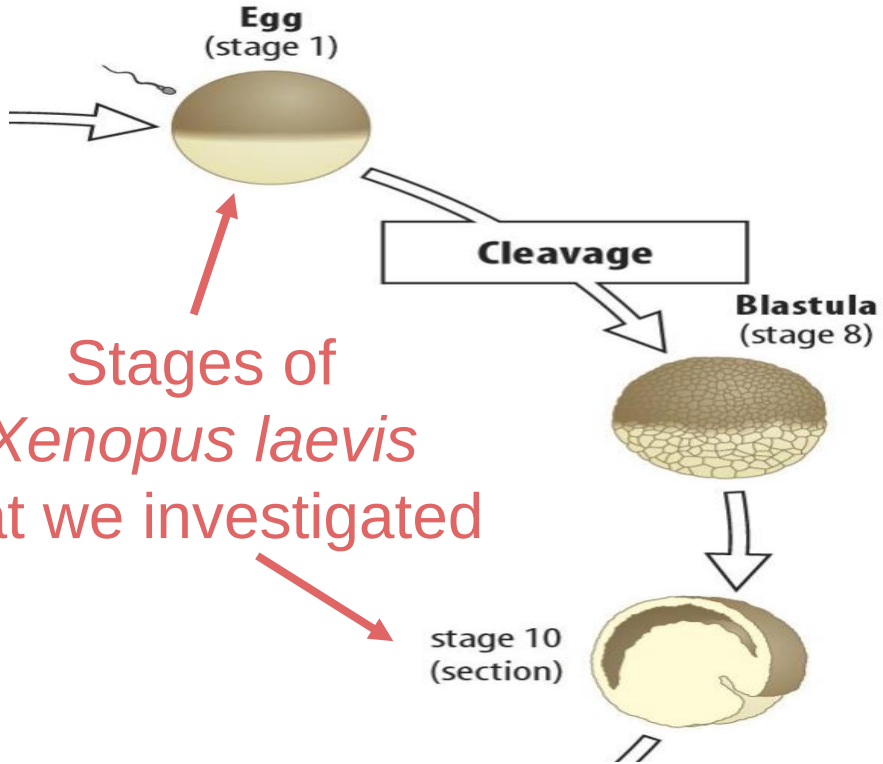
Maternal-to-Zygotic transition in *Xenopus laevis* is regulated by miRNA family 427

Yogindra Raghav,
Sarah Morgan, Peter Allen

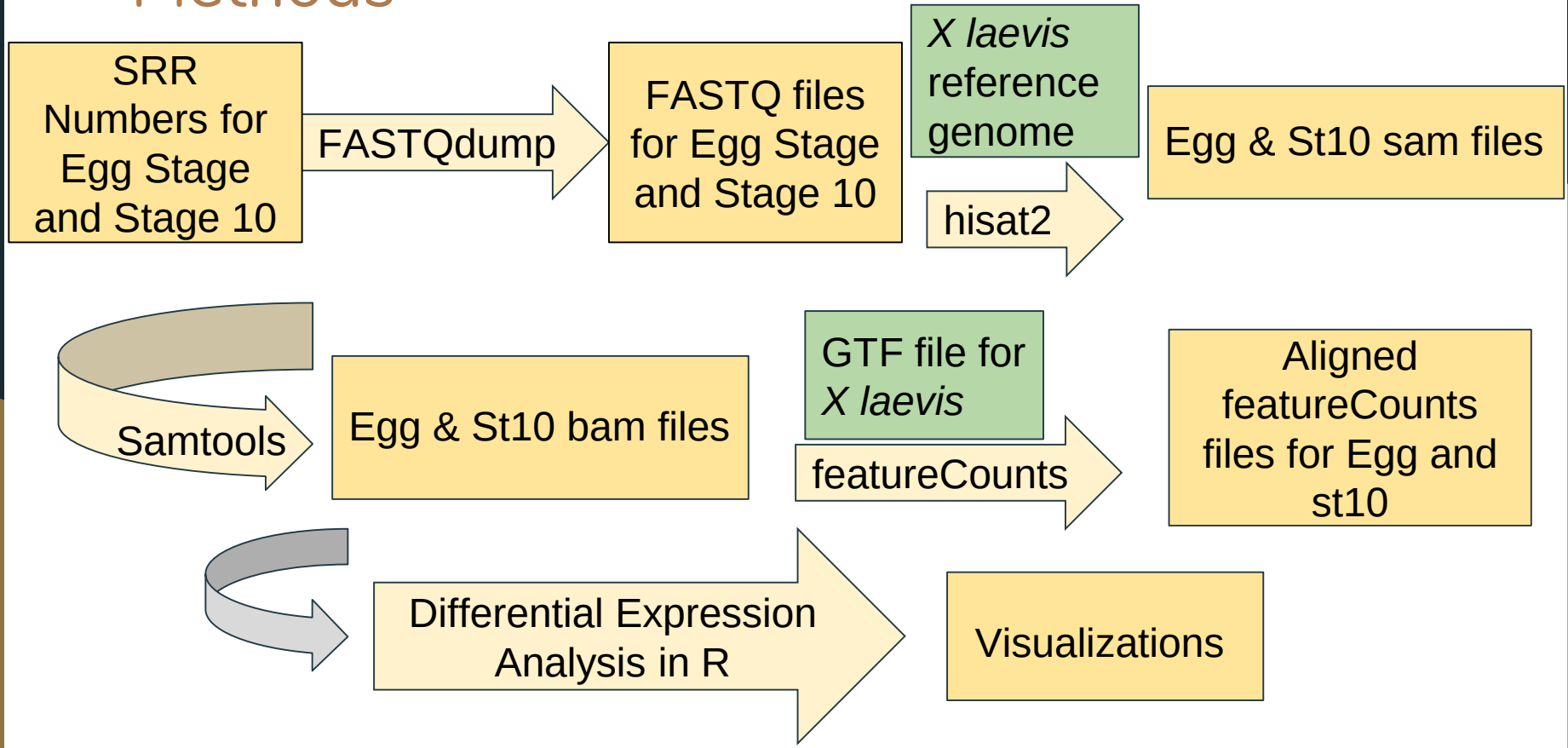
Early Stages of Life



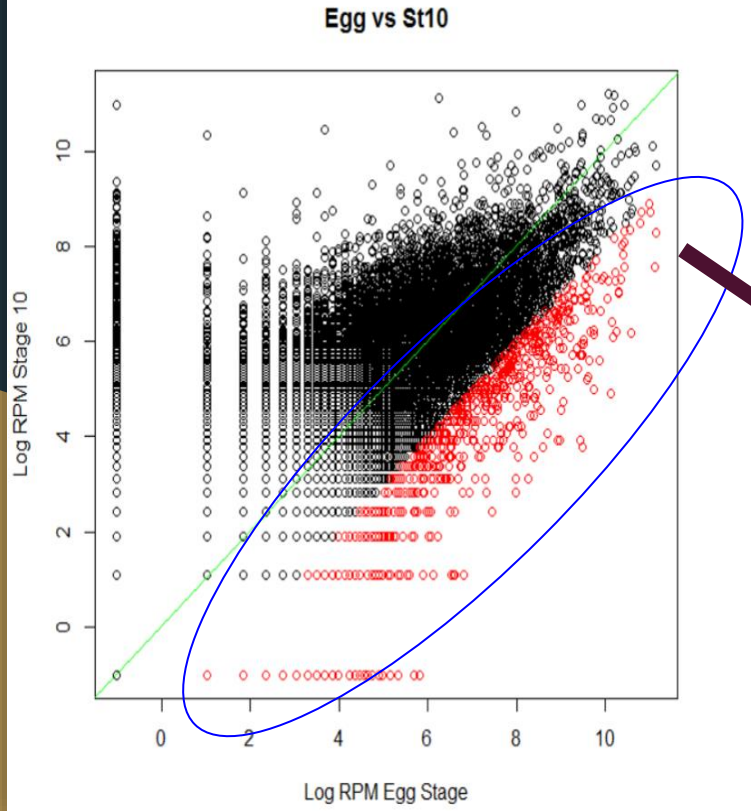
Stages of *Xenopus laevis* that we investigated

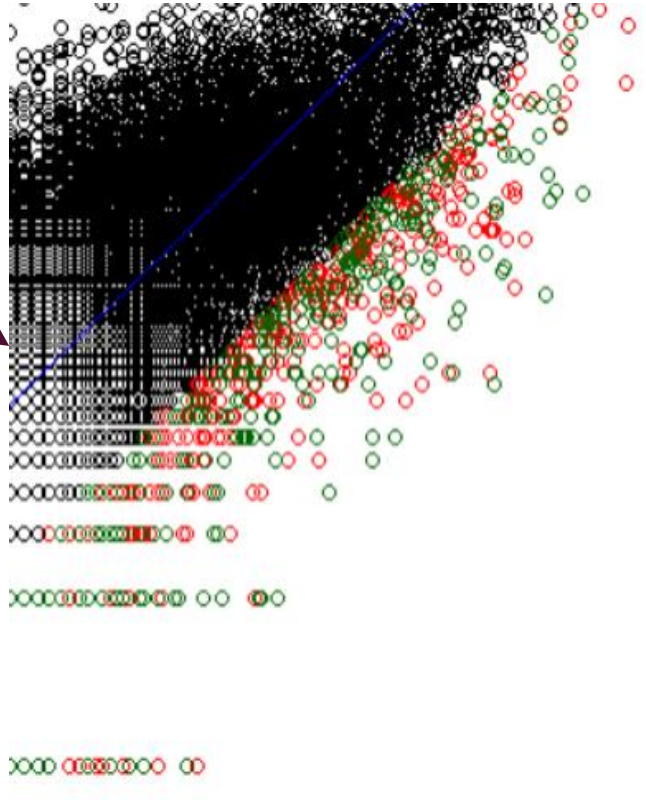
Is there a correlation between the target sequence (GCACTT) of miR-427 being present in the 3'UTR of *Xenopus laevis* genes and maternal clearance?

Methods


SRR Numbers for Egg Stage and Stage 10
FASTQdump
FASTQ files for Egg Stage and Stage 10
X laevis reference genome
hisat2
Egg & St10 sam files
Samtools
Egg & St10 bam files
GTF file for X laevis
featureCounts
Aligned featureCounts files for Egg and st10
Differential Expression Analysis in R
Visualizations

Log-fold significant vs “maternally cleared”





target sequence

no target sequence

Significance Test for Target Sequence

$P < 0.05$	Stage 10 with sequence	Stage 10 without sequence	Total
Decreased	550	1033	1853
No sig. decrease	8204	19721	27925
Total	8754	20754	29508

Results, Limitations, Future Directions

Fisher test confirms significant connection between genes with the target sequence and decreased expression at stage 10 vs. egg stage

Future Directions: Understanding reasons for differences in maternal clearance between L and S chromosomes

Limitations: Only used one study's data on expression changes, and only at two stages (egg and stage 10)