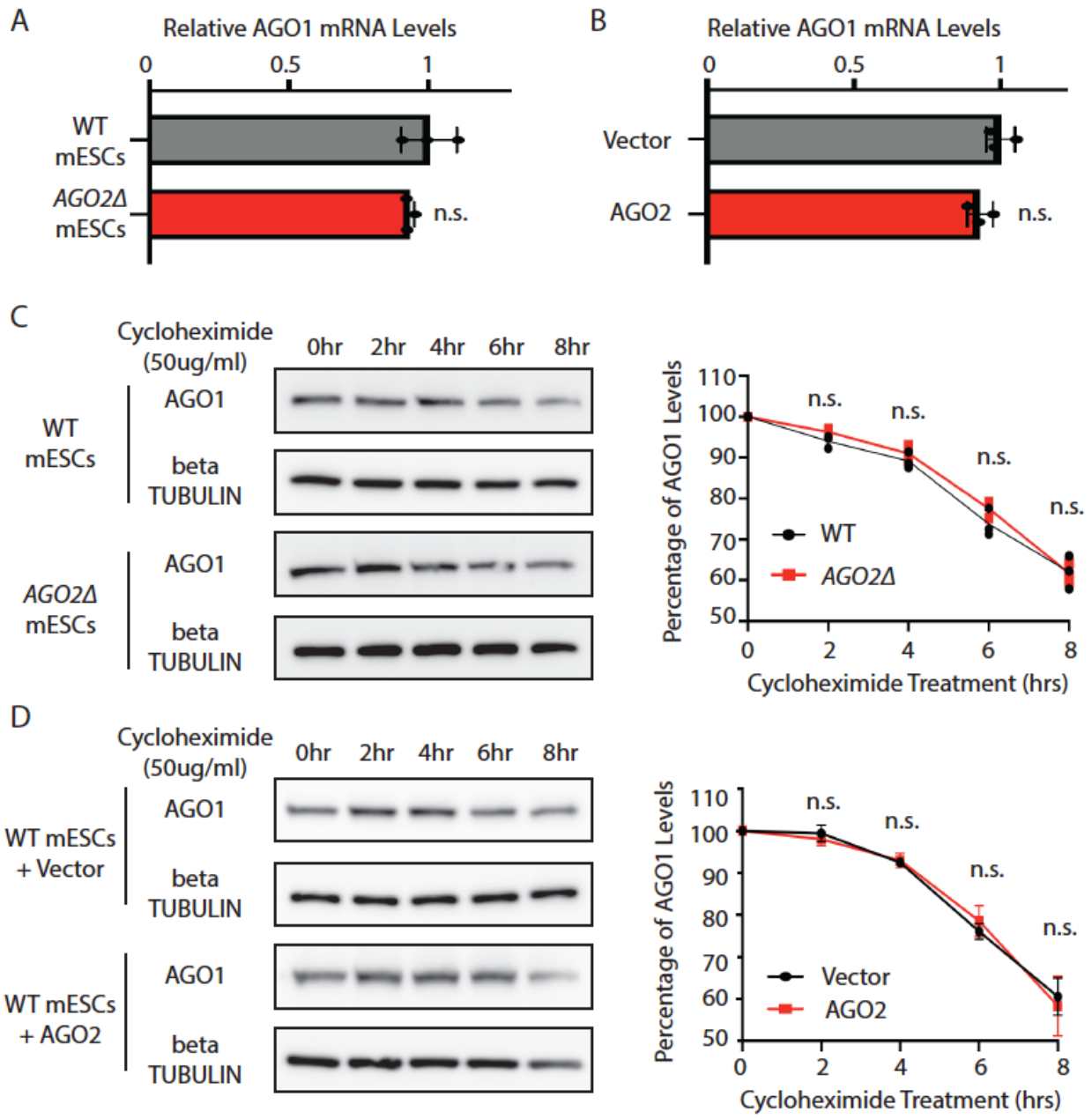


**Figure S1. AGO2 does not regulate AGO1 mRNA levels and protein stabilities.**

A. qRT-PCR of AGO1 mRNA in the WT and *AGO2Δ* mESCs.
B. qRT-PCR of AGO1 mRNA in the WT mESCs expressing a vector or AGO2.
C. AGO1 protein stability measurement in the WT and *AGO2Δ* mESCs.
D. AGO1 protein stability measurement in the WT mESCs expressing a vector or AGO2.

The quantification panels represent the means (± SD) of three independent experiments. 18S rRNA was used for normalization in qRT-PCR, and beta-TUBULIN

was used for normalization in protein quantifications. One-Way ANOVA was used to determine the significance of the difference, n.s. not significant ($p > 0.05$).

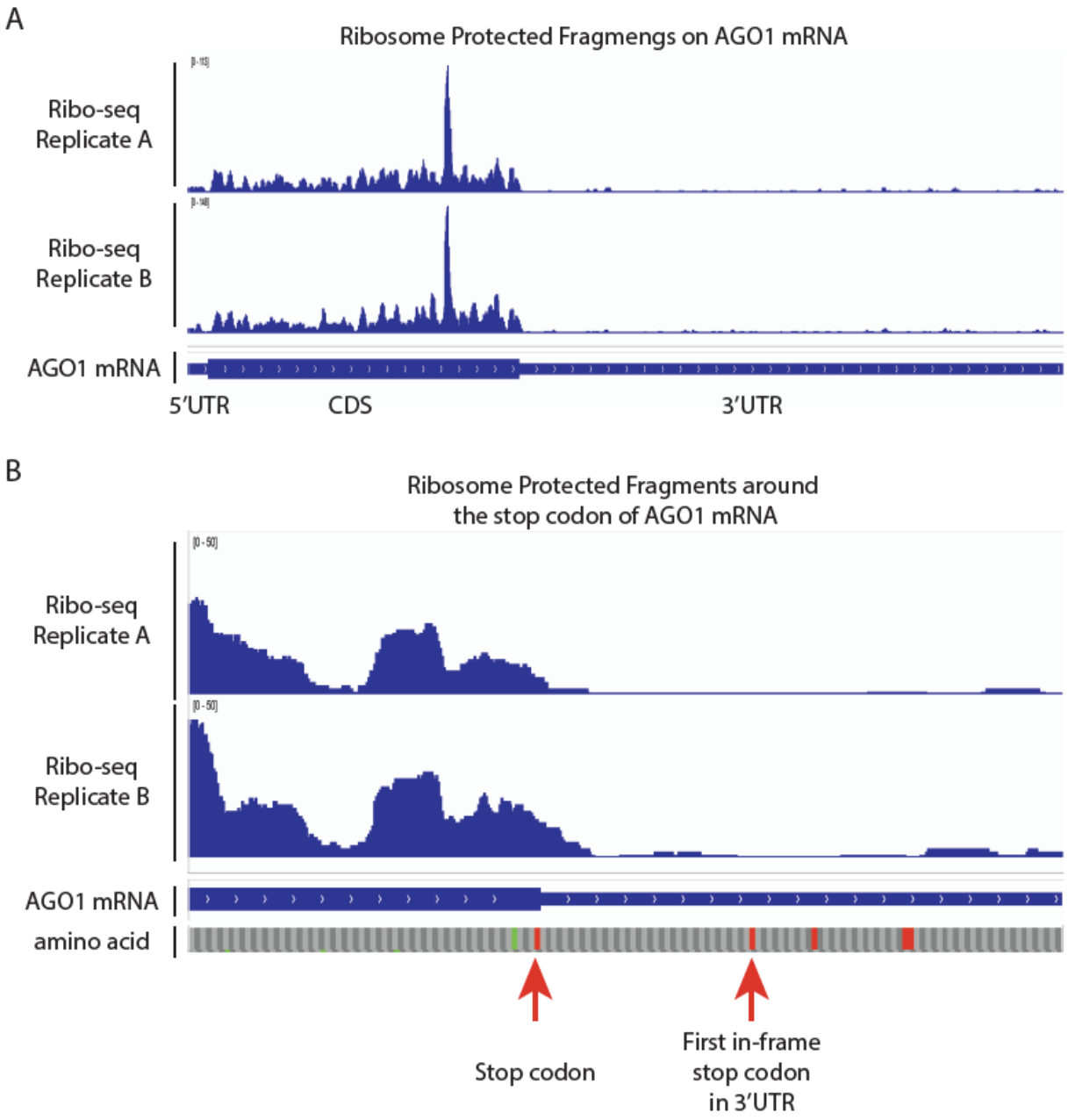


**Figure S2. Reads from ribosome profiling in mESCs at the *AGO1* locus.**

A. The reads from ribosome profiling in mESCs mapped to the *AGO1* locus
B. The reads from ribosome profiling in mESCs mapped to around the stop codon of *AGO1* mRNA.

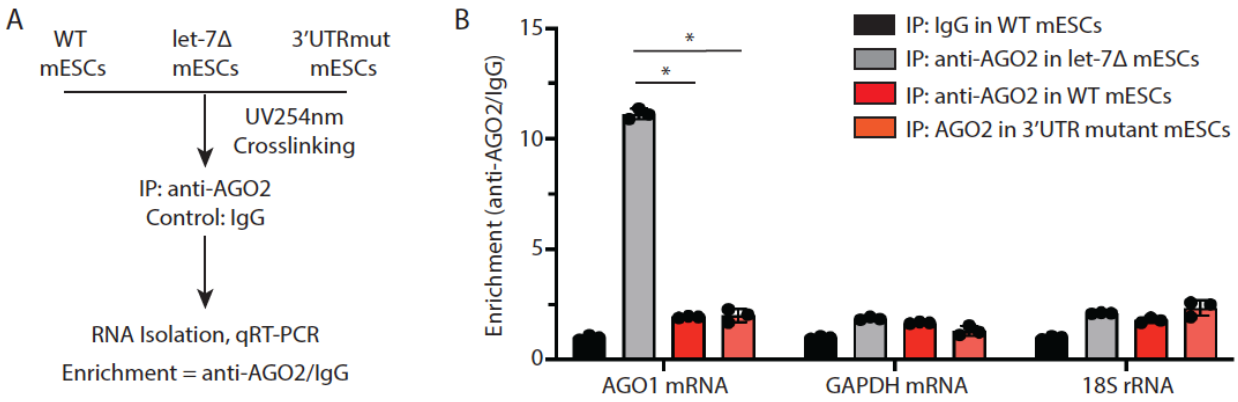


**Figure S3. AGO2 binds to AGO1 mRNA in a let-7 miRNA dependent fashion.**

A. Outline of the CLIP-qRT-PCR to examine the mRNAs bound by AGO2 in the WT, *let-7Δ,* and AGO1 3'UTR mutant mESCs.

B. qRT-PCR was performed for the indicated mRNAs isolated from the anti-AGO2 or IgG immunoprecipitations in the WT, *let-7Δ,* and AGO1 3'UTR mutant mESCs. The mRNA signals from IgG in the WT mESCs were set as 1 for relative quantifications. The results represent the means (± SD) of three independent experiments. One-Way ANOVA was used to determine the significance of the difference, * $p < 0.05$.