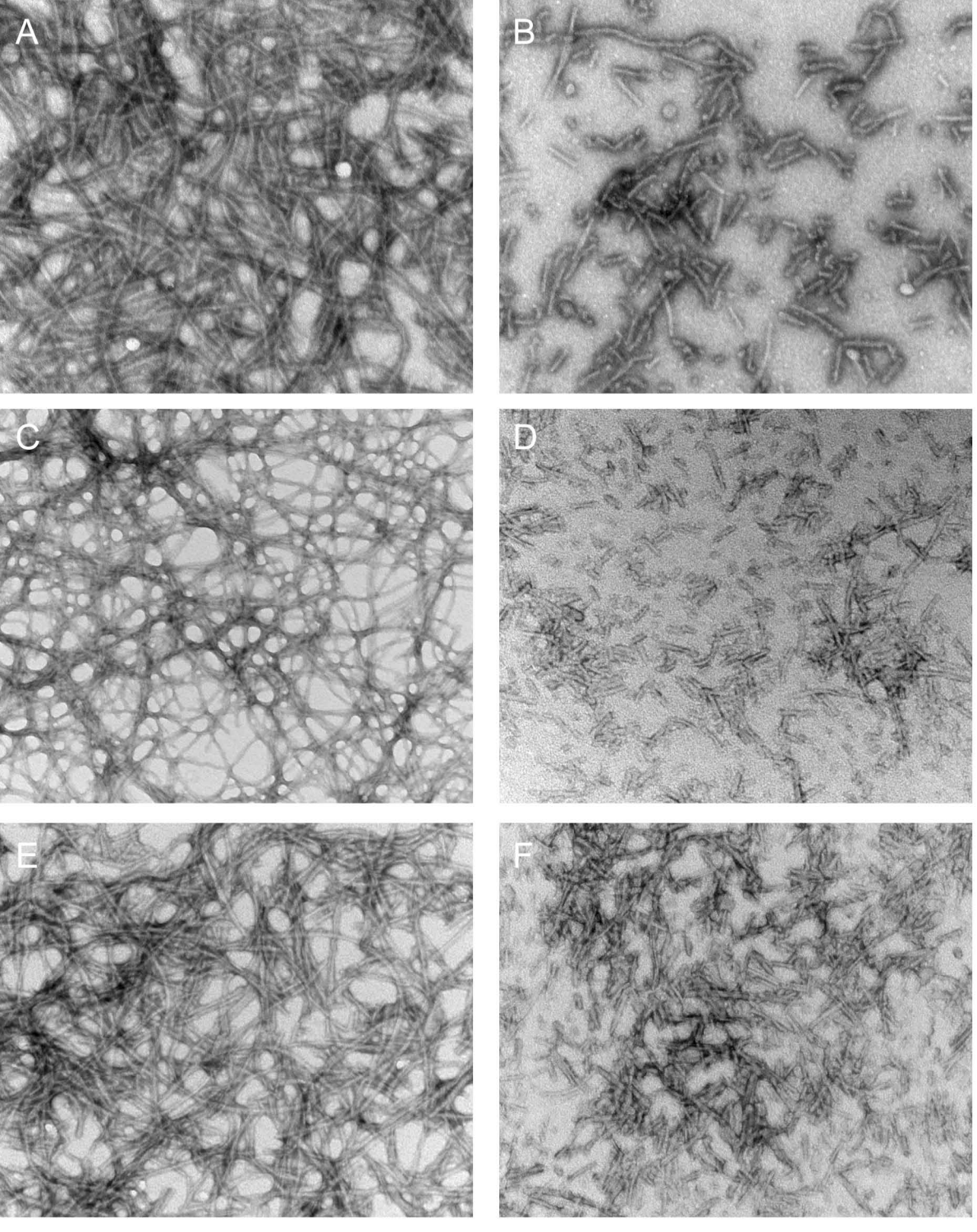
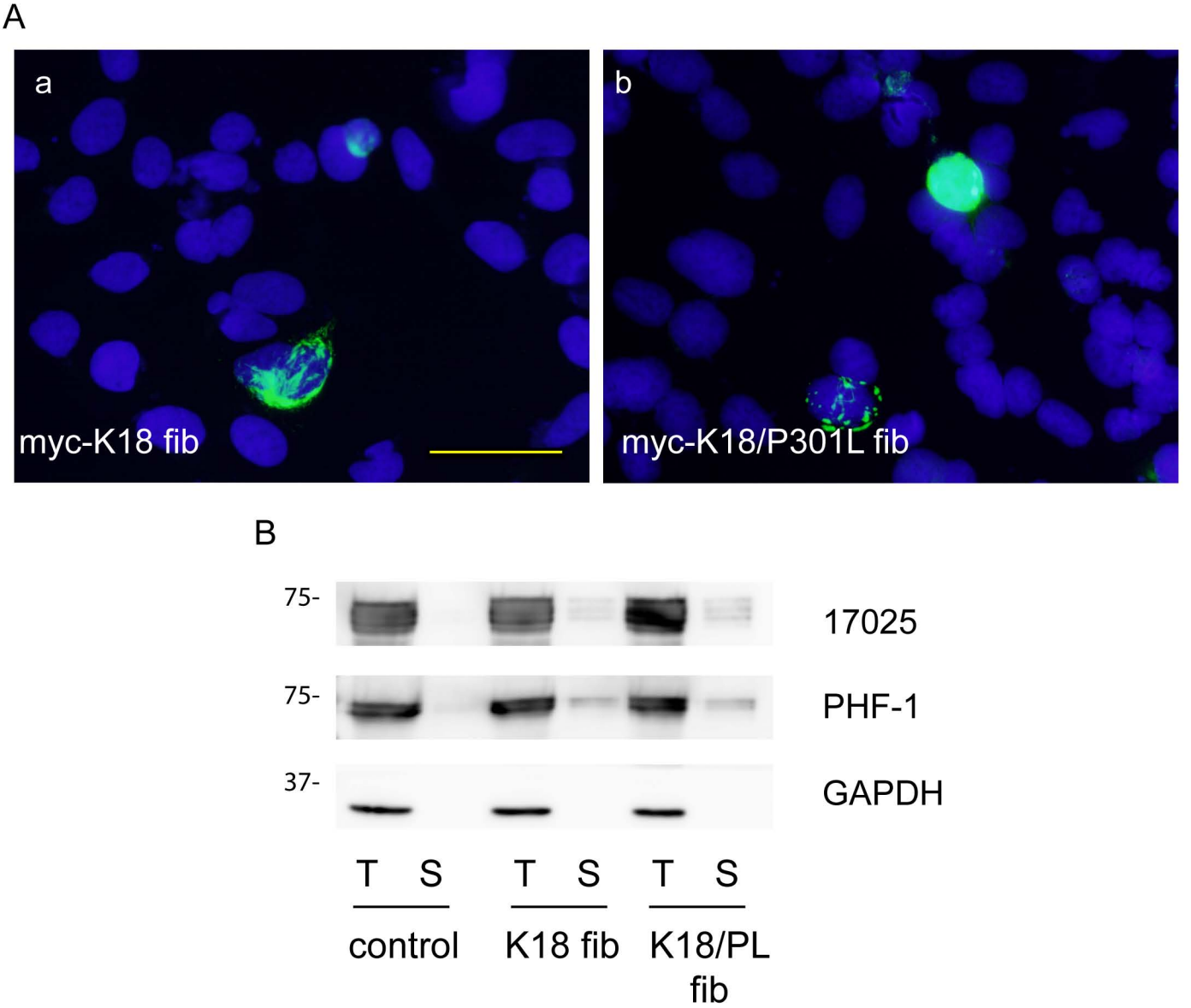
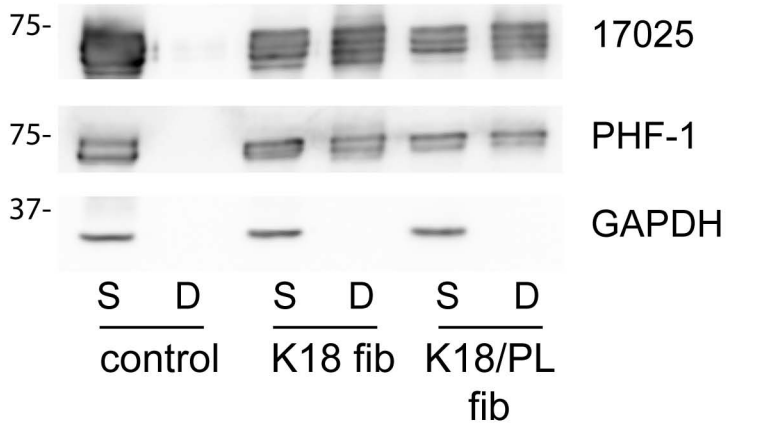


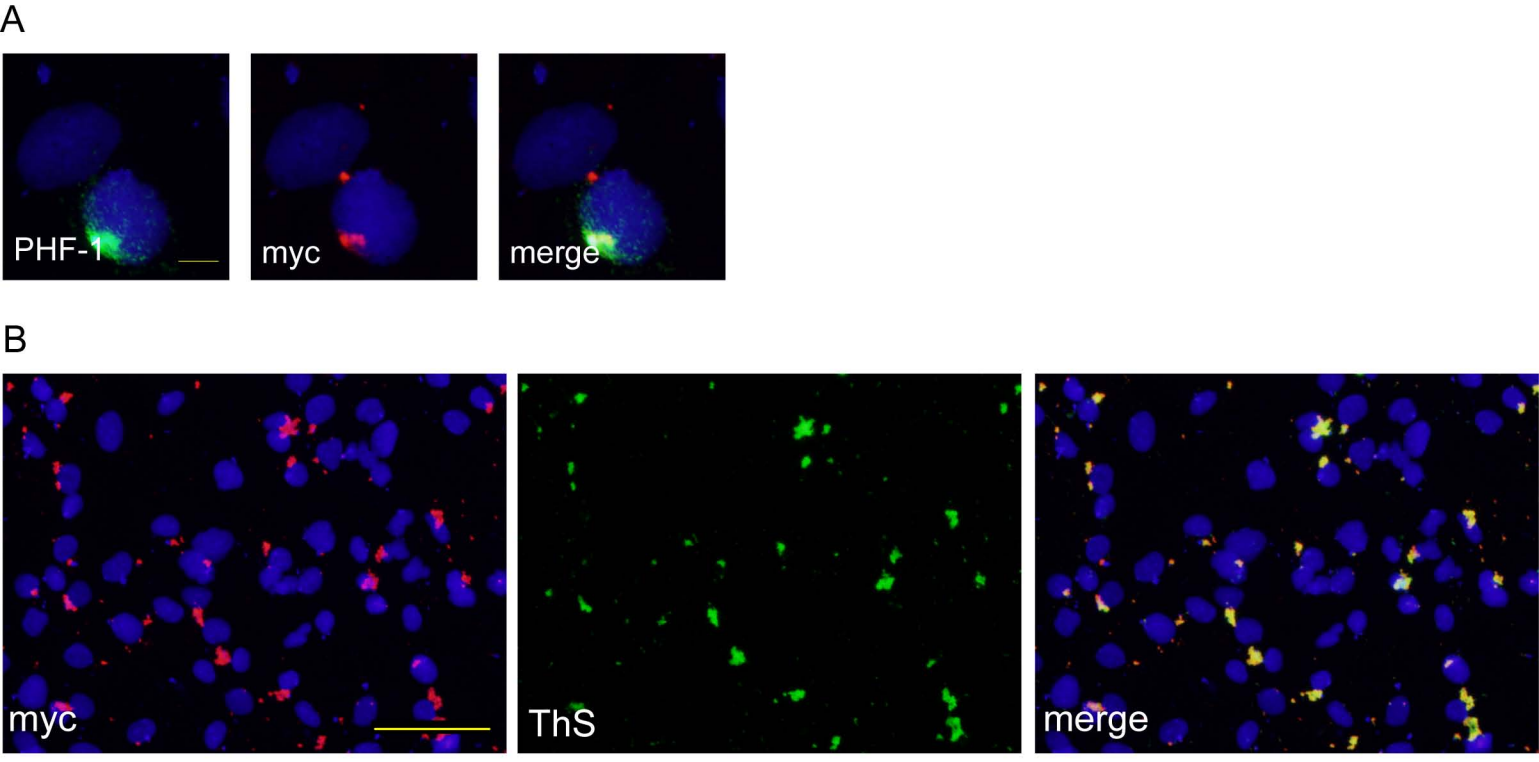
Supplementary figure 1. Negative stained transmission electron microscopy of preformed fibrils composed of recombinant myc-T40 (**A** and **B**), myc-K18 (**C** and **D**), or myc-K18/P301L (**E** and **F**). (**A**), (**C**) and (**E**) show unsonicated fibril preparation; (**B**), (**D**) and (**F**) show sonicated fibrils used for transduction experiments. Magnification: 100,000x. Scale bar: 200 nm.



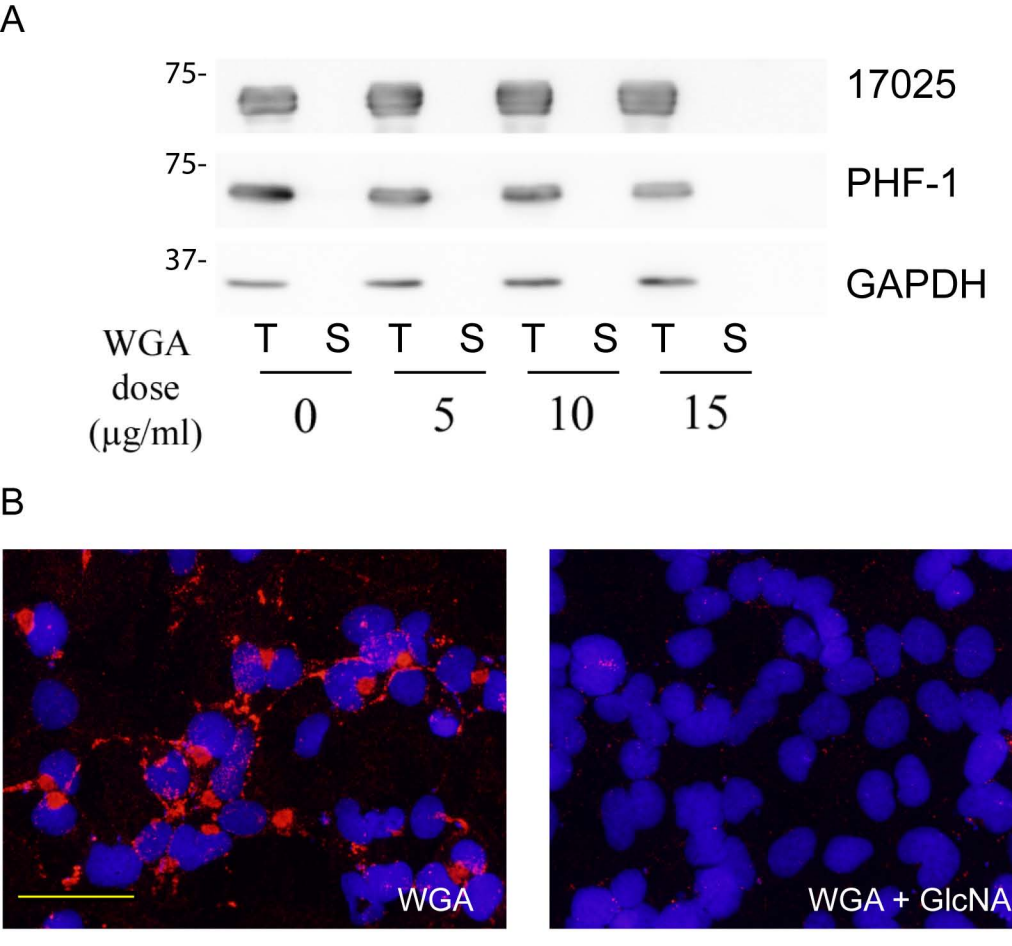
Supplementary figure 2. (**A**). Triton-insoluble tau aggregates in wtT40-transfected cells with myc-K18 (**a**) or myc-K18/P301L (**b**) fibril transduction. Green: PHF-1 staining with soluble proteins removed by 1% Triton-X100 during fixing. (**B**). Small amount of Triton-insoluble tau could be detected on western blot with both myc-K18 and myc-K18/P301L pff transduction (K18 fib and K18/PL fib respectively). T: cellular fraction recovered in 1% Triton-X lysis buffer. S: Triton-insoluble fraction solubilized in 1% SDS lysis buffer. Equal proportions of Triton and SDS fractions were loaded on SDS-PAGE gels. Magnification: 40x. Scale bar: 50 μm.



Supplementary figure 3. Cells transfected with T40/P301L and treated with transduction reagent alone (control) or transduced with myc-K18 or myc-K18/P301L fibrils (K18 fib and K18/PL fib respectively) with reagent were sequentially extracted with 1% Sarkosyl lysis buffer (S) followed by 1% SDS lysis buffer (D). Immunoblotting using polyclonal tau Ab 17025 and mAb phospho-tau Ab PHF-1 showed abundant Sarkosyl-insoluble tau induced by pff transduction. Equal proportions of Sarkosyl and SDS fractions were loaded on SDS-PAGE gels.



Supplementary figure 4. (**A**). One hour after the addition of myc-K18/P301L fibril/BioPORTER reagent complex to T40/P301L-transfected cells, a few rare cells showed local accumulation of insoluble tau (PHF-1) colocalizing with exogenous pffs (myc). (**B**). Up to t = 3 hr after fibril addition, ThS staining entirely overlapped with pff staining (myc). 1% Triton-X100 was added during fixing to remove soluble proteins. Magnification: 40x for (**A**); 20x for (**B**). Scale bar: 10 µm in (**A**); 100 µm in (**B**).



Supplementary figure 5. (**A**). Cells transiently transfected with T40/P301L mutant tau were treated with different doses of WGA. WGA did not dose-dependently increase the expression level of tau and there was no accumulation of Triton-insoluble tau without fibril transduction. T: 1% Triton-X fraction; S: 1% SDS fraction. Equal proportions of Triton and SDS fractions were loaded on SDS-PAGE. (**B**). Enhanced cellular association with pffs induced by WGA was blocked by GlcNAc treatment. Red: Pffs recognized by polyclonal anti-myc Ab. Magnification: 40x. Scale bar: 50 μm.

Supplementary Table I. Antibodies used in the study

Antibody	Antigen	Host species	Dilution	Source/Reference
17025	Human recombinant tau	rabbit polyclonal	1:1000 (WB, ICC)	68
PHF-1	p-Tau (phosphorylated at Ser 396 and 404)	mouse monoclonal	1:1000 (WB, immuno-EM); 1:2000 (ICC)	69
AT8	p-Tau (phosphorylated at Ser 202)	mouse monoclonal	1:500 (ICC)	Innogenetics
MC-1	Tau in the pathological conformation	mouse monoclonal	1:500 (ICC)	Gift from Dr. Peter Davies Lab
Tau 5	Tau (210-230aa)	mouse monoclonal	5ug/ml as capture antibody in tau ELISA; 6ug for immunoprecipitating tau from ~100ug protein	Gift from Dr. Lester Binder Lab
biotinylated BT2	Tau (194-198aa)	mouse monoclonal	125ng/ml as reporting antibody in tau ELISA together with HT7	Pierce (Thermo Scientific)
biotinylated HT7	Tau (159-163aa)	mouse monoclonal	125ng/ml as reporting antibody in tau ELISA together with BT2	Pierce (Thermo Scientific)
T46	Tau (404-441aa)	mouse monoclonal	11ug for immunoprecipitating tau from ~100ug protein	70
myc 9E10	myc tag	mouse monoclonal	1:1000 (WB, ICC)	Developmental Studies Hybridoma Bank (DSHB)
Anti-c-myc	c-myc tag	rabbit polyclonal	1:5000 (regular ICC); 1:1000 (live staining)	Sigma
GAPDH (6C5)	Glyceraldehyde-3-phosphate dehydrogenase	mouse monoclonal	1:3000 (WB)	Advanced Immunochemical
12G10	tubulin	mouse monoclonal	10ug/ml as capture antibody in Ace-tub ELISA	DSHB
Acetylated tubulin (6-11 B-1)	Acetylated-tubulin	mouse monoclonal	1:4000 (ELISA); 1:1000 (ICC)	Sigma