

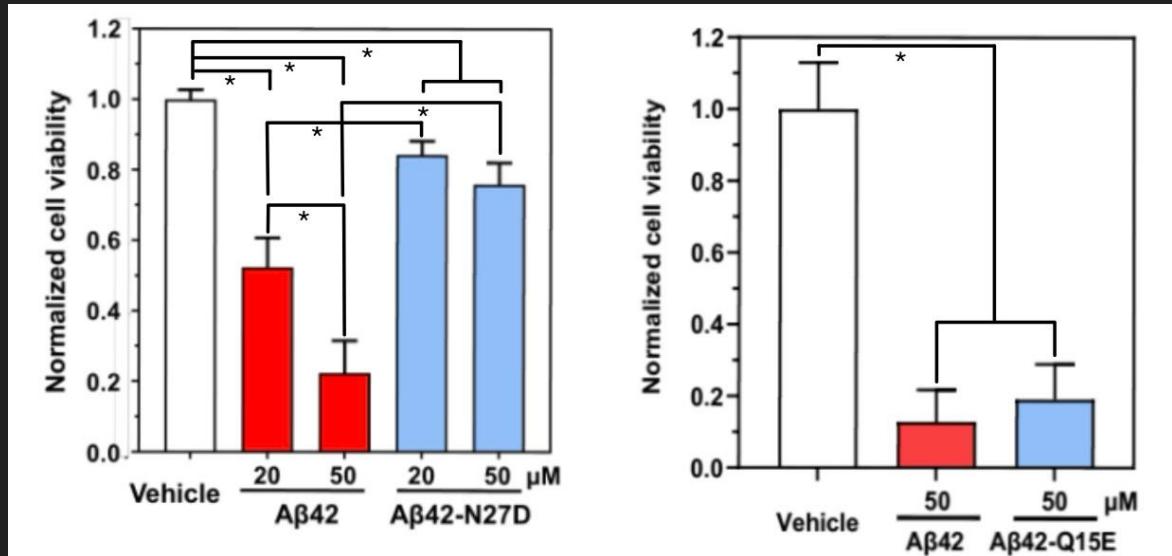
Single point mutations to Amyloid- β ₄₂ increase longevity in *Drosophila* AD models

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Discretion needed!

Please do not share the specific mutations

Fig. 1 *in vitro* analysis of single point mutations to A β . Data from Raskatov Lab at UCSC



A) Neurotoxicity of A β_{42} and A β_{42} -N27D against SH-SY5Y cells at 20 & 50 μ M, p < 0.05.

B) Neurotoxicity of A β_{42} and A β_{42} -Q15E against SH-SY5Y cells at 50 μ M, p < 0.05.

Fig. 2: Comparison of Drosophila longevity
All genotypes

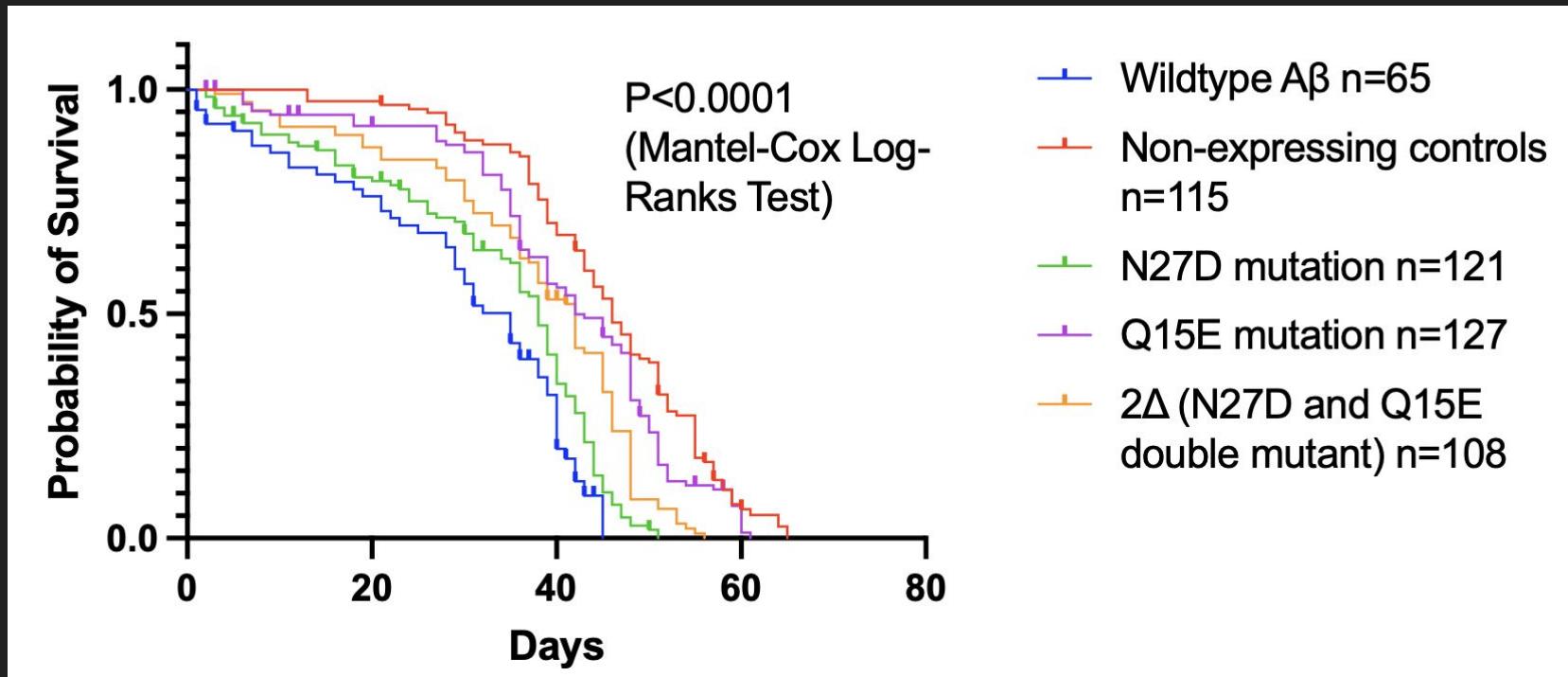


Fig. 3: Comparison of Drosophila longevity;
A β and non-expressing control

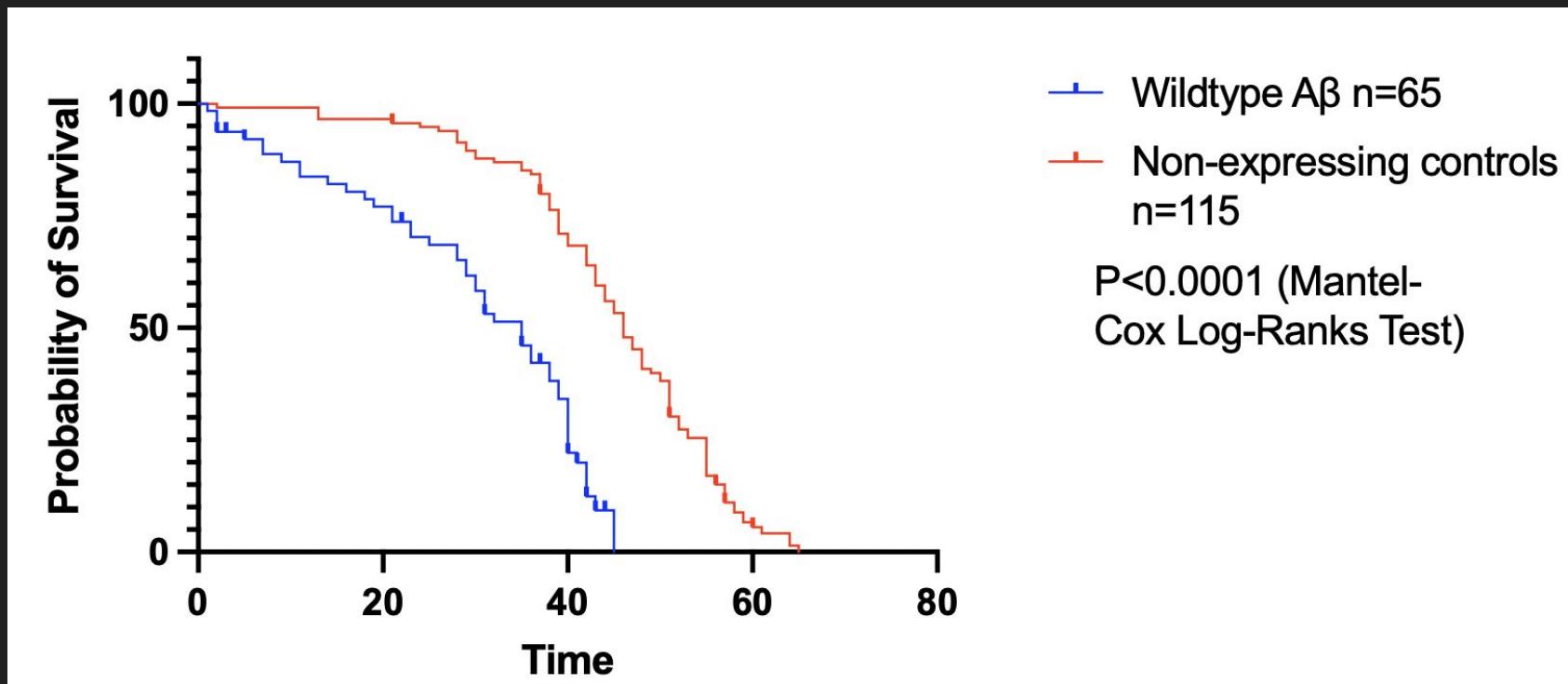


Fig. 4: Comparison of Drosophila longevity;
Q15E, N27D, and 2Δ

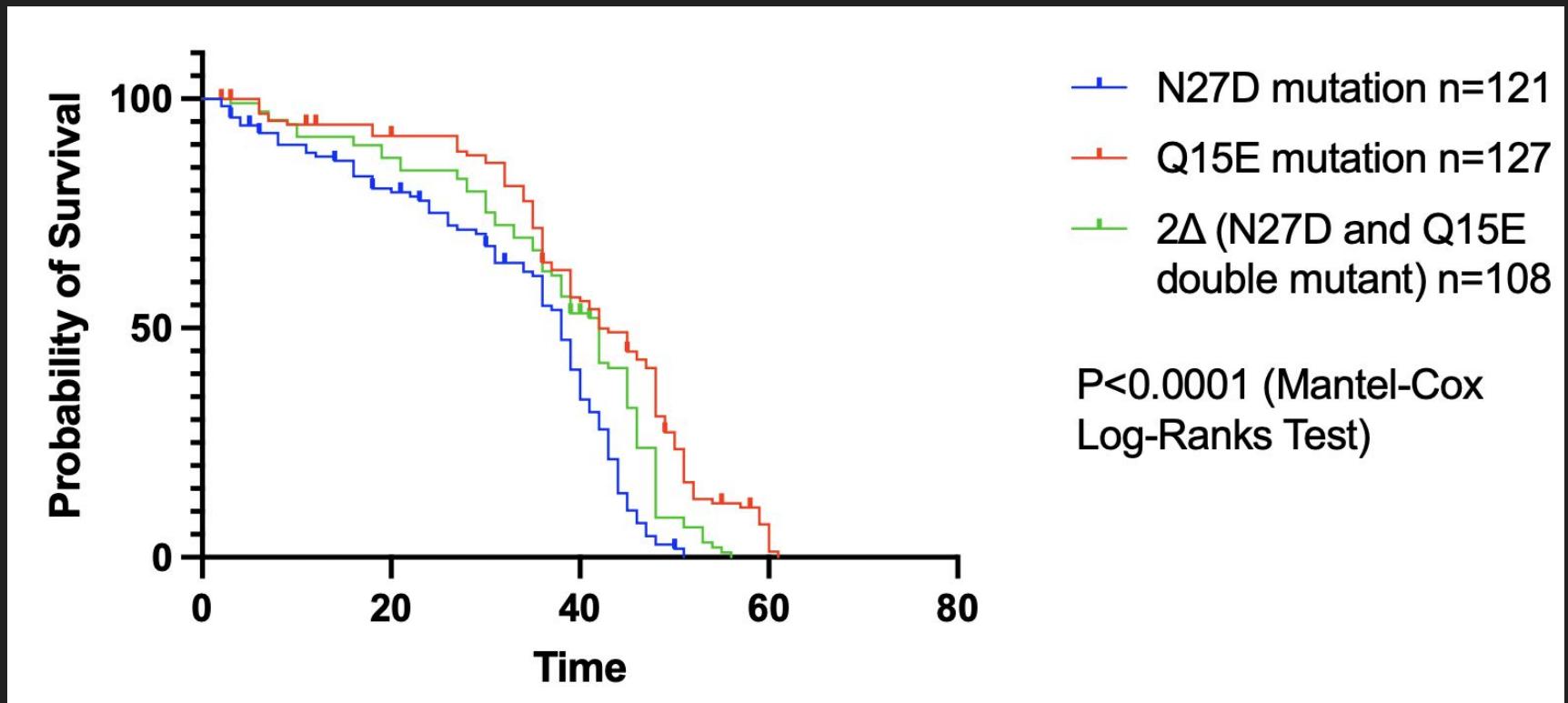


Fig. 5: Comparison of Drosophila longevity;
N27D, non-expressing control, and WT $\text{A}\beta_{42}$

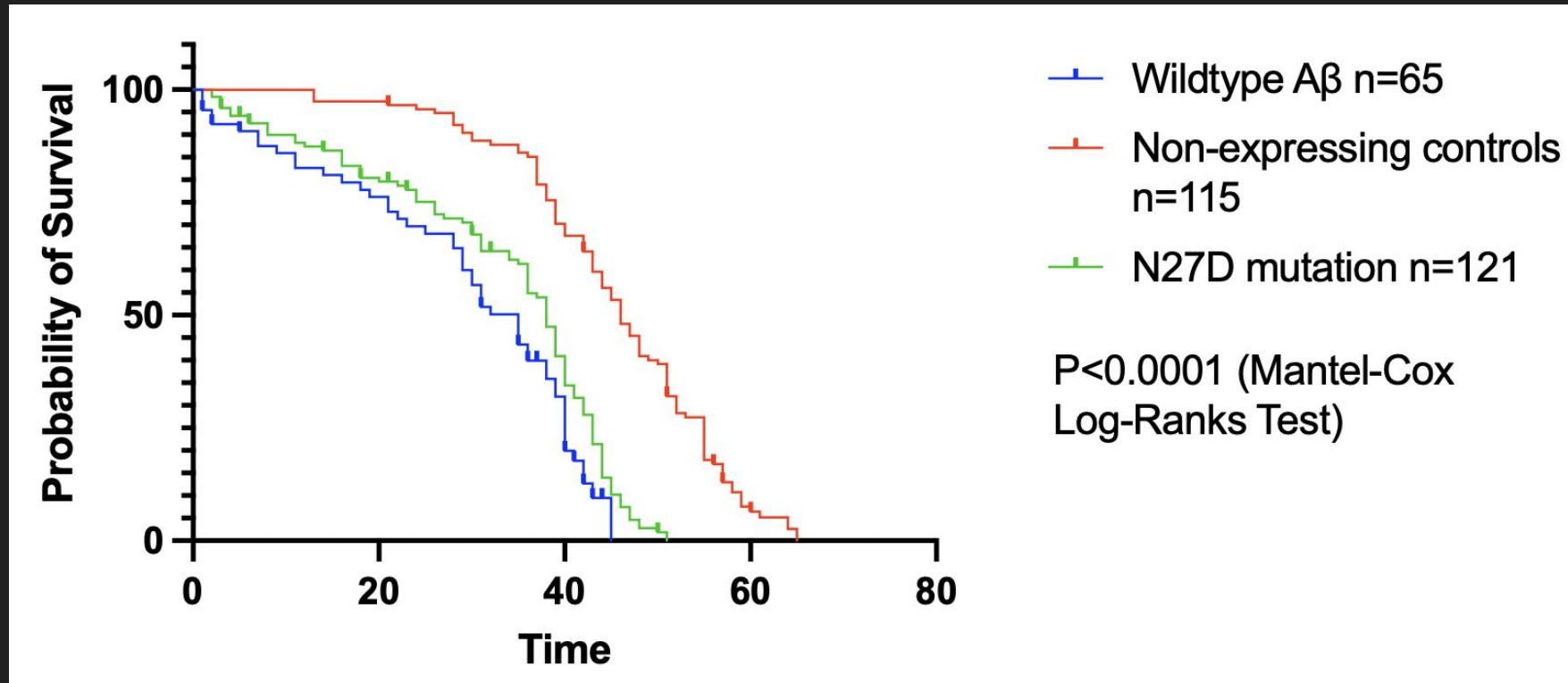


Fig. 6: Comparison of Drosophila longevity;
2 Δ , non-expressing control, and WT A β ₄₂

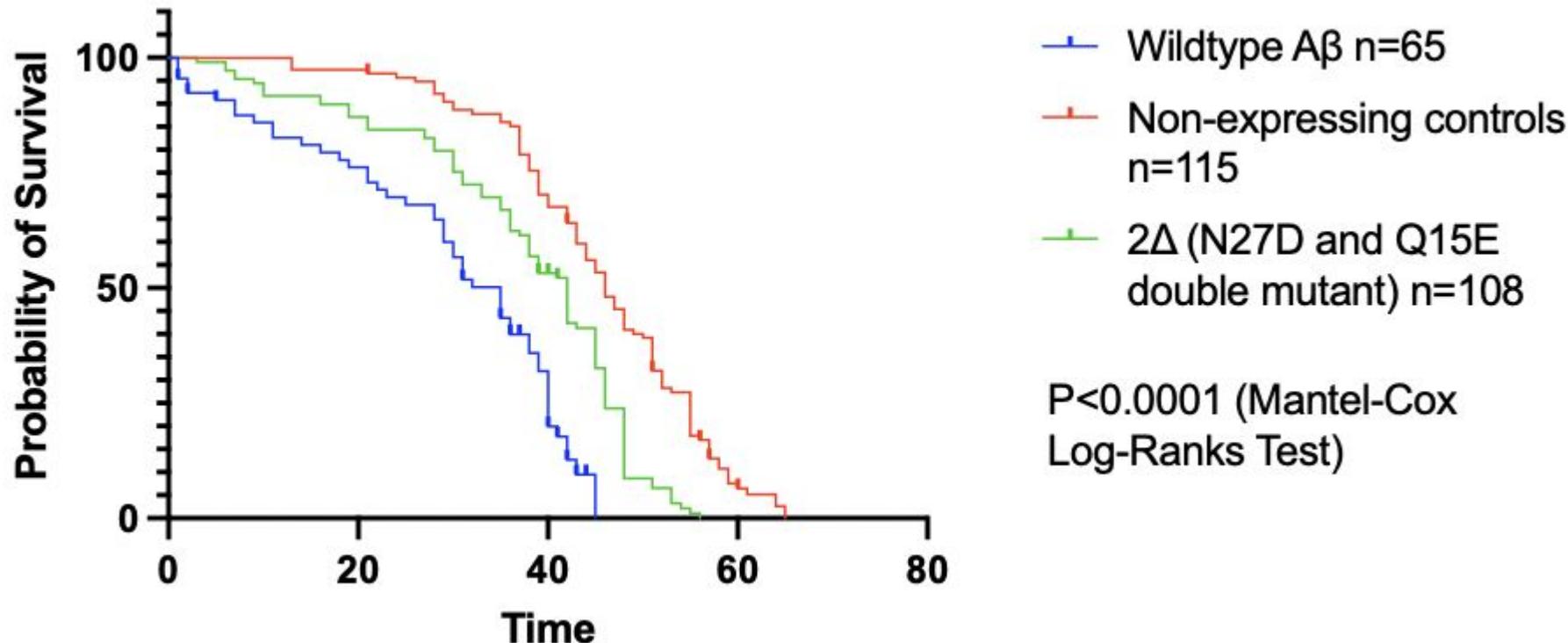
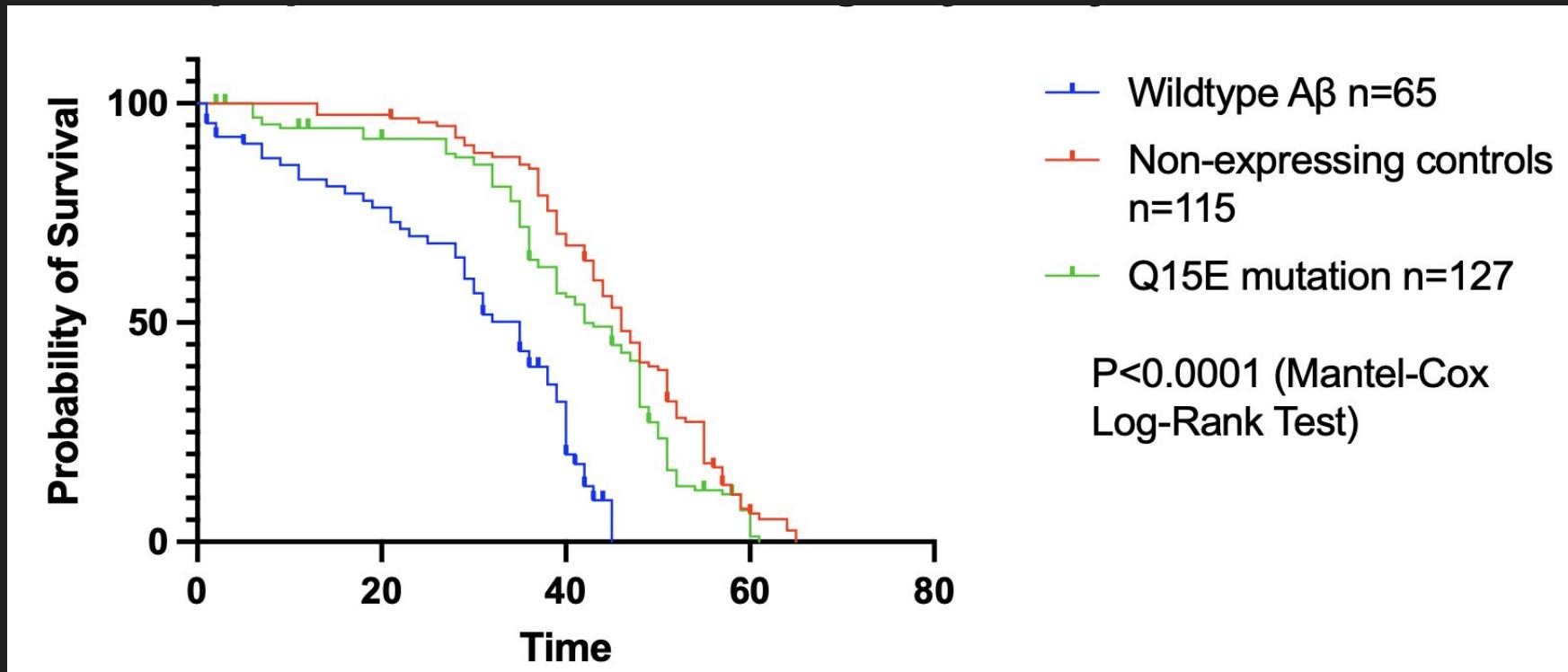


Fig. 7: Comparison of Drosophila longevity;
Q15E, non-expressing control, and WT $\text{A}\beta_{42}$



Interpretations

- 1. Differences in Aggregation Propensity**
- 2. Altered Binding to Cellular Clearance Mechanisms**
- 3. Altered Gene Regulation**
- 4. Microglial Activity**
- 5. Synapse Communication**

Next Steps

1. **RT-PCR (Reverse Transcription Polymerase Chain Reaction)**
 - a. Converts RNA → cDNA using reverse transcriptase, then amplifies specific DNA sequences.
 - b. Used to detect and analyze RNA expression.
2. **qRT-PCR (Quantitative Reverse Transcription PCR)**
 - a. Similar to RT-PCR but includes fluorescent dyes or probes to quantify DNA amplification
3. **Western Blot**
 - a. A technique used to detect and quantify specific proteins in a sample. It involves protein separation by gel electrophoresis, transfer to a membrane, and detection using antibodies.

Thank you!

Any questions?