**The Drosophila Dicer-1 Partner Loquacious Enhances miRNA Processing from Hairpins with Unstable Structures at the Dicing Site, (Alvin,2016)**

Pri-miRNA transcripts -> processed by RNAase3 + Drosha -> pre-miRNAs (60-80 nt) (with looped regiosn) -> export to cytoplasm -> dicer1 + partner removes looped regions to release mature miRNA duplex (without loop).

Dicer partners remain more enigmatic in humans, their partners TRBP and PACT do not seem to play a crucial role in processing. KO of either/both do not produce siginificant/ clear effect.

Also note that there are more than 1 type of dicer, there is also dicer2.

In DM, the counterpart/homolog are the LOQS family proteins, these come from the same gene locus and are altsplicing/polyA variants.

PA and PB, bind to dicer1 and affect miRNA processing. KO of either loqs result in pre-miRNA accumulation. Whereas PD binds to dicer2, and affects the siRNA pathway.

Here we should note that for our initial bar charts, there is significantly higher counts in DNA transposons and hpRNA.

**Key-findings**:

They established cell line that lacks Loqs locus entirely. 40% of miRNAs showed reduced expression in a loqs-abolished background, and that loqs-dependant miRNAs tend to have unstable base-pairing at the dicer 1 sites.

**Sub-findings, more pertinent to PB:**

Cell lines stably transfected with the Loqs-PB rescue or EGFPcontrol plasmid. We added synthetic RNA oligonucleotides with ten different sequences (hereafter termed spike-in oligos) and used the spike-in read counts as calibrators. This normalization method allows for more accurate estimation of the relative bulk abundance of miRNAs than conventional normalization methods.

The bulk miRNA read abundance was only mildly 50%) increased in cells rescued with Loqs-PB.

There were 129 miRNA genes that met our expression cutoff (>2.5 average normalized reads in the four libraries)

**Sub-findings, more pertinent to PD:**

siRNA production was restored by Loqs-PD expression. Plasmids encoding hp-siRNA precursors were co-transfected with the rescue constructs and mature siRNA were detected by northern blotting (Figure 2B). As expected, we observed clear signals of mature siRNAs from hp-CG4068 and hp-CG18854 only in cells rescued with Loqs-PD, while the mature siRNA signals were very weak or undetectable in other lanes.