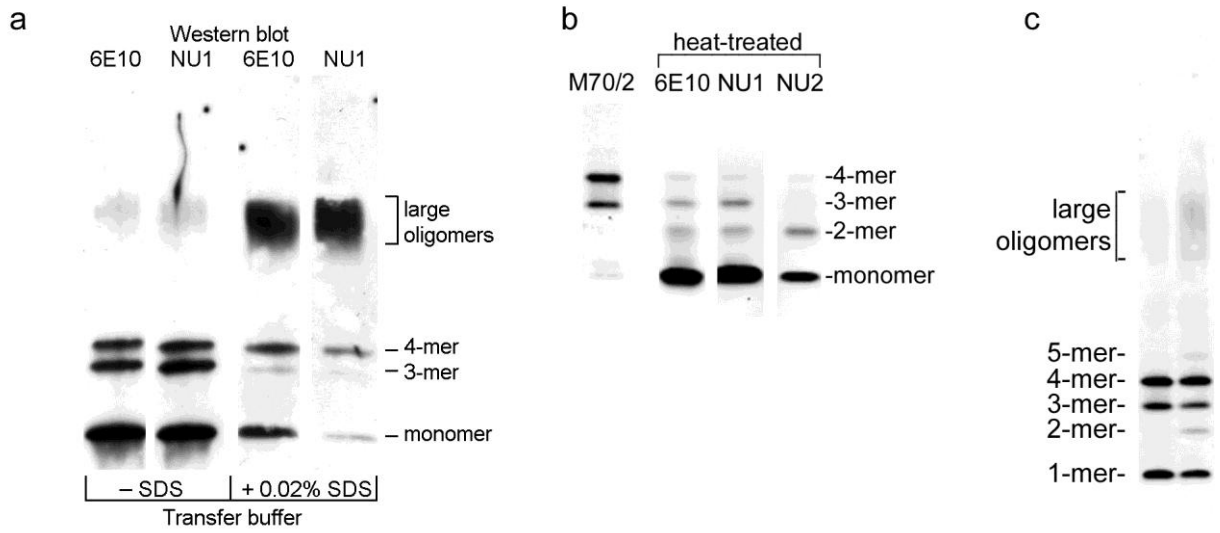
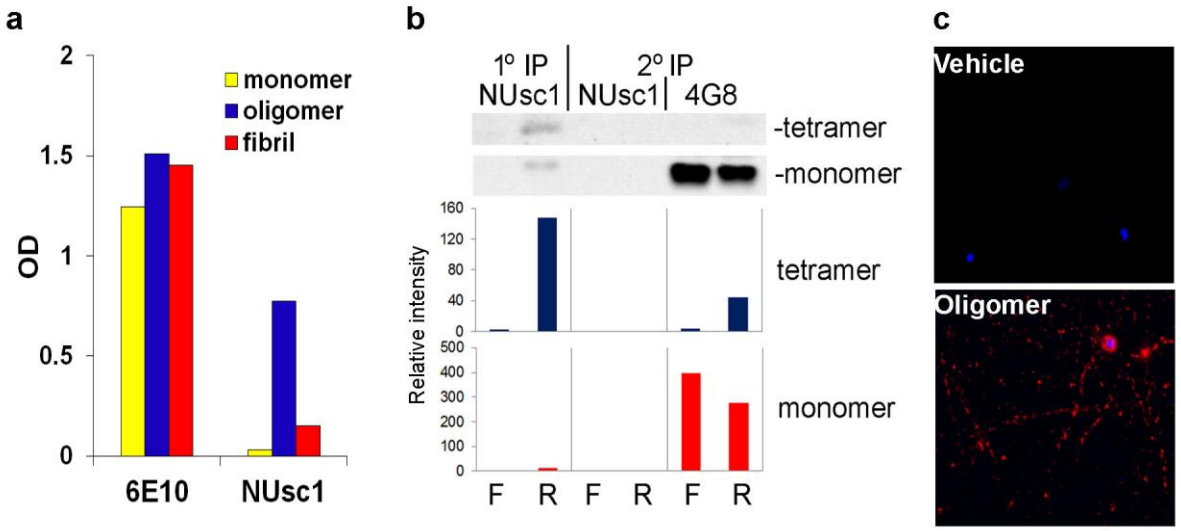
SUPPORTING INFORMATION



Supplemental Figure 1: Differences in Western blot processing affect immunolabeling of Aβ monomer band by some antibodies. Aβ1-42 oligomers, prepared at 100 μM peptide, were subjected to SDS-PAGE. *Panel a*: Gels were electroblotted to nitrocellulose with 25 mM Tris, 192 mM glycine, and 20% methanol in the absence (left two lanes) or presence (right two lanes) of 0.02% SDS, followed by immunostaining with 6E10 or NU1. *Panel b*: Following gel transfer to nitrocellulose with SDS-containing transfer buffer, lanes 2-4 were heat-treated in PBS at 100°C for 5 min, and immunostained with 6E10, NU1 or NU2. Lane 1 was not heat-treated prior to immunostaining with M70/2. *Panel c*: The gel of fresh (left) and 2-week old oligomers (right) was transferred to PVDF with SDS-containing transfer buffer and immunostained with NU1.



Supplemental Figure 2: Novel scFv antibody (NUsc1) binds a small subset of the high MW oligomers. *Panel a*: 6E10 and NUsc1 were compared for binding to monomer (Aβ1-40), oligomer (Aβ1-42) or fibril (Aβ1-42) preparations by ELISA. *Panel b*: NUsc1 immobilized on magnetic Dynabeads was used to immunoprecipitate oligomers from small (F; <50kDa) and large (R; >50kDa) Aβ1-42 preparations. The unbound fractions were subjected to a secondary immunoprecipitation with either NUsc1 or 4G8. Bound oligomers were eluted and analyzed by SDS-PAGE Western blot with NU2 for tetramer or on a heat-treated blot with NU1 for monomer. *Panel c*: Synaptic binding (red), detected by NUsc1, was specific for Aβ1-42 oligomer-treated hippocampal neurons.