SUPPLEMENTARY MATERIAL

Supplementary Figures

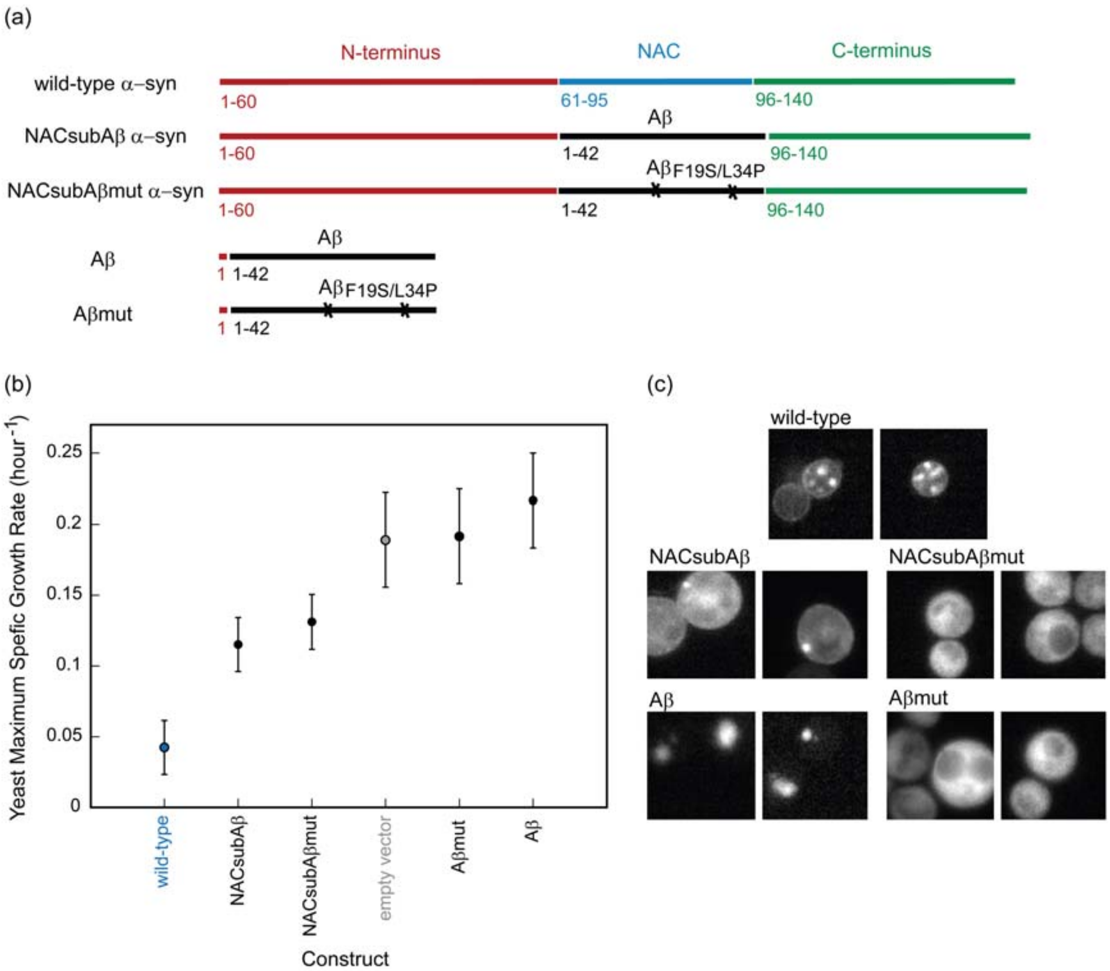

Figure 1. Properties of α-syn/Aβ$_{42}$ chimeras. (a) Schematic illustration of the sequences tested in yeast. The Aβ$_{42}$ F19S/L34P mutant does not aggregate, and was included as a control. (b) Both NACsubAβ and NACsubAβmut variants decreased α-syn toxicity. When expressed independently, neither Aβ nor Aβmut were toxic to yeast. (c) Microscopy of GFP-tagged proteins. NACsubAβ formed fewer aggregates than wild-type; NACsubAβmut was cytosolic. Aβ formed intracellular inclusions in yeast, whereas Aβmut remained dispersed throughout the cytoplasm.

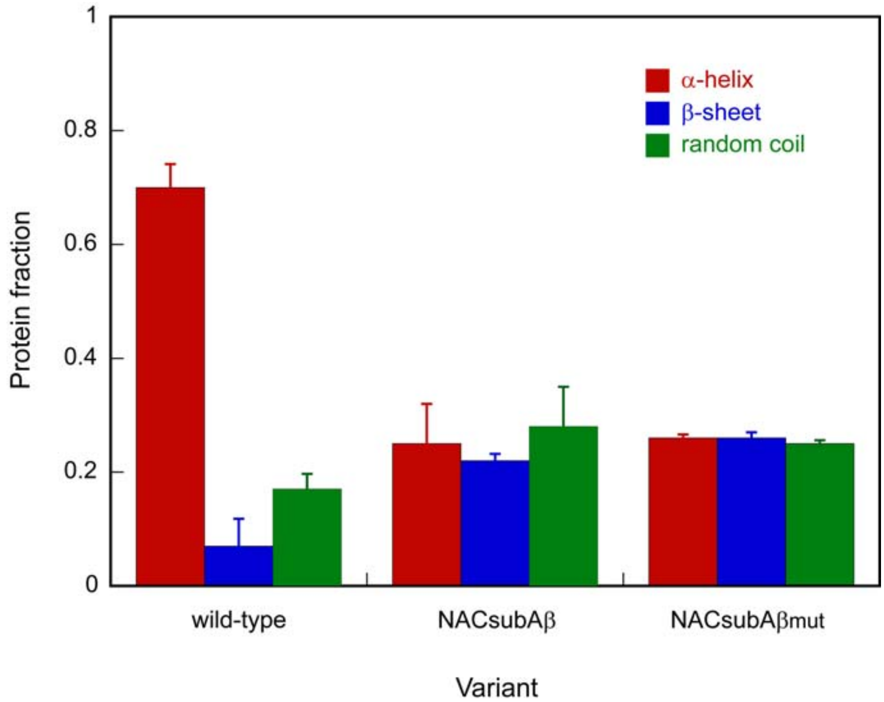

Figure 2. Structural content of wild-type α-syn, NACsubAβ and NACsubAβmut in 4% HFIP, determined by CD spectroscopy.

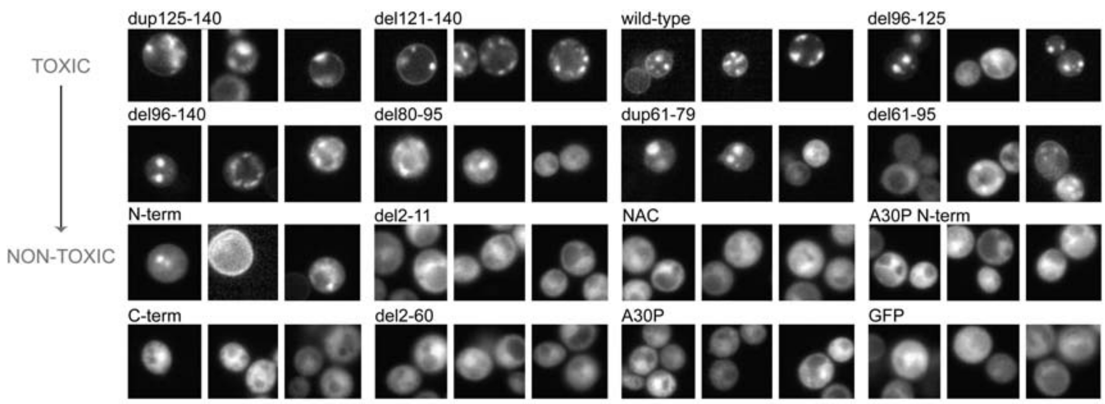

Figure 3. Microscopic images of GFP-tagged α-syn variants, arranged in order of decreasing yeast toxicity. Dup9-30 and del9-30 GFP fusions exhibited very weak fluorescence (data not shown), possibly attributable to GFP misfolding or cell lysis. The representative pictures shown were taken 48 h after induction of protein expression (growth in galactose media), using identical excitation intensity and exposure time.

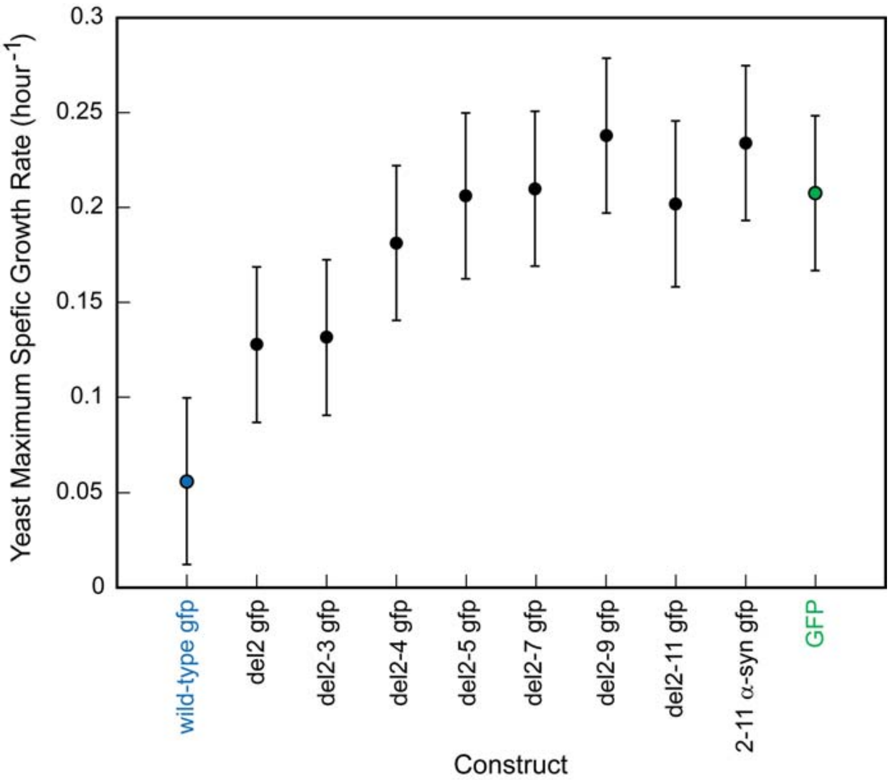

Figure 4. Yeast maximum specific growth rate of GFP-tagged α-syn variants, arranged in order of increasing deletion size. GFP was included as a control.

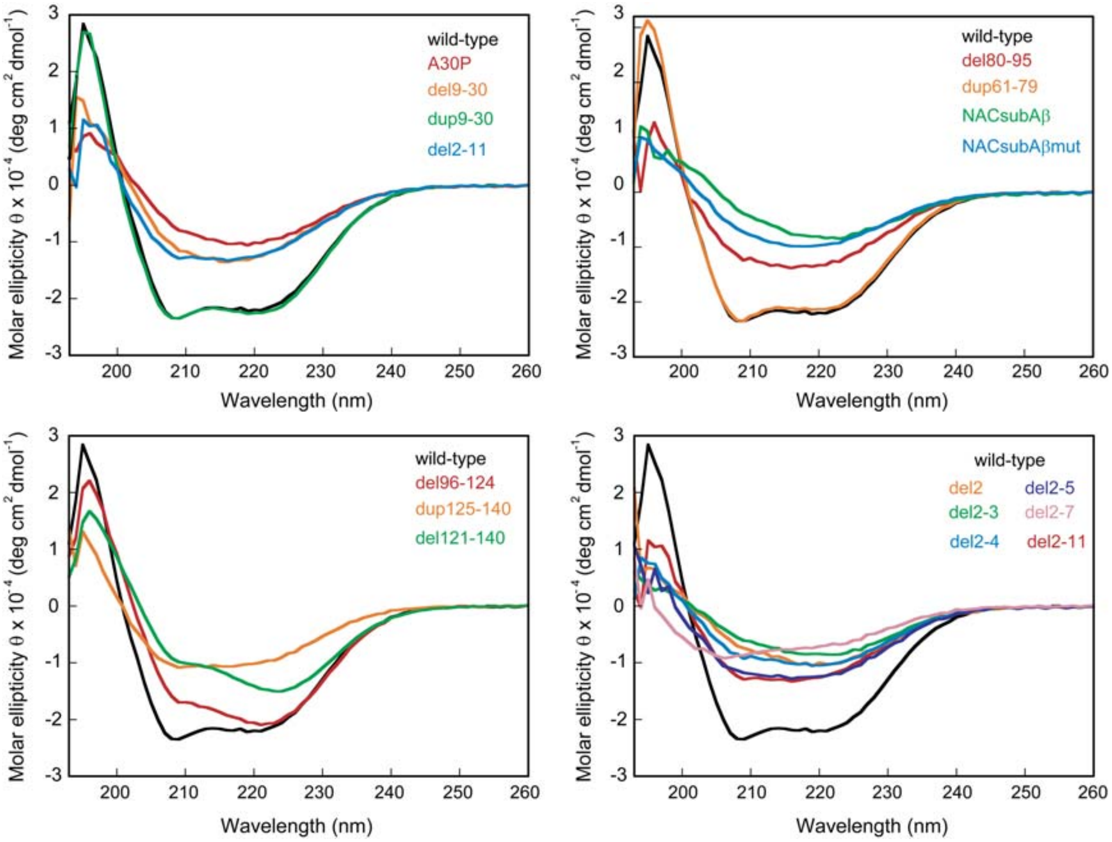

Figure 5. CD spectra of α-syn variants, in the presence of 4% HFIP.

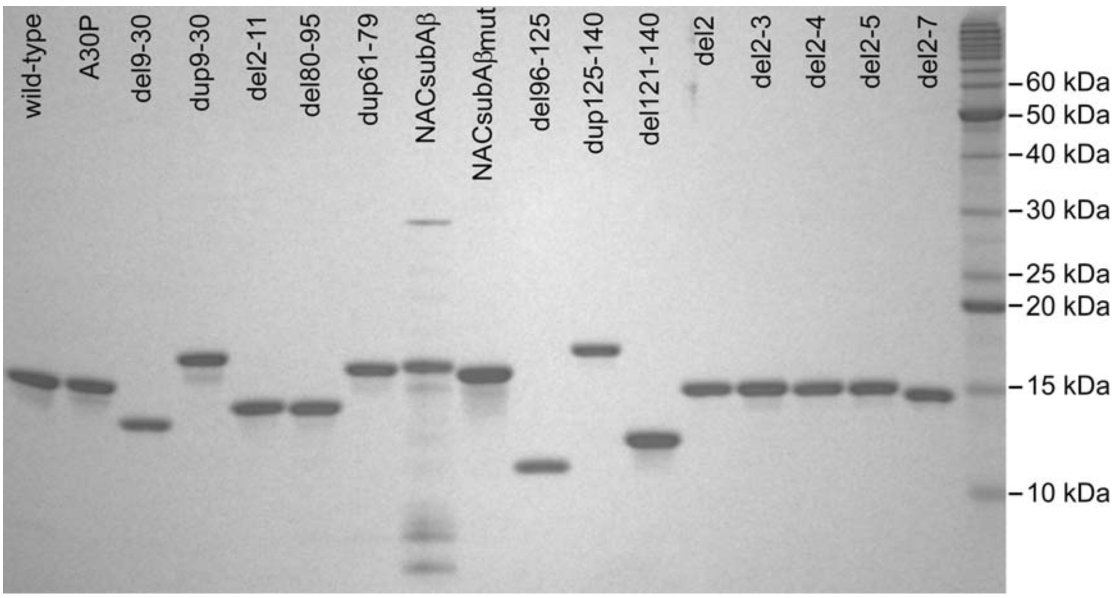

Figure 6. SDS PAGE gel of α-syn variants.

DNA sequences

wild-type α-syn, 420 bp

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AAAACCAAACAGGGTGTGGCAGAAGCAGCAGGAAAGACAAAAGAGGGTGTTCTCTATGT
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AAGCCTAA

dup9-30 α-syn, 486bp

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del9-30 α-syn, 354bp

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A

del2 α-syn, 417bp

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CCTAA

del2-3 α-syn, 414 bp

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CAAGAATGAAGAAGGAGCCCCACAGGAAGGAATTCTGGAAGATATGCCTGTGGATCCTG
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AA

del2-4 α-syn, 411bp

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AGAATGAAGAAGGAGCCCCACAGGAAGGAATTCTGGAAGATATGCCTGTGGATCCTGAC
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del2-5 α-syn, 408bp

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del2-7 α-syn, 402bp

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del2-9 α-syn, 396bp

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del2-11 α-syn, 390bp

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A30P α-syn, 420bp

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AAGCCTAA

del2-60 α-syn, 243bp

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N-term, 180bp

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AATAA

A30P N-term, 180bp

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AATAA

dup61-79 α-syn, 477 bp

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CCTAA

del80-95 α-syn, 372bp

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del61-95 α-syn, 315bp

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NAC, 108bp

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dup125-410 α-syn, 468bp

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del96-124 α-syn, 333bp

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del121-140 α-syn, 360 bp

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ATCCTTAA

del96-140 α-syn, 285bp

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C-term, 138bp

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NACsubAβ α-syn, 441bp

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NACsubAβ_{mut} α-syn, 441bp

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Aβ_{42}, 129bp

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TATCGCTTAA

Aβ_{mut}, 129bp

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TATCGCTTAA

Protein sequences

wild-type α-syn

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KEQVTNVGGAVVTGVTAVAQKTVEGAGSIAAATGFVKKDQLGKNEEGAPQEGILEDMPVDP
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dup9-30 α-syn

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del9-30 α-syn

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del2 α-syn

MVFMKGLSKAKEGVVAAAEKTKQGVAEAAGKTKEGVLYVGSKTKEGVVHGVATVAEKTK
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del2-3 α-syn

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del2-4 α-syn

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AYEMPSEEGYQDYEPEA

del2-5 α-syn

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del2-7 α-syn

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PSEEGYQDYEPEA

del2-11 α-syn

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GYQDYEPEA

A30P α-syn

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dup61-79 α-syn

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del80-95 α-syn

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YEPEA

dup125-410 α-syn

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KEQVTNVGGAVVTGVTAVAQKTVEGAGSIAAATGFVKKDQLGKNEEGAPQEGILEDMPVDP
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del96-124 α-syn

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del121-140 α-syn

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NACsubAβ α-syn

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NACsubAβ$_{mut}$ α-syn

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