



**Supplementary table 3: Number of positive events per group. 1.5 h timepoint.**

Groups	OB ipsi	AON ipsi	AON contra	FC ipsi	FC contra	TT ipsi	OTu ipsi	PC ipsi	Am ipsi	Str ipsi
Monomers*	3/3	3/3	3/3	3/3	3/3	3/3	3/3	3/3	3/3	3/3
Oligomers*	3/3	3/3	3/3	3/3	3/3	3/3	1/3	3/3	2/3	2/3
Fibrils	4/4	0/4	0/4	0/4	0/4	0/4	0/4	0/4	0/4	0/4
BSA	4/4	2/4 ant AON	0/4	0/4	0/4	0/4	0/4	0/4	0/4	0/4
ATTO-550										
Untagged monomers	4/4	4/4	4/4	4/4	3/4	4/4	4/4	4/4	2/4	3/4

**Supplementary table 4: Number of positive events per group. 3 h timepoint.**

Groups	OB ipsi	AON ipsi	AON contra	FC ipsi	FC contra	TT ipsi	OTu ipsi	PC ipsi	Am ipsi	Str ipsi
Monomers*	3/3	3/3	1/3	3/3	0/3	2/3	3/3	3/3	0/3	0/3
Oligomers*	3/3	3/3	0/3	2/3	0/3	2/3	1/3	3/3	0/3	0/3
Fibrils	4/4	0/4	0/4	0/4	0/4	0/4	0/4	0/4	0/4	0/4
BSA	4/4	2/4 ant AON	0/4	0/4	0/4	0/4	0/4	0/4	0/4	0/4
ATTO-550	0/3	0/3	0/3	0/3	0/3	0/3	0/3	0/3	0/3	0/3

**Supplementary table 5: Number of positive events per group. Controls 3 h timepoint.**

Monomers injected	Injection site	OB ipsi	AON ipsi	FC ipsi	TT ipsi	OTu ipsi	PC ipsi	Am ipsi	Str ipsi
In LV	Around inj site: 3/3	0/3	0/3	0/3	0/3	0/3	0/3	0/3	0/3
In subarac. space	OB under inj site: 3/3	0/3	0/3	0/3	0/3	0/3	0/3	0/3	0/3

**Supplementary table 6: Number of positive events per group. 12 h timepoint.**

Groups	OB ipsi	AON ipsi	AON contra	FC ipsi	FC contra	TT ipsi	OTu ipsi	PC ipsi	Am ipsi	Str ipsi
Monomers	4/4	1/4	0/4	3/4	0/4	0/4	0/4	0/4	0/4	0/4
Oligomers	4/4	4/4	0/4	4/4	0/4	0/4	0/4	0/4	0/4	0/4
Fibrils	4/4	2/4	1/4	4/4	1/4	0/4	0/4	0/4	0/4	0/4
BSA	4/4	0/4	0/4	0/4	0/4	0/4	0/4	0/4	0/4	0/4
ATTO-550										

**Supplementary table 7: Number of positive events per group. 72 h timepoint.**

Groups	OB ipsi	AON ipsi	AON contra	FC ipsi	FC contra	TT ipsi	OTu ipsi	PC ipsi	Am ipsi	Str ipsi
Monomers	4/4	3/4	0/4	3/4	0/4	0/4	0/4	0/4	0/4	0/4
Oligomers	4/4	4/4	0/4	4/4	0/4	0/4	0/4	0/4	0/4	0/4
Fibrils	4/4	3/4	1/4	4/4	0/4	0/4	0/4	0/4	0/4	0/4
BSA	0/4	0/4	0/4	0/4	0/4	0/4	0/4	0/4	0/4	0/4
ATTO-550	0/3	0/3	0/3	0/3	0/3	0/3	0/3	0/3	0/3	0/3

**Supplementary table 2-7: Number of positive events per group.**

Each fraction represents the proportion of mice exhibiting hu $\alpha$ -syn-positive cells in the named structure (ipsi: ipsilateral; Contra: contralateral) after injections of t $\alpha$ -syn or ATTO-500, or untagged  $\alpha$ -syn, or exhibiting a positive extracellular staining for BSA after tBSA injection, out of the total number of animals in each group. In the groups marked with an asterisk in the tables, one animal out of four was excluded due to technical issues.

Suppl table 5: Controls: 3 h after injection of monomers into the lateral ventricle or into the subarachnoid space.