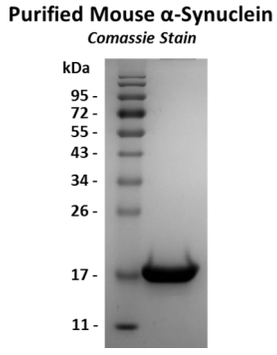
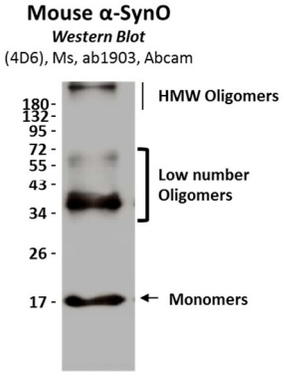
SynAging Product Sheet 5

In Vitro Neuroprotection Screen for Parkinson's Disease

SynAging uses proprietary mouse α-synuclein oligomer (αSO) and α-synuclein fibril (αSF) preparations to model Parkinson's disease in mouse primary striatal neurons.

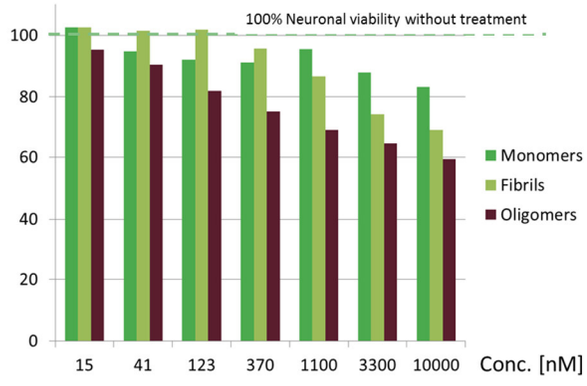
Mouse αSO and αSF are prepared from wild-type mouse α-synuclein expressed in *E. coli* and purified to homogeneity (>95%). Monomers were checked for the absence of toxicity.





αSO are the Most Toxic Form of α-Synuclein

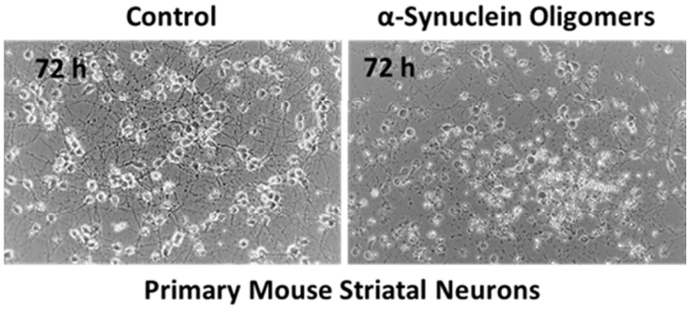
α-synuclein was added to primary mouse striatal neurons in the form of: monomers, fibrils and oligomers at various concentrations. Neuronal viability was measured after 72 h using the MTT assay. The exponential increase of the concentration shows that αSO (70% at 1.1 µM) are approximately~10 x more toxic than αSF (70% at 10 µM):



Neuronal Changes Induced by αSO

αSO induce time-dependent neurotoxicity in primary mouse neurons (DIV 11):

- severe cell shrinkage
- destruction of the neuronal network
- *phenotype different from AβO*
- *slower damage than AβO*

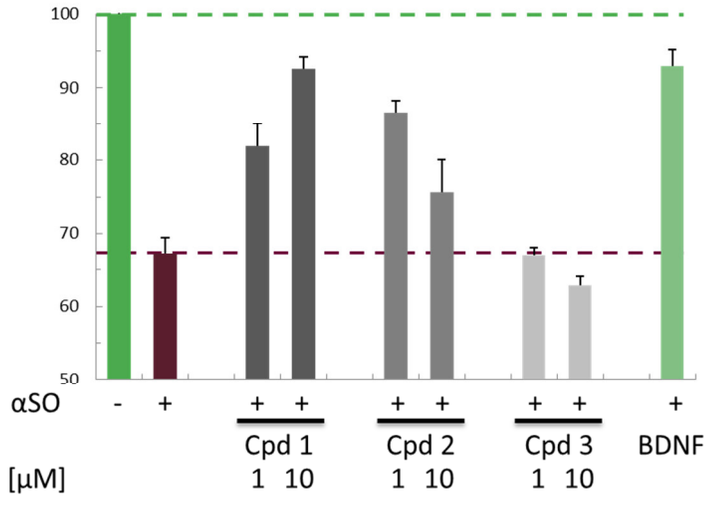


Assay Format for Neuroprotective Compounds

Mouse primary striatal neurons are sensitive to αSO and αSF. Grown in 48 well plates for 10 days, neurodegeneration is induced by 1 µM αSO or 10 µM αSF, resulting in ~40 % neuronal death within 72h. Test items and αSO or αSF are either mixed before application, or neurons are pre-incubated with test compounds before αSO addition. 72h after αSO treatment, cell viability is determined by MTT assay. All experiments are performed in triplicate and the following controls are on every multi well plate:

- vehicle
- αSO / αSF (negative control)
- BDNF (positive control)
- test item only, no αSO / αSF (compound control)

Study results are available within five weeks. Typical results are shown below:



SynAging SAS: *Your partner in naturally induced phenotypic models, accelerating drug discovery for proteopathic CNS diseases*

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Au coeur de la mémoire.

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