Description of Supplementary Files

File Name: Supplementary Information

Description: Supplementary figures

File Name: Peer Review File

Direct *in vivo* evidence for seed-induced acceleration of amyloid-β neurotoxicity

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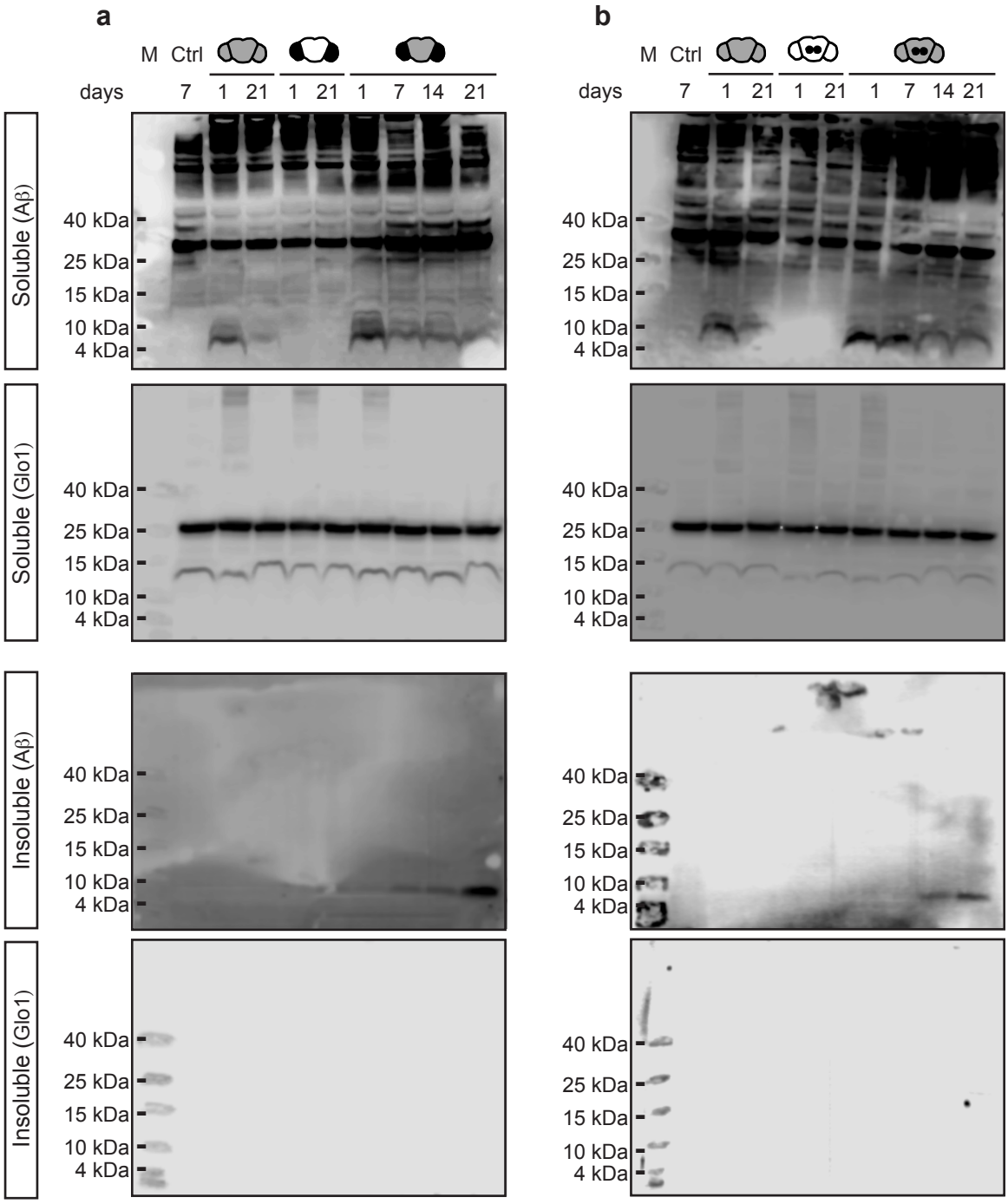
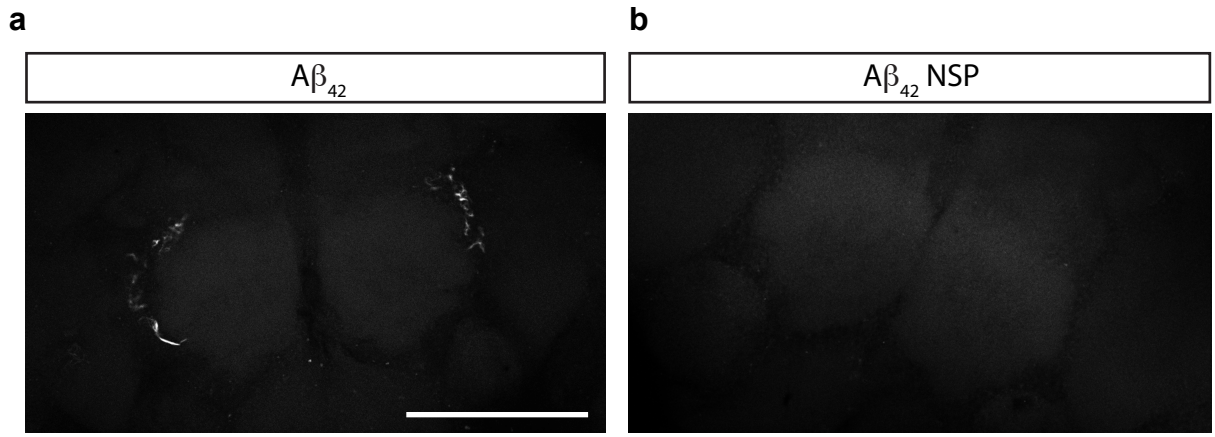
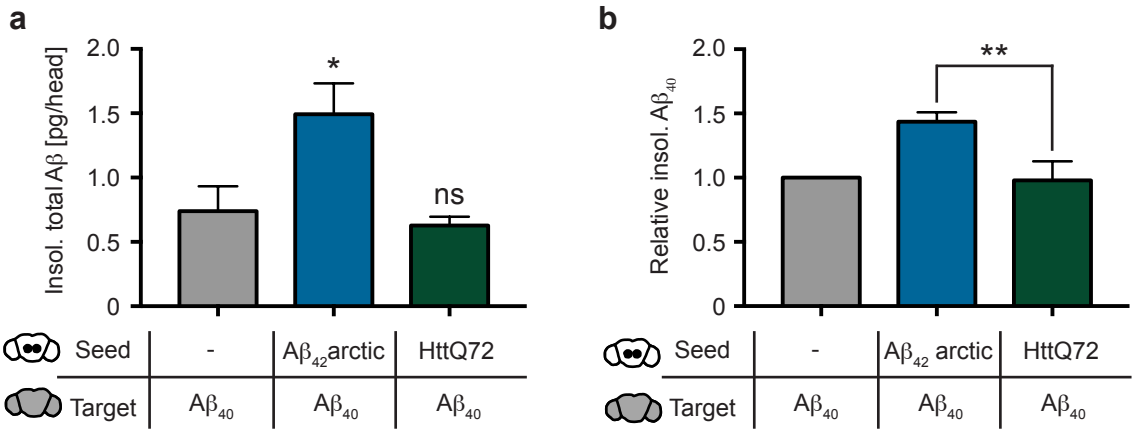
Supplementary Information



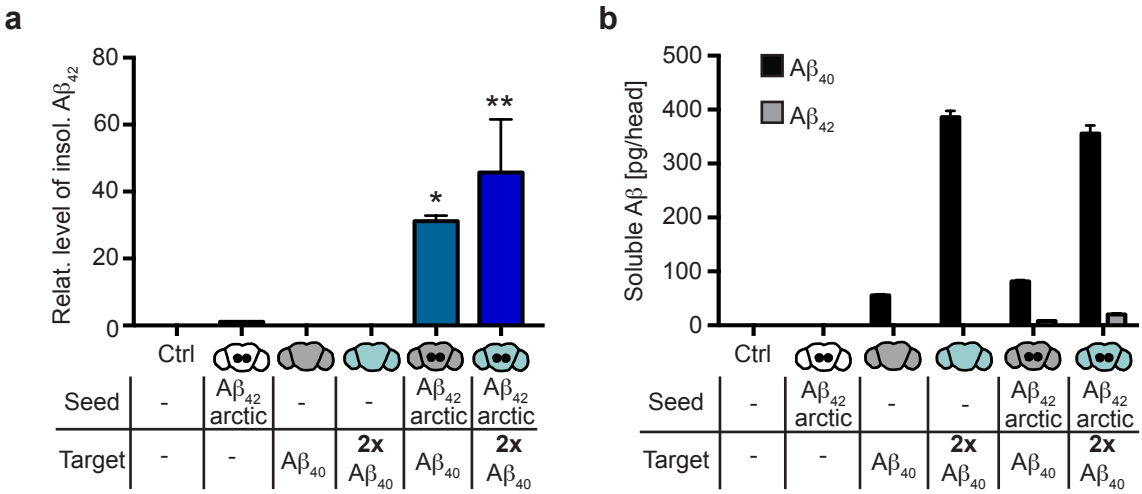
Supplementary Figure 1 | Time-dependent seeding of amyloid deposition in *Drosophila* brains. Exemplary western blot analysis of flies expressing either a single Aβ variant or the combination of $A\beta_{40}$ and $A\beta_{42}$arctic. The indicated time points (days post eclosion) were analysed. $A\beta_{42}$arctic seeds were either expressed in the optic lobes (**a**) or the central brain (**b**). Driver lines as indicated in Fig. 1. Total protein was extracted from the fly head and then seperated into soluble and insoluble fraction. The blots were probed with the monoclonal Aβ antibody 6E10 and with an antibody to detect Glyoxalase 1 (Glo1, loading control). The Spectra Multicolor Low Range Protein Ladder was used as size marker (M).



Supplementary Figure 2 | Aβ missing the secretion peptide does not accumulate in the brain. Immunohistochemical analysis of fly brains expressing $A\beta_{42}$ either with (**a**) or without (**b**, NSP) the secretion peptide. Transgene expression was driven using the *GMR14B06*-Gal4 driver. The confocal images show a zoom of the antennal lobes. Fly brains were stained with 6E10 detecting total Aβ. Only Aβ carrying the secretion peptide can be detected in the target region (a), whereas no 6E10 staining can be observed for $A\beta_{42}$NSP (b). Scale bar, 100 µm.



Supplementary Figure 3 | Aggregation-prone $A\beta_{42}$arctic but not Huntingtin seeds induce deposition of $A\beta_{40}$. Levels of insoluble Aβ in 21-day-old flies with the indicated genotypes were assessed using ECL analysis. As seeds we either expressed $A\beta_{42}$arctic or an aggregation prone Huntingtin variant with an expanded polyQ tract (HttQ72) in the central brain using *GMR14B06*-Gal4. (**a**) Level of insoluble total Aβ, i.e. the sum of $A\beta_{40}$ and $A\beta_{42}$ (error bars, s.e.m., n=5 independent biological replicates, one-way ANOVA (Dunnett's multiple comparisons test) in comparison to $A\beta_{40}$ only (target) only, *P=0.0239). (**b**) Relative level of insoluble $A\beta_{40}$ normalized to target only (error bars, s.e.m., n=4 independent biological replicates, one-way ANOVA (Dunnett's multiple comparisons test), **P=0.0094).



Supplementary Figure 4 | Accumulation of $A\beta_{42}$ in *Drosophila* seeding models. (**a**) ECL measurement of insoluble $A\beta_{42}$ in flies aged 21 days. Levels were normalized to $A\beta_{42}$arctic only (error bars, s.e.m., n=3 independent biological replicates, one-way ANOVA (Dunnett's multiple comparisons test), *P=0.0253, **P=0.0016). (**b**) Levels of soluble $A\beta_{40}$ (black) and $A\beta_{42}$ (grey) were measured using ECL assays (error bars, s.e.m., n=3 independent biological replicates).