# Molecular Mechanisms



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



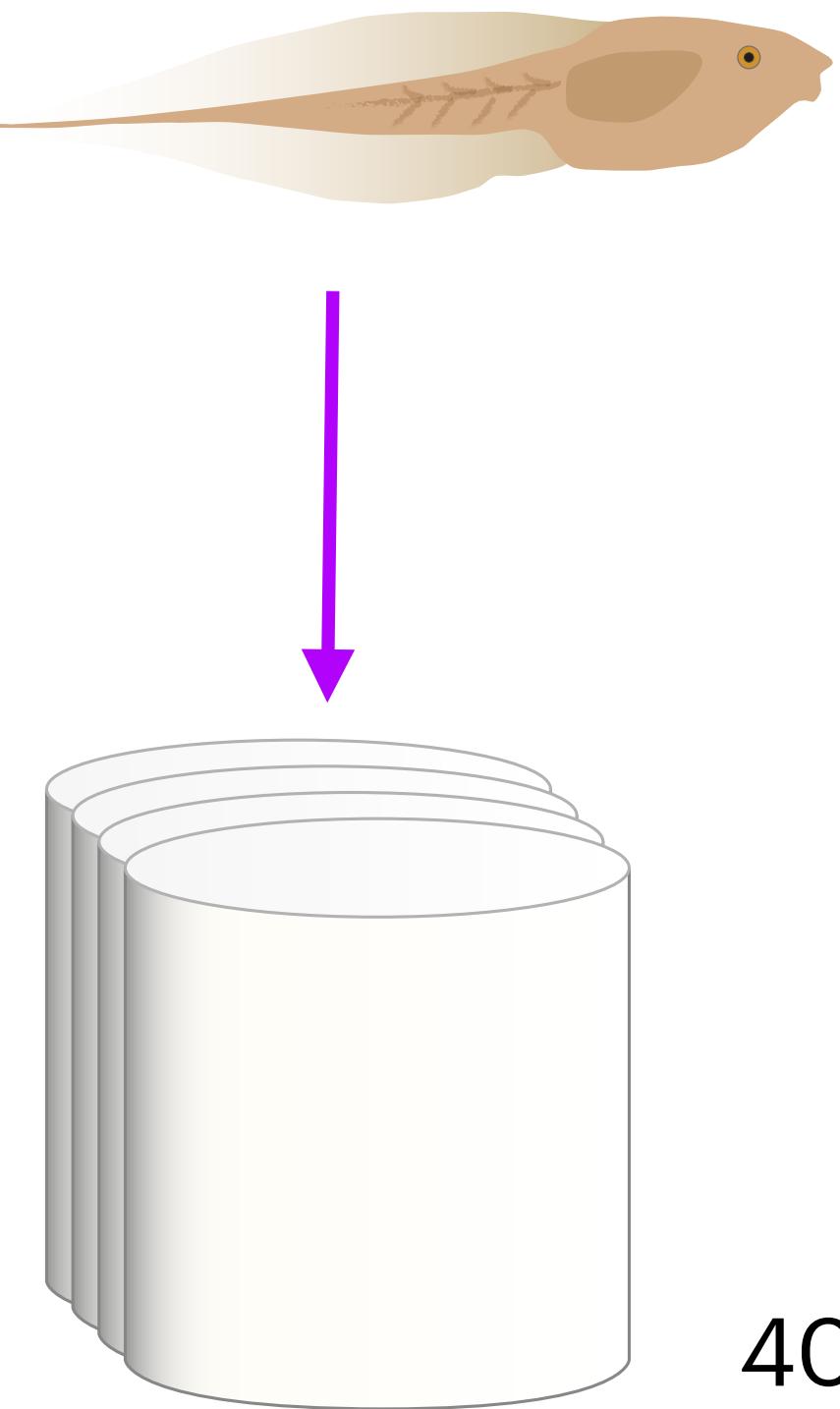
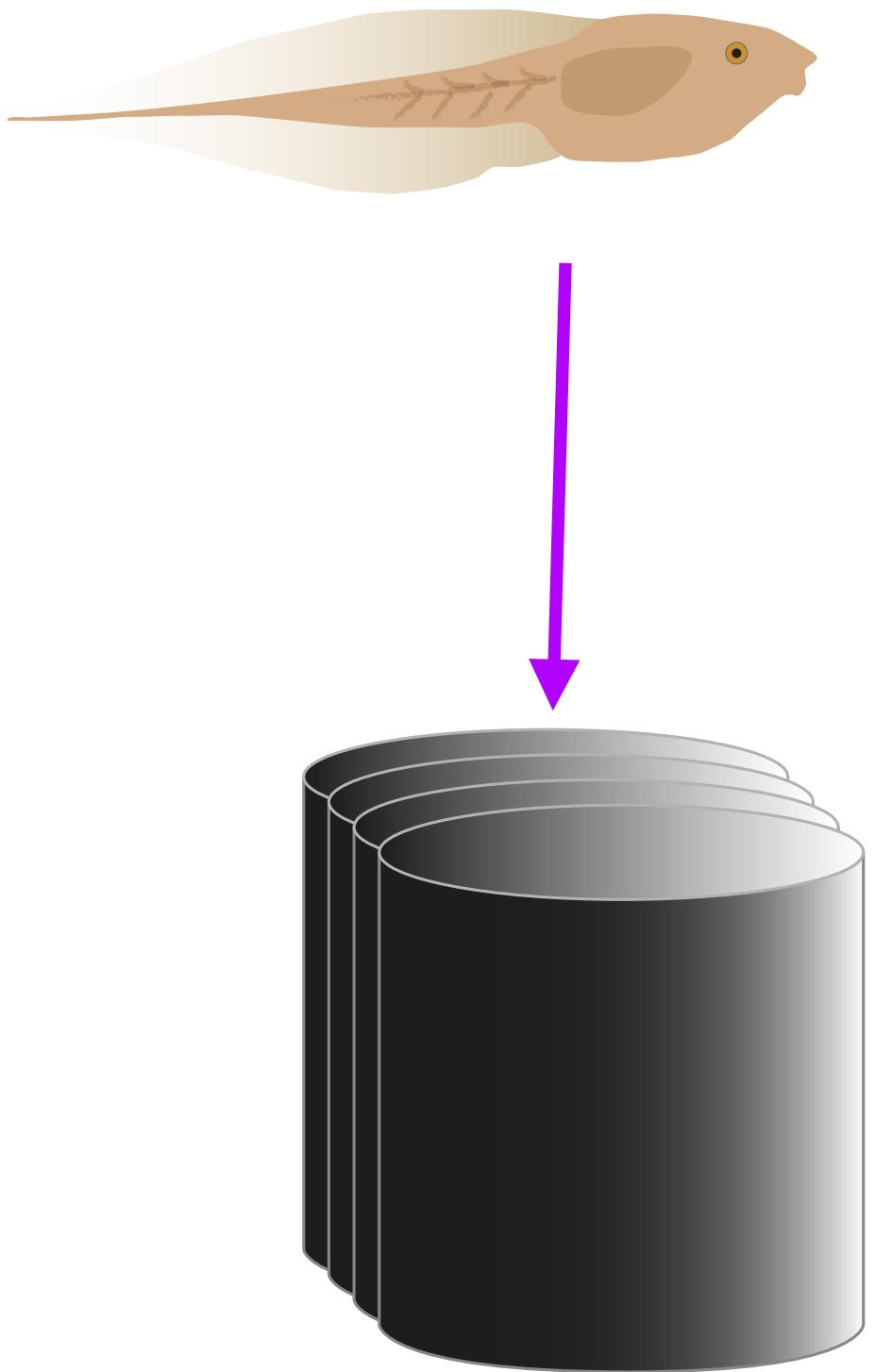
# RNAseq experiment



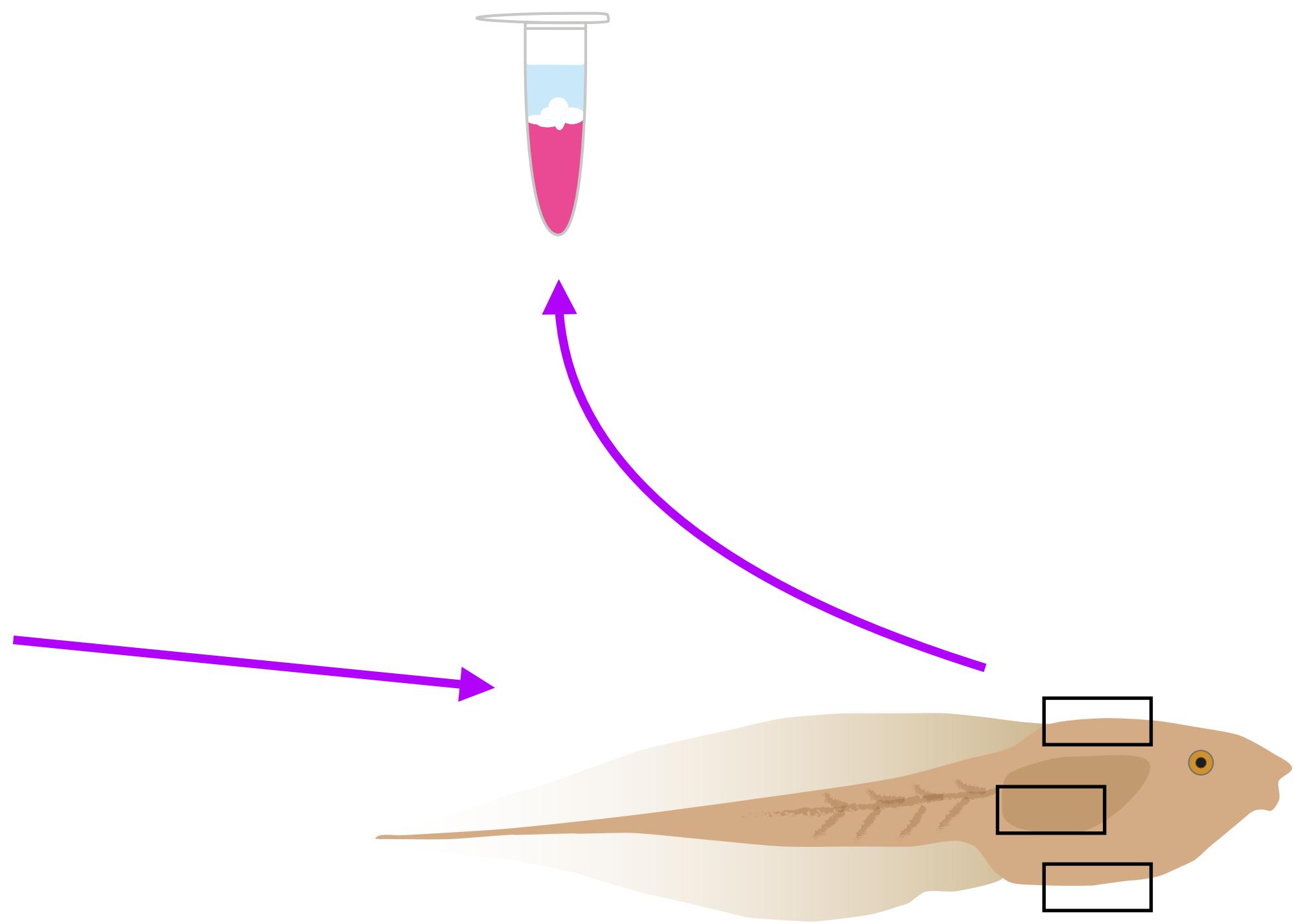
X4

40-day exposure

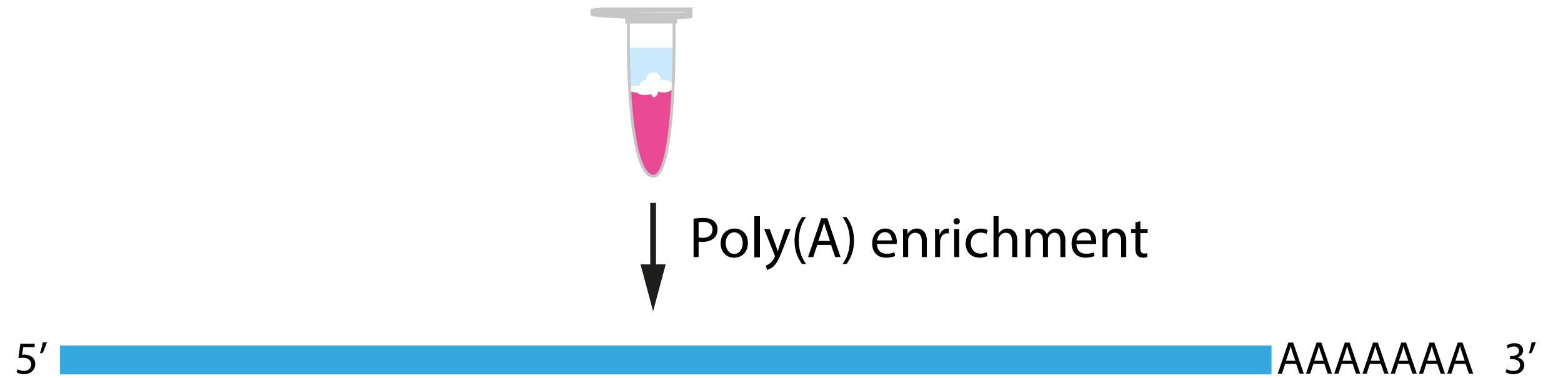
# RNAseq experiment



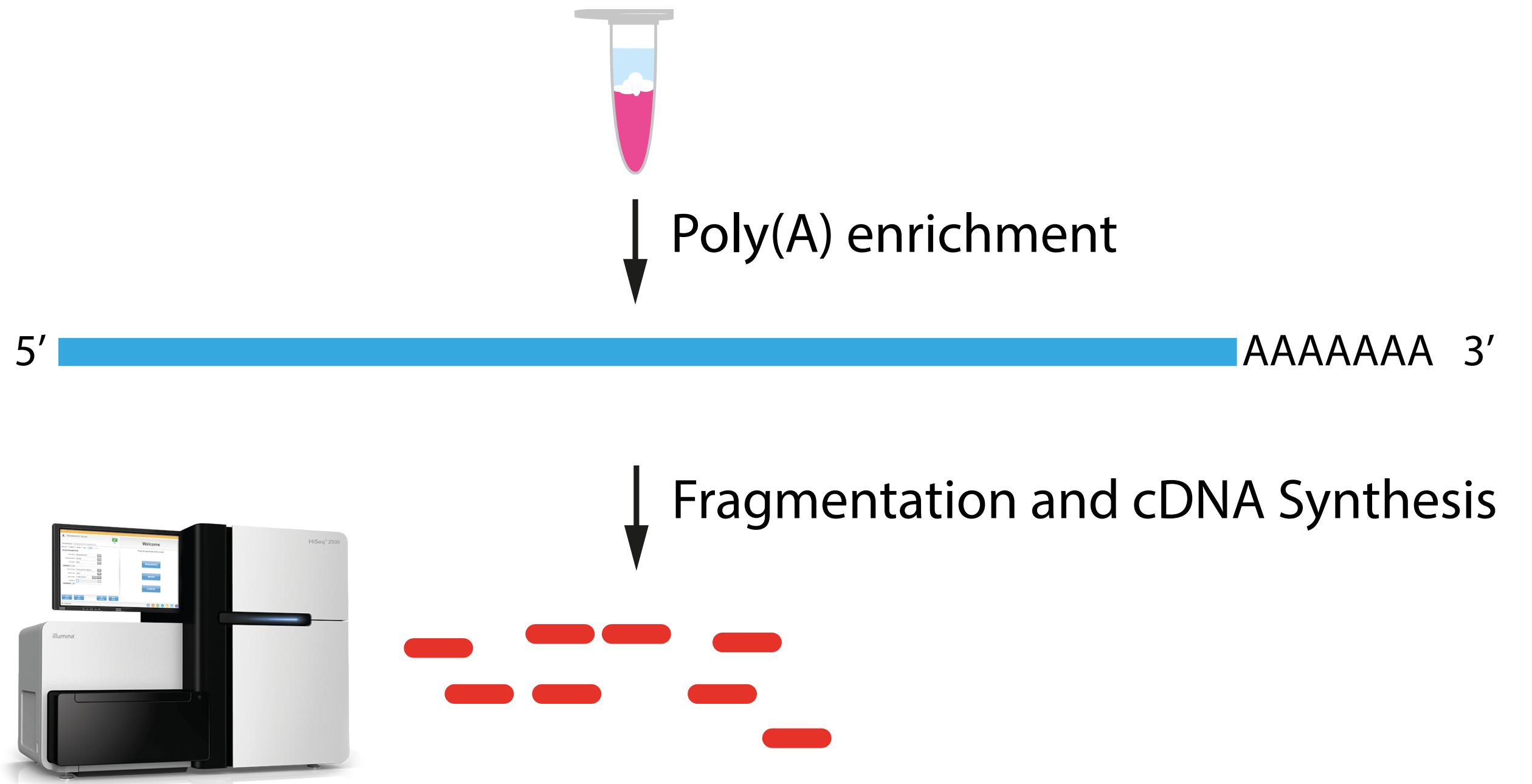
X4  
40-day exposure



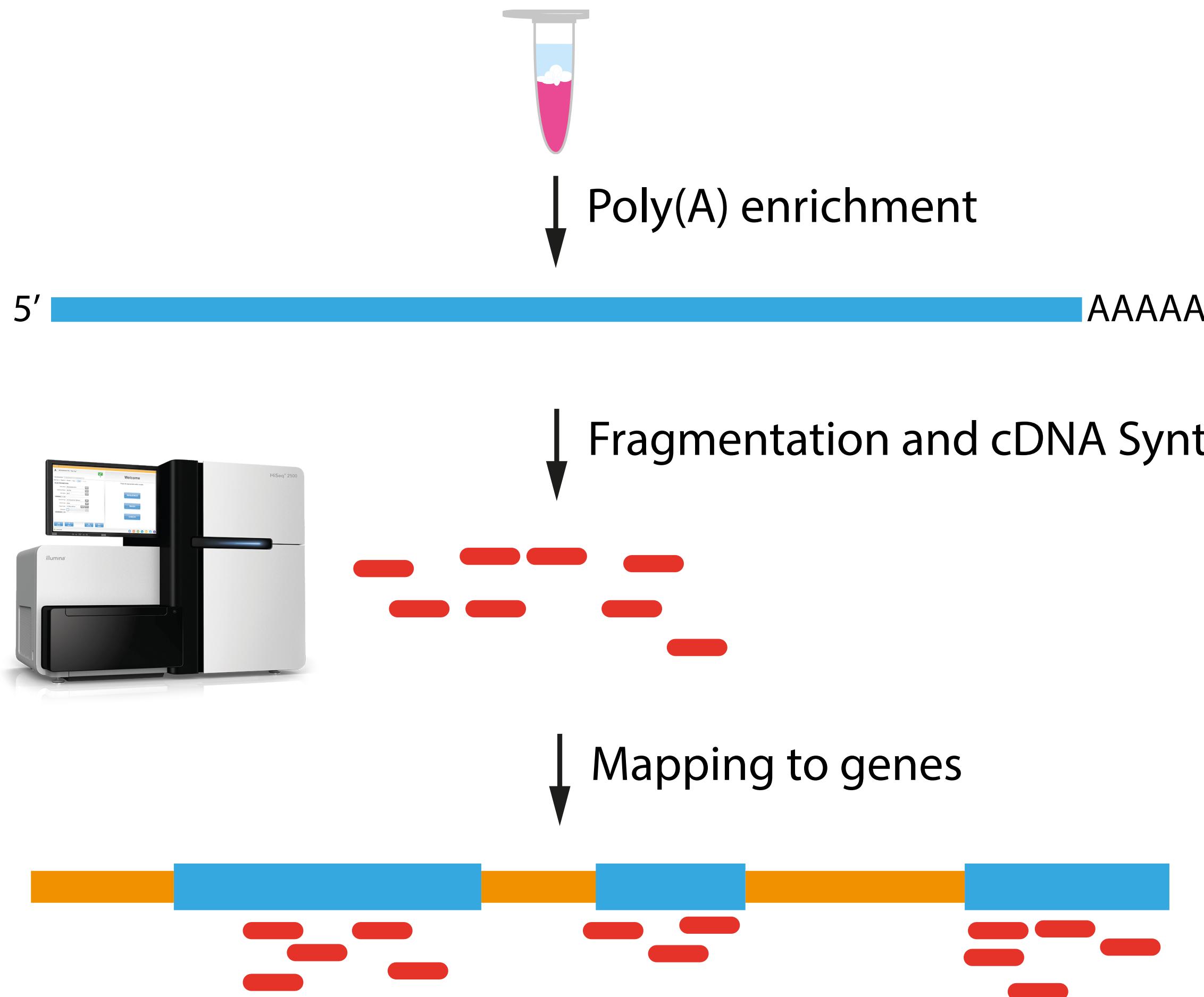
# Differential Gene Expression



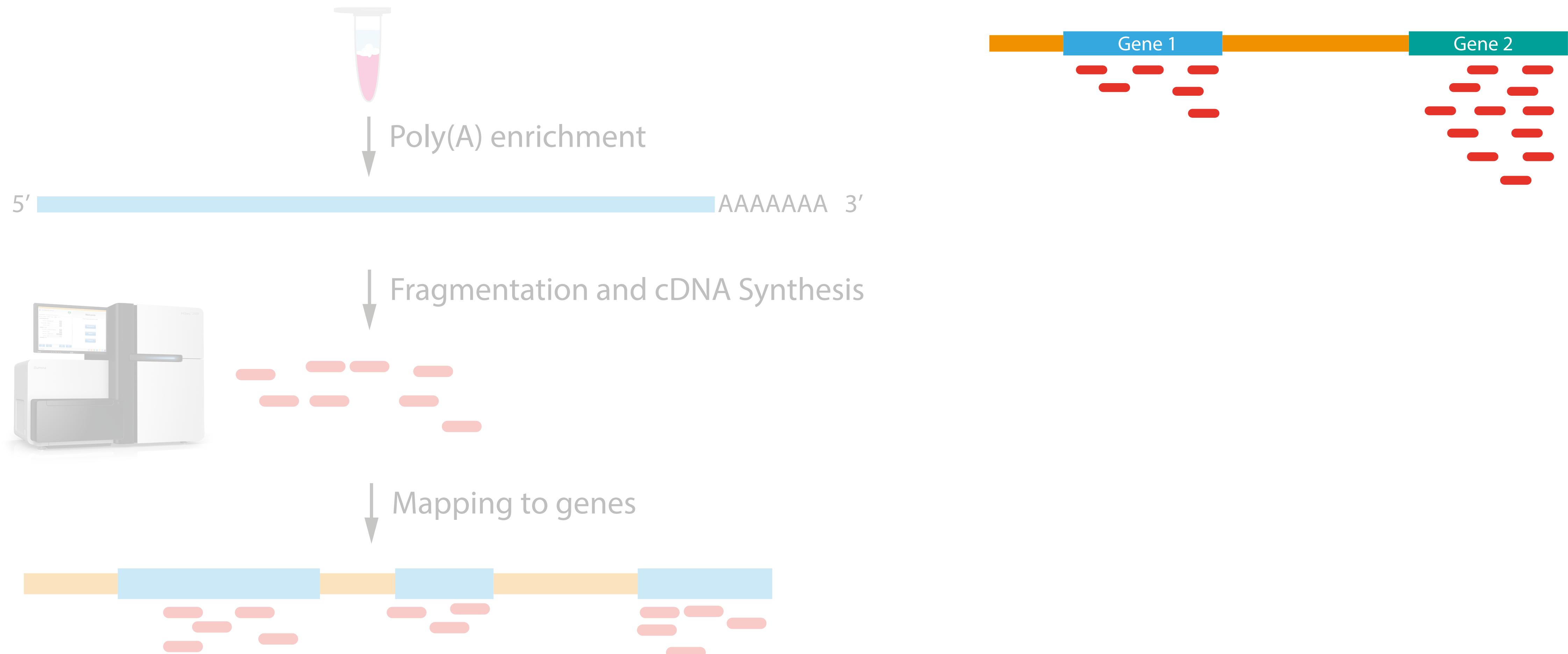
# Differential Gene Expression



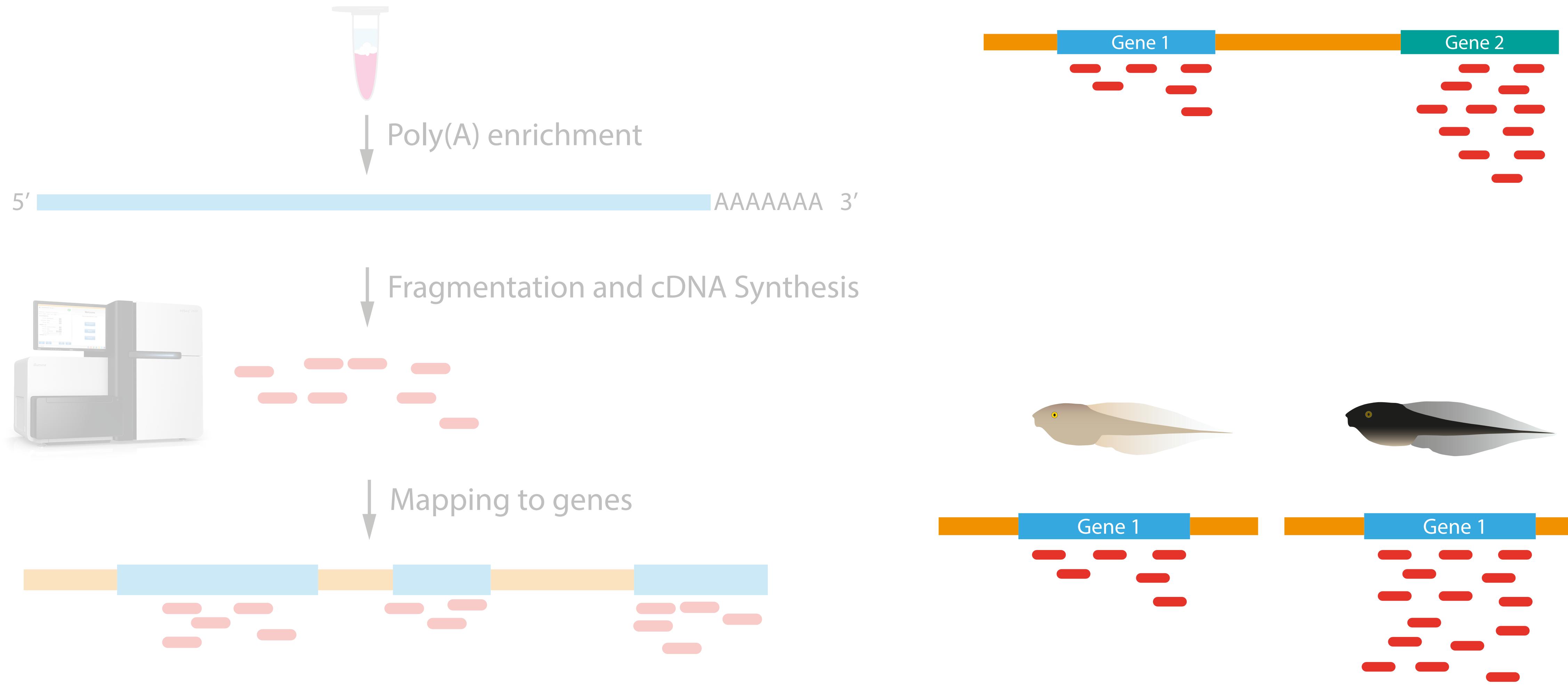
# Differential Gene Expression



# Differential Gene Expression



# Differential Gene Expression



# Differential Gene Expression

