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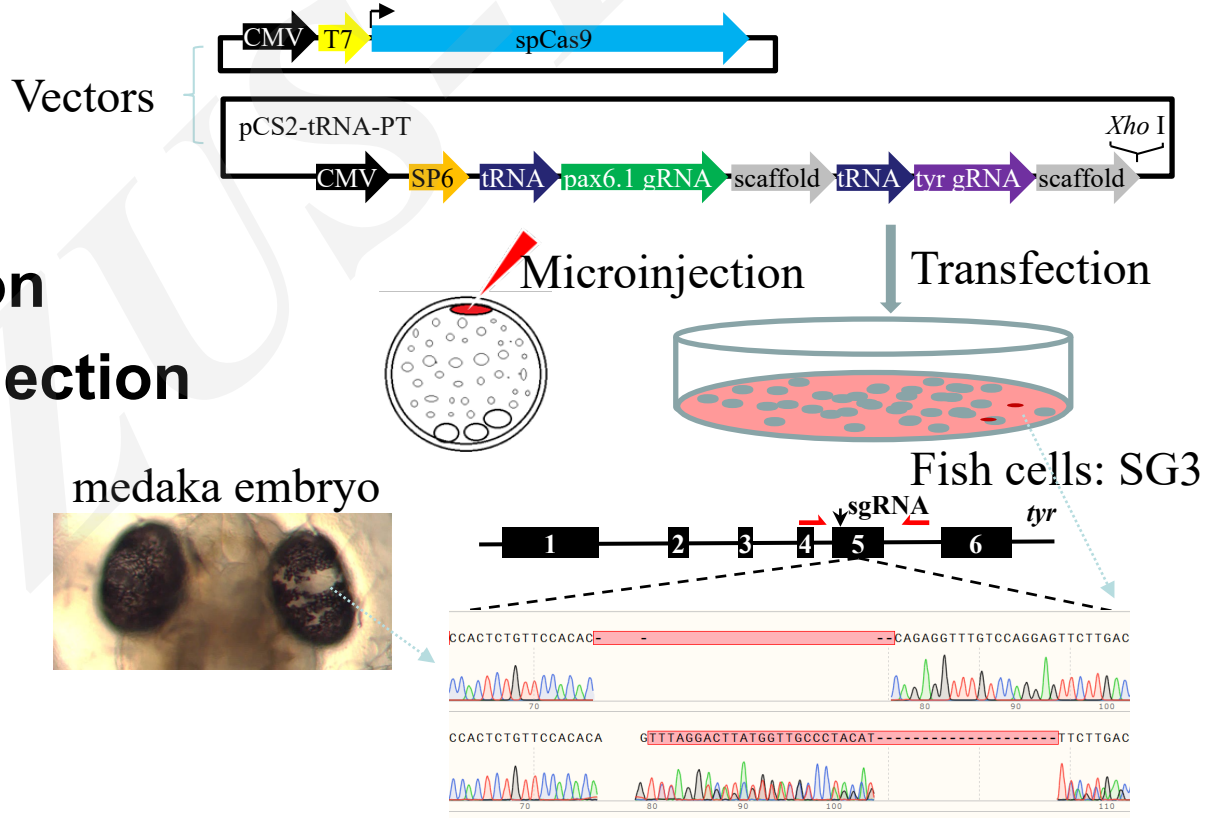
# Efficient gene editing in a medaka (*Oryzias latipes*) cell line and embryos by SpCas9/tRNA-gRNA

**Key words:** Medaka (*Oryzias latipes*); Gene editing; Poly-tRNA-gRNA; Embryos; Fish cells

# Research Summary

**This study mainly focused on The PTG system was combined with the CRISPR/Cas9 system under high levels of promoter to successfully induce gene editing in medaka, and the following aspects were studied in detail:**

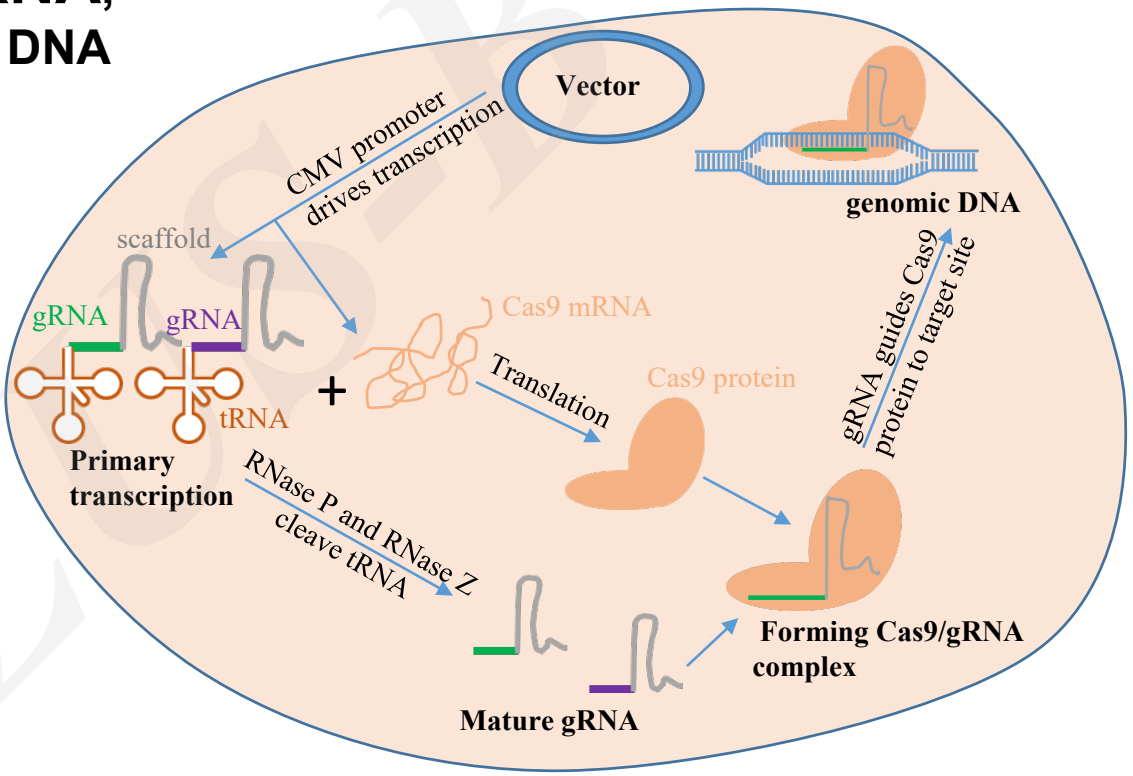
- **Vectors construction**
- **Embryonic microinjection and observation**
- **Cell culture and transfection**
- **Mutation screening**



# *Innovation points*

- **Transcribed tRNA-gRNA,**
**similarly to the gRNA, induced DNA editing in medaka embryos**

- **The tRNA-gRNA system could also produce functional gRNA under the control of CMV promoter in medaka embryos**




- **CMV promoter** can also drive transcription of the tRNA-gRNA system in medaka SG3 cells, and produce functional gRNA to edit the target gene