

# The presence of extracellular microRNAs in the media of cultured *Drosophila* cells



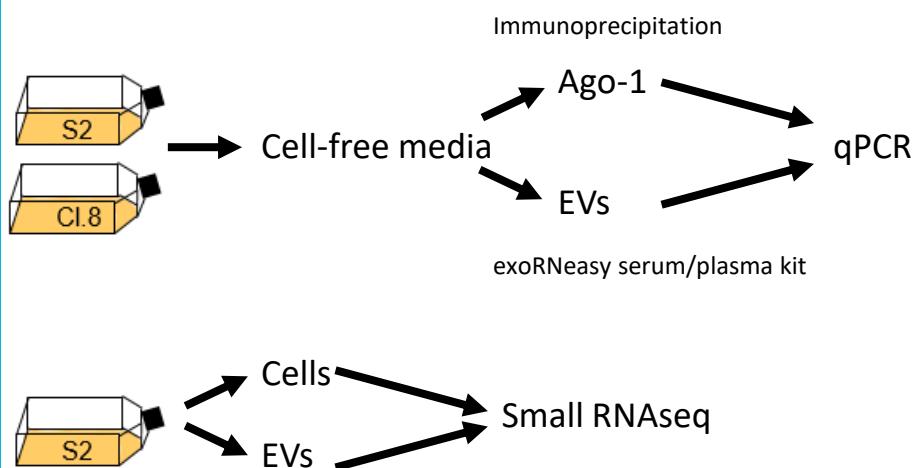
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\* Contributed equally to this work

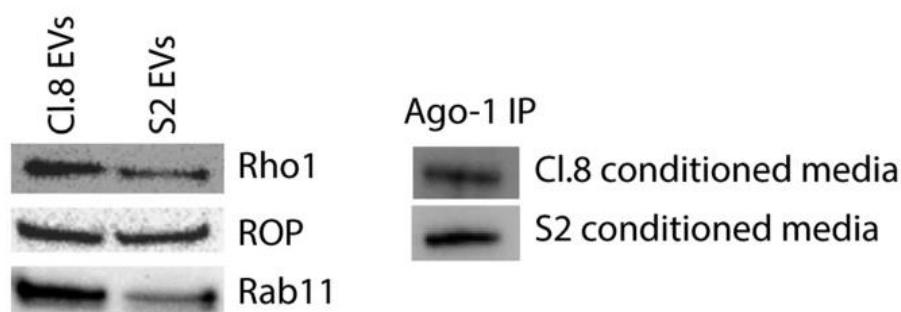
## Introduction

- ✓ Small regulatory RNAs, including microRNAs, are traditionally described at an intracellular level. However, extracellular small RNAs have been identified in bio-fluids of plants and animals.
- ✓ To protect them from the harsh environment, ex-miRNAs associate with extracellular vesicles (EVs) or RNA-binding proteins (RBPs) such as Argonaute-1, which protect them from degradation. In addition, functional EV-mediated transfer has been shown.
- ✓ Studies reporting on extracellular microRNAs (ex-miRNAs) in insects are scarce. We therefore aimed at demonstrating the presence of ex-miRNAs in the media of cultured *Drosophila* cells.

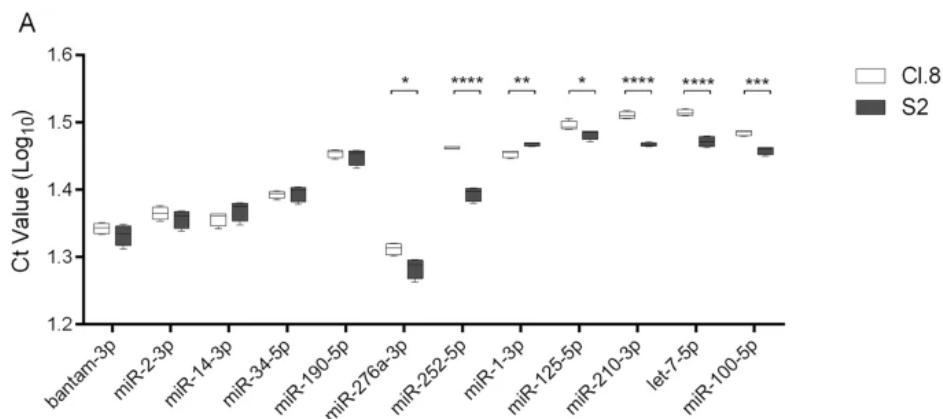
## Methods



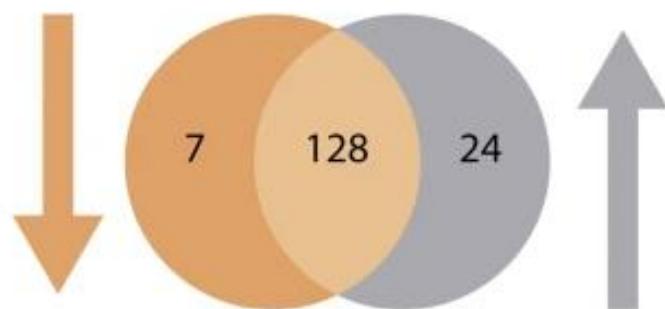
## EV and Ago-1 isolation



## miRNAs are encapsulated in EVs

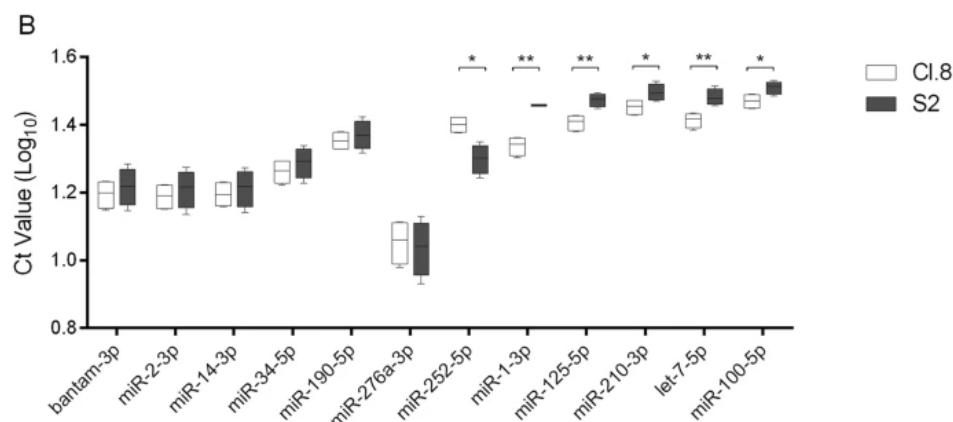


## Selective miRNA secretion in EVs



31 miRNAs differentially present in S2 EVs (compared to S2 cells)

## and associated with extracellular Ago-1



## Conclusions

- ✓ Extracellular microRNAs are present in cell-free media of cultured *Drosophila* cells
- ✓ More specifically, they are encapsulated in extracellular vesicles (EVs) or associated with extracellular Argonaute-1
- ✓ MicroRNAs are selectively secreted in EVs