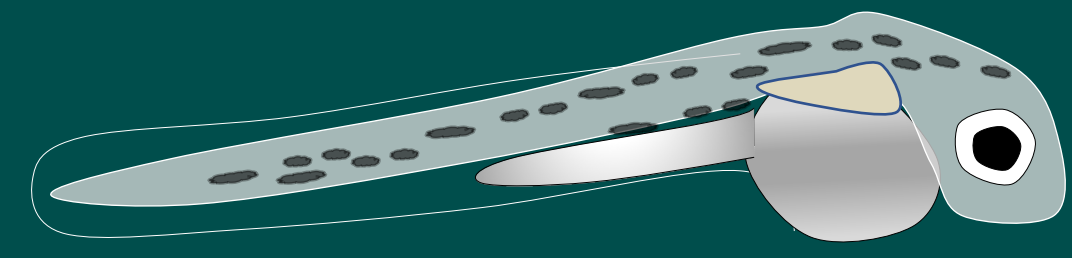


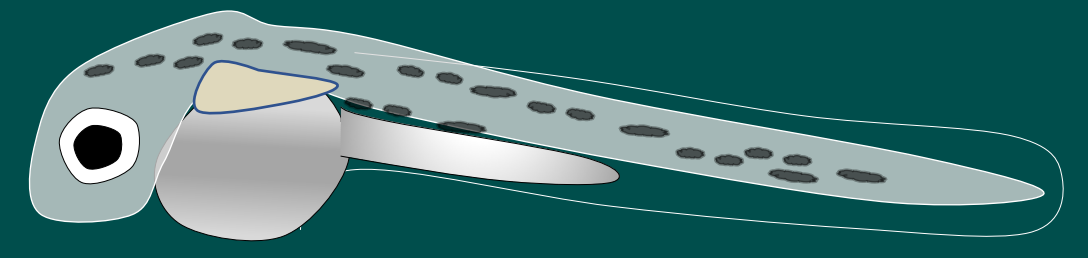
# Analysis of epigenetic gene regulation using a novel zebrafish epigenetic reporter line

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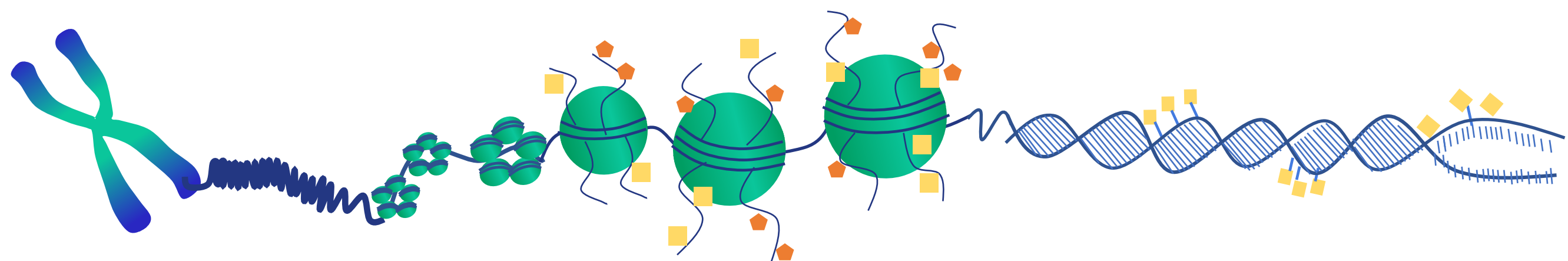
<sup>1</sup>Department of Developmental Biology, NICHD, NIH, Bethesda, MD



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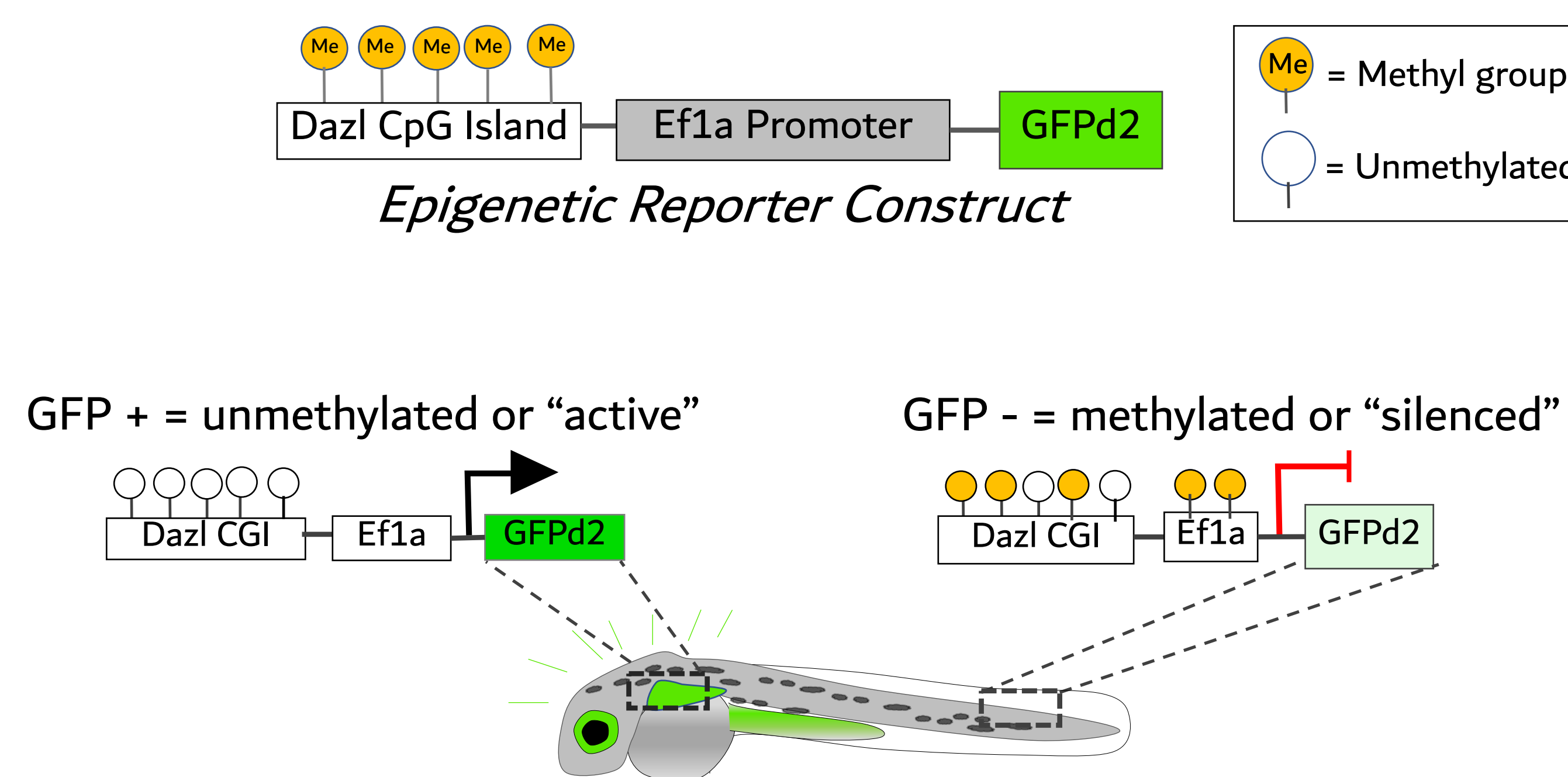


## Background

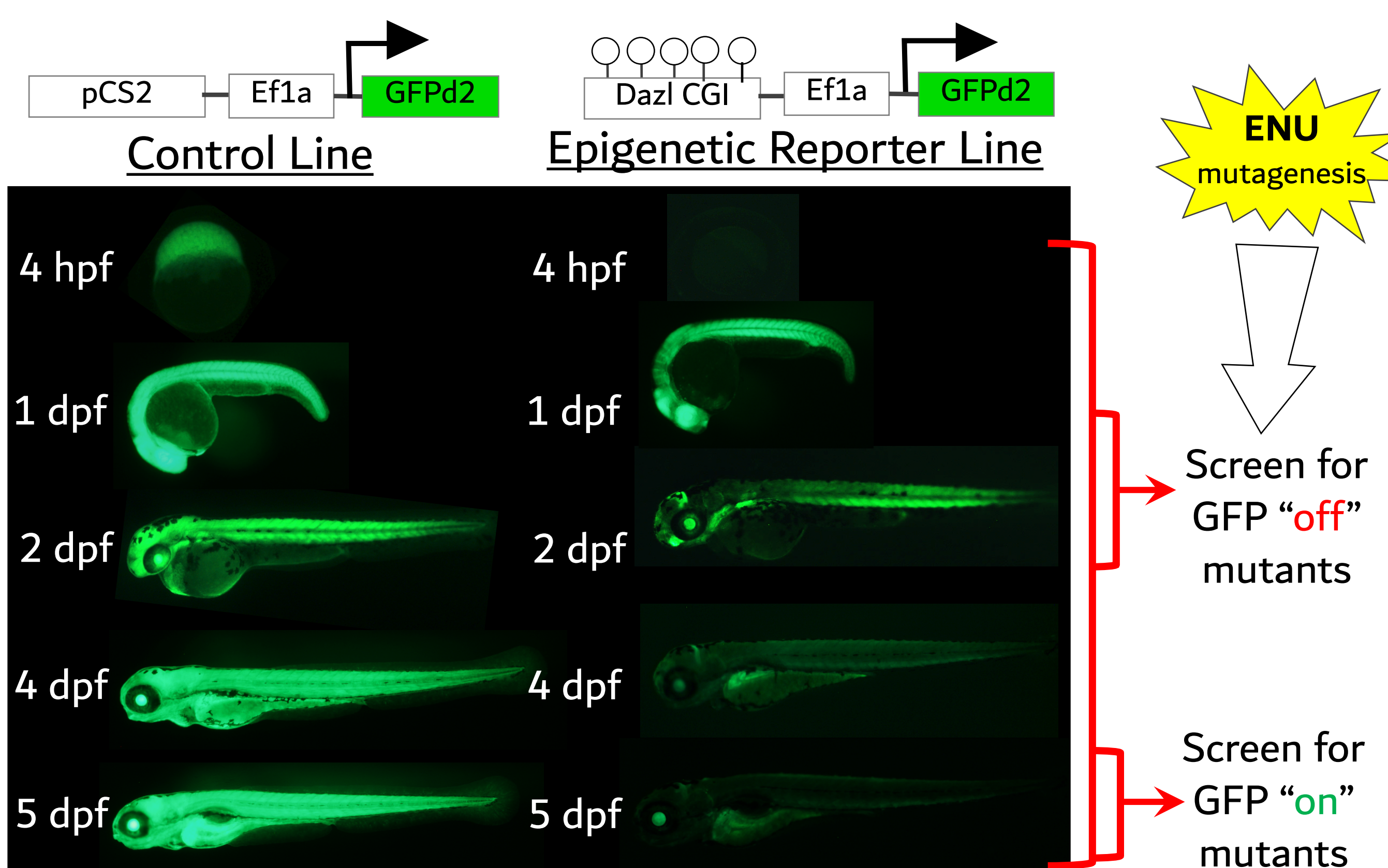


- Many vertebrate epigenetic modifiers, although critical regulators of embryonic development, are still unknown
- We recently generated an epigenetic reporter tg zebrafish line, which we are using to identify epigenetic mutants
- One mutant exhibits abnormal head morphology and epigenetic silencing, which we are now characterizing

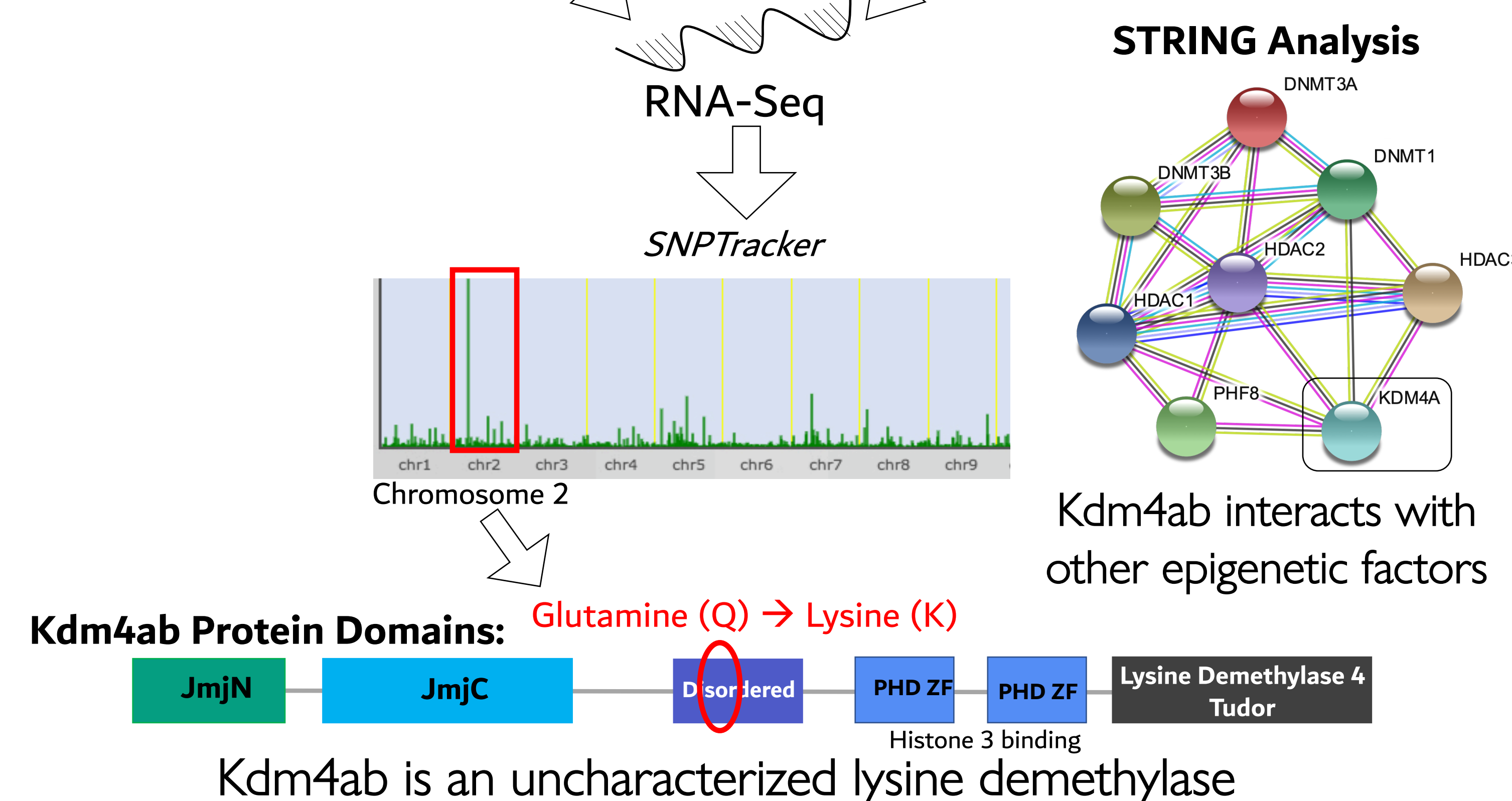
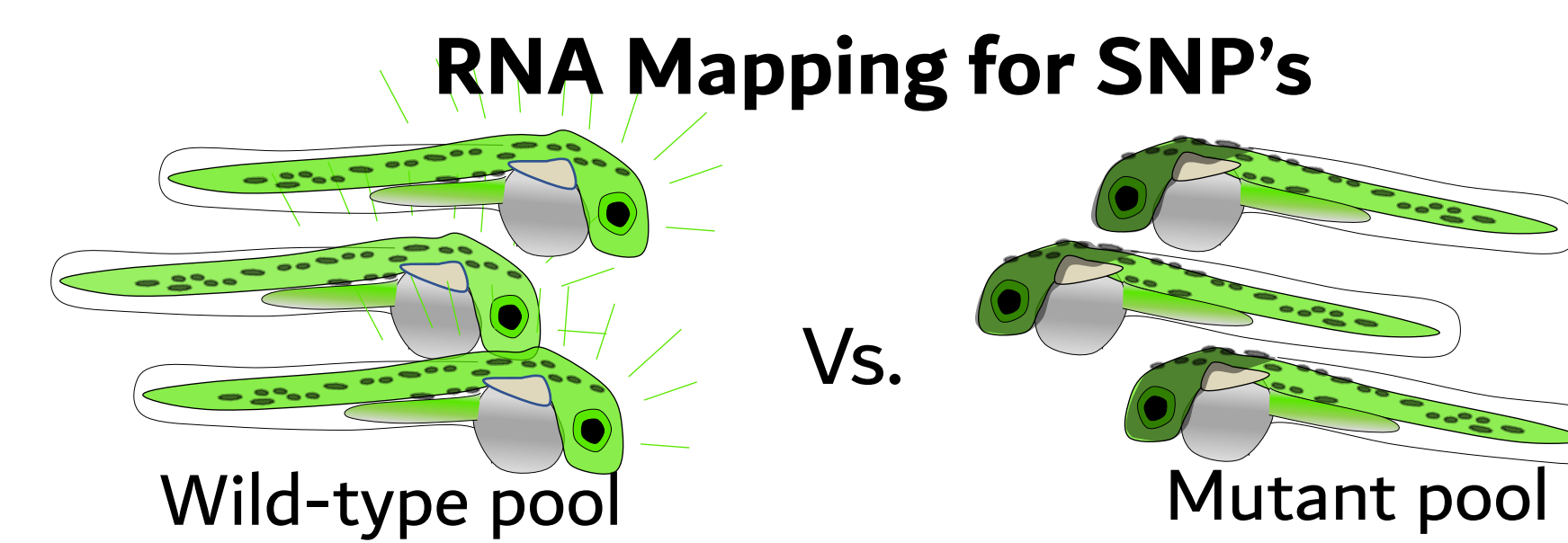
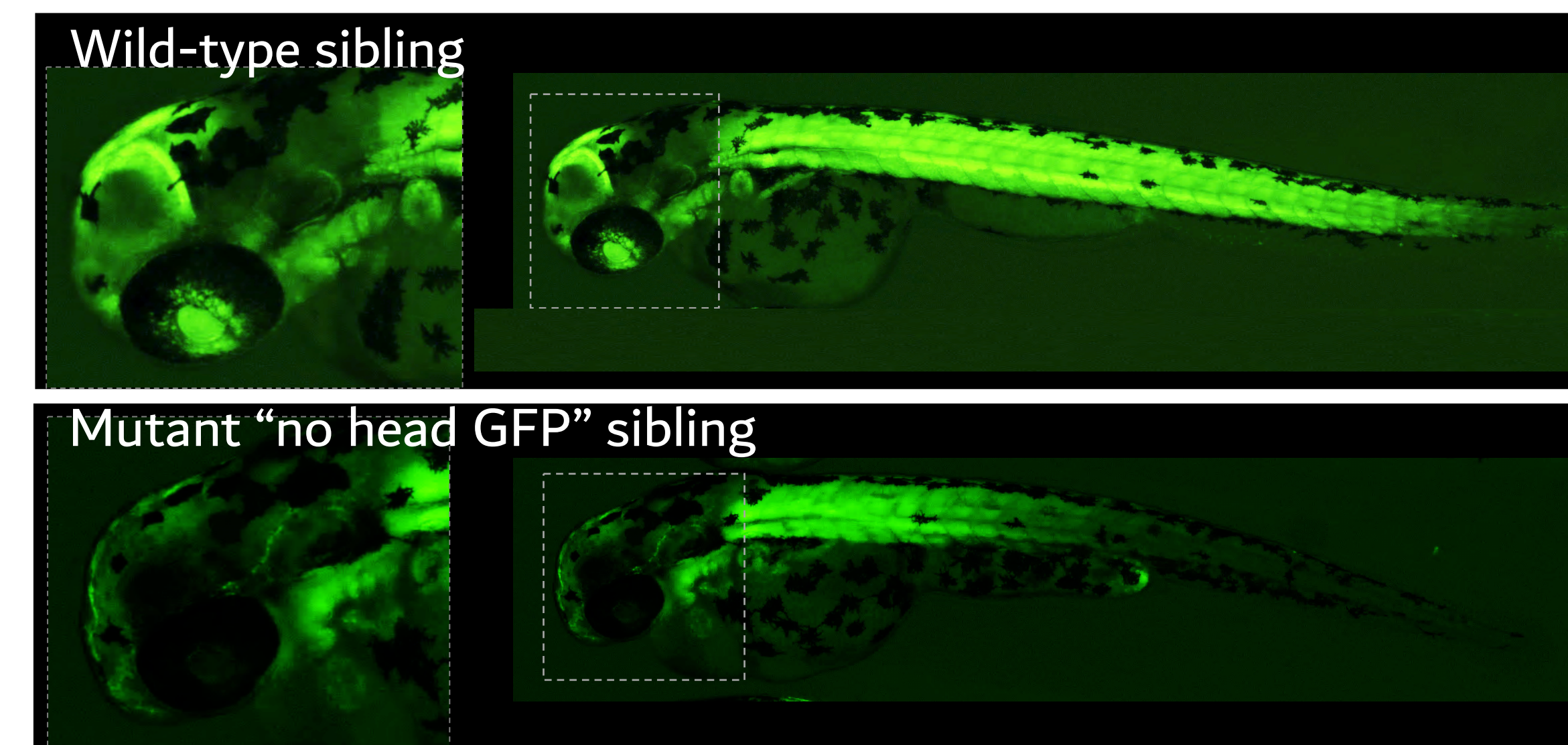
## Generation of an epigenetic reporter line



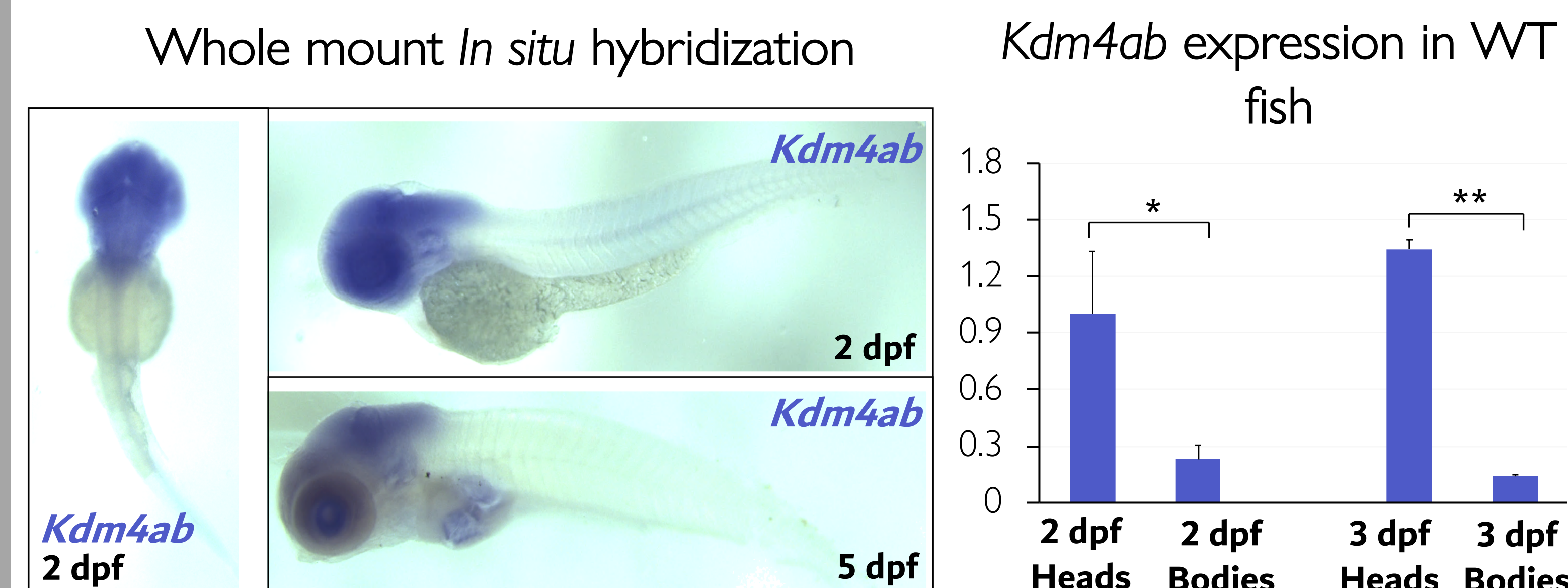
## Screening for epigenetic mutants



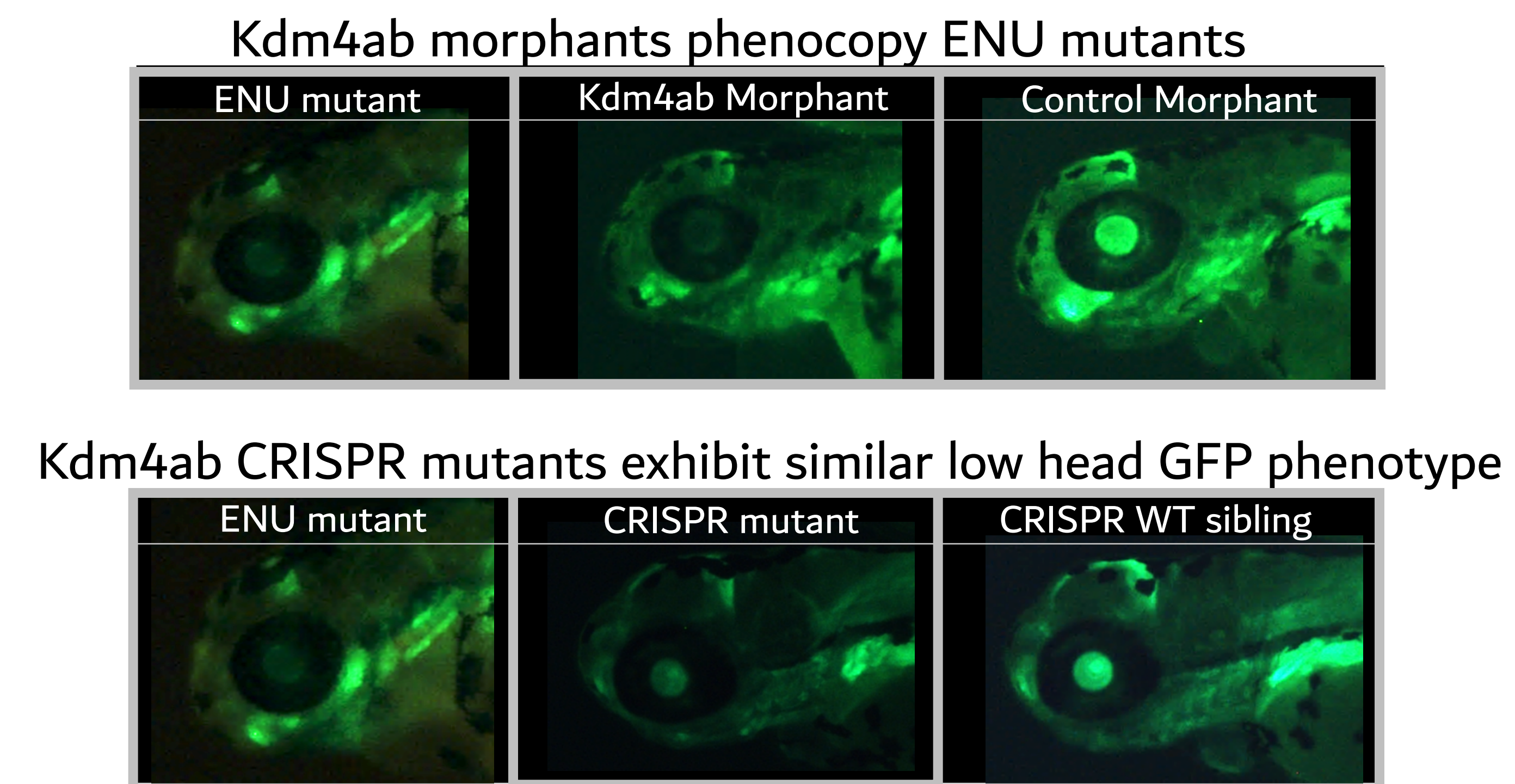
## Mapping a "No head GFP" Mutant



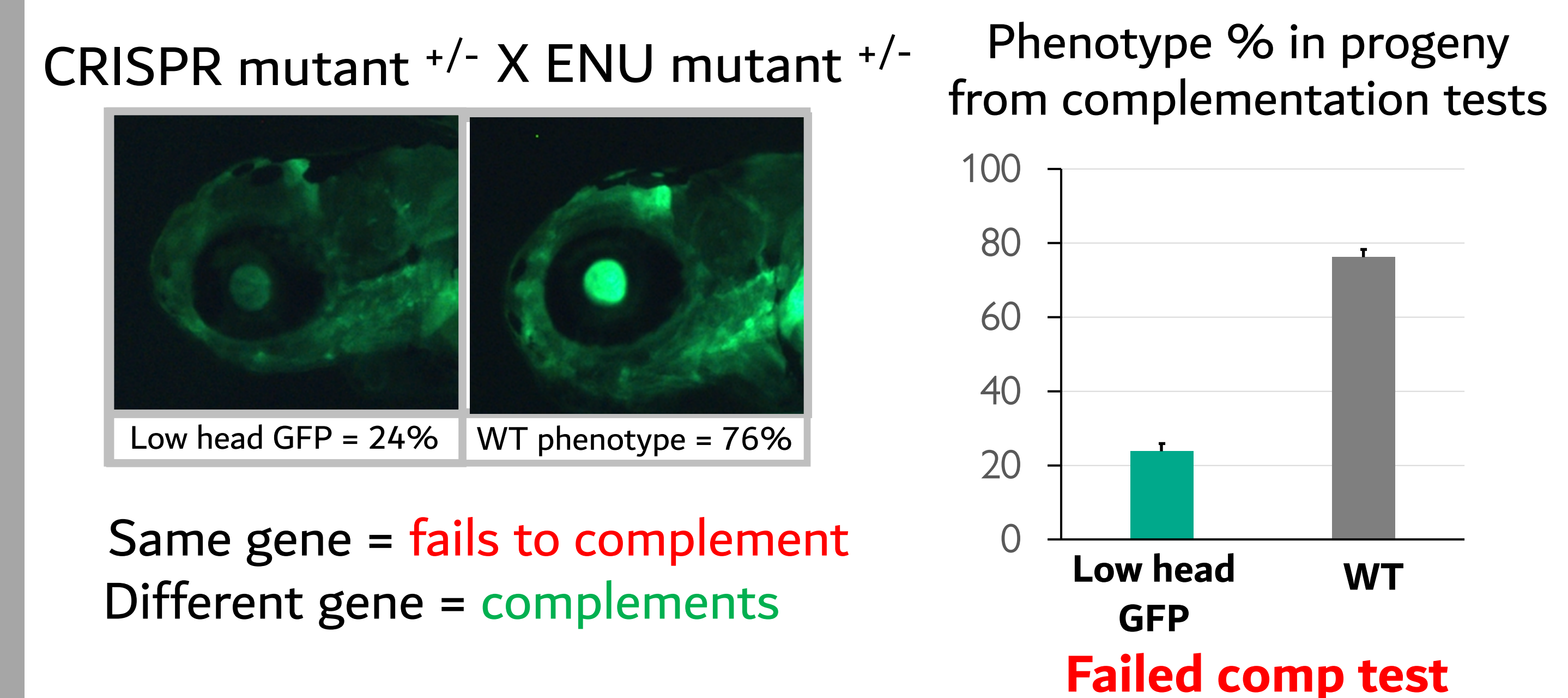
## Kdm4ab exhibits a neural-specific expression



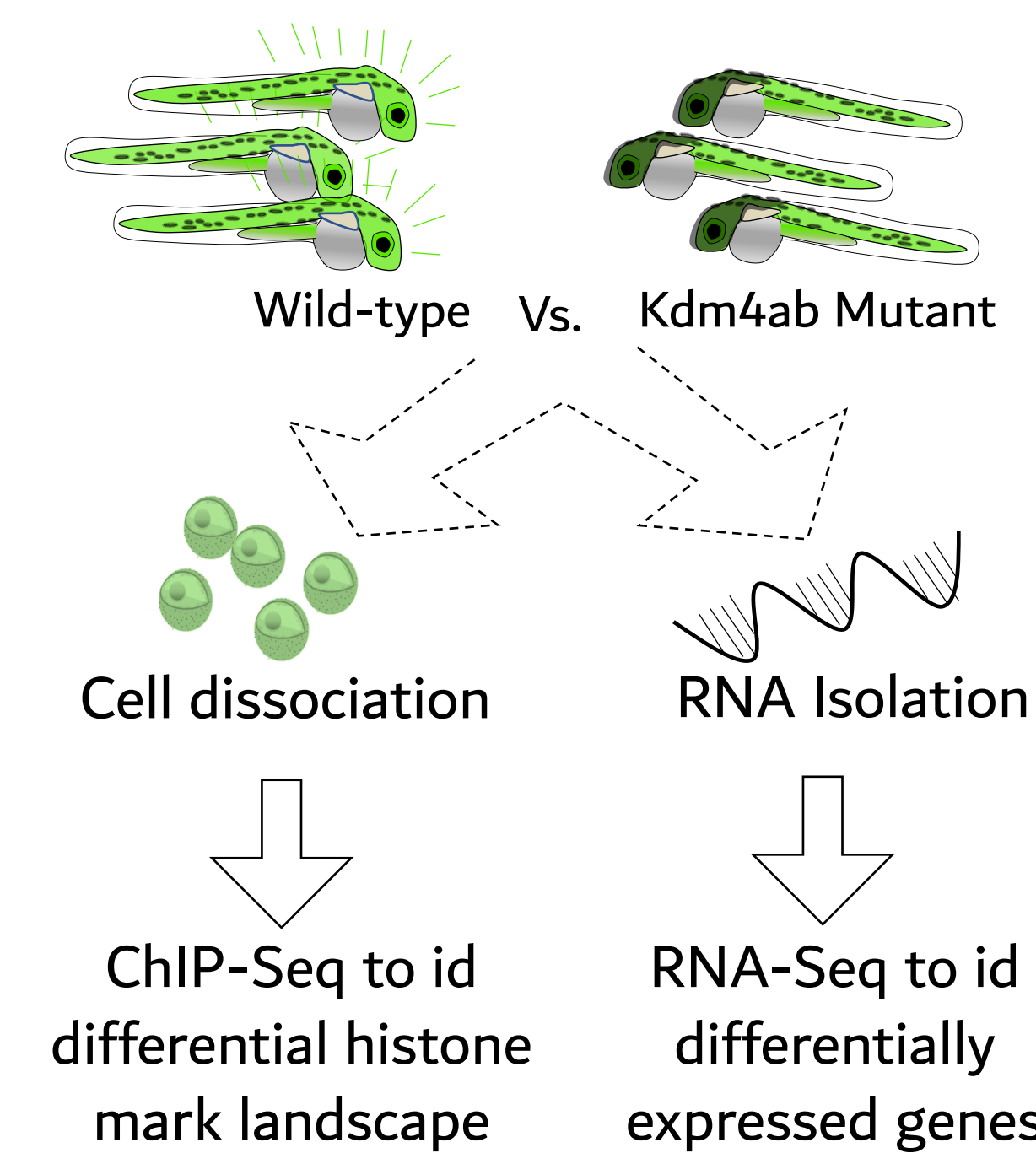
## Kdm4ab mutants and morphants exhibit similar phenotypes



## Complementation test validates *kdm4ab* as the responsible gene



## Future Directions



## Conclusions

- Kdm4ab is most likely a critical epigenetic regulator of neurodevelopment
- Kdm4ab mutants and morphants exhibit similar phenotypes
- Kdm4ab-mediated pathways and mechanisms will be elucidated in the future