Supplemental Table 1

Human Brain samples were obtained from the University of California, Irvine and were gifts from Dr. Hyman Schipper of Lady Davis Institute, Montreal.

Sample	Age (yr)	Sex	Pathology	PMI (hr)
AD1	78	Female	AD	16
AD2	82	Female	AD	6.3
AD3	77	Female	AD	4.0
AD4	87	Male	AD	24
AD5	79	Male	AD	12
AD6	78	Female	AD	9.5
AD7	80	Female	AD	7.5
N1	88	Female	Normal	27.5
N2	74	Female	Normal	24
N3	83	Male	Normal	10
N4	78	Female	Normal	7.5
N5	85	Female	Normal	9.5
N6	79	Female	Normal	8.5
N7	78	Female	Normal	12

SUPPLEMENTAL FIGURE LEGEND

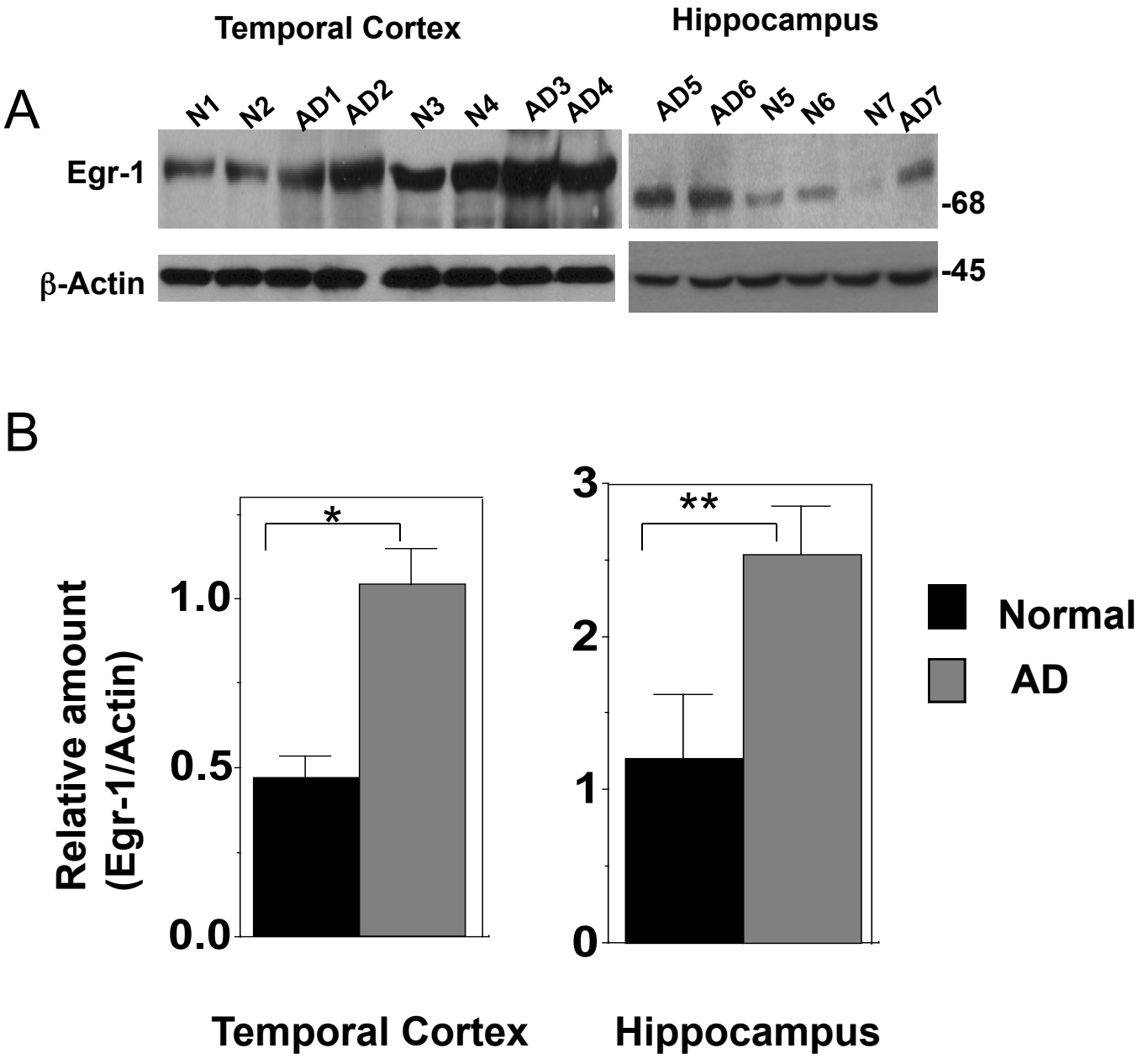
FIGURE S1. **Egr-1 protein level is elevated in AD brain.** Indicated AD (AD1 – AD7) and normal control (N1 – N7) brain samples (see supplemental Table 1 for detail) were individually homogenized and Western blotted using anti-Egr-1 or β-actin antibody. *A*, Western blot. *B*, Relative amount of Egr-1 protein determined from Western blots by normalizing the Egr-1 band intensity value of each sample against the respective β-actin band intensity value (mean ± S.E., n = 4 (temporal cortex), 3 (hippocampus). $*p < 0.05$; $**p < 0.01$ (t-test).

FIGURE S2. **Cdk5 does not phosphorylate tau at Ser^{262} *in vitro*.** Recombinant tau was phosphorylated by Cdk5 at 30 °C. At the indicated time points, aliquots were removed and analyzed via Western blotting using the indicated antibodies. A positive control for Ser^{262} phosphorylated tau was prepared by incubating recombinant tau with a fresh rat brain extract in the presence of ATP/Mg^{2+} at 30 °C for 2 hr.

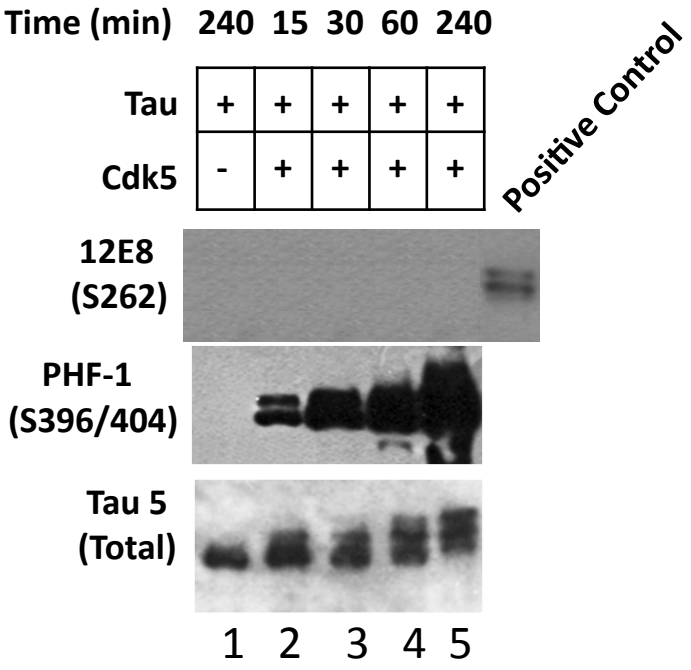
FIGURE S3. **Cdk5 phosphorylates PP1 in NGF-exposed PC12 cells.** PC12 cells were exposed to NGF for the indicated time points. On day 5 of NGF exposure, cells were treated with olomoucine or vehicle for 1 hr and then analyzed via Western blotting using the indicated antibodies.

FIGURE S4. **PP1 dephosphorylates Ser^{262} phosphorylated tau *in vitro*.** Recombinant tau, previously phosphorylated by kinases of rat brain extract was incubated with recombinant PP1. After 60 min, samples were analyzed via Western blotting using the indicated antibodies.

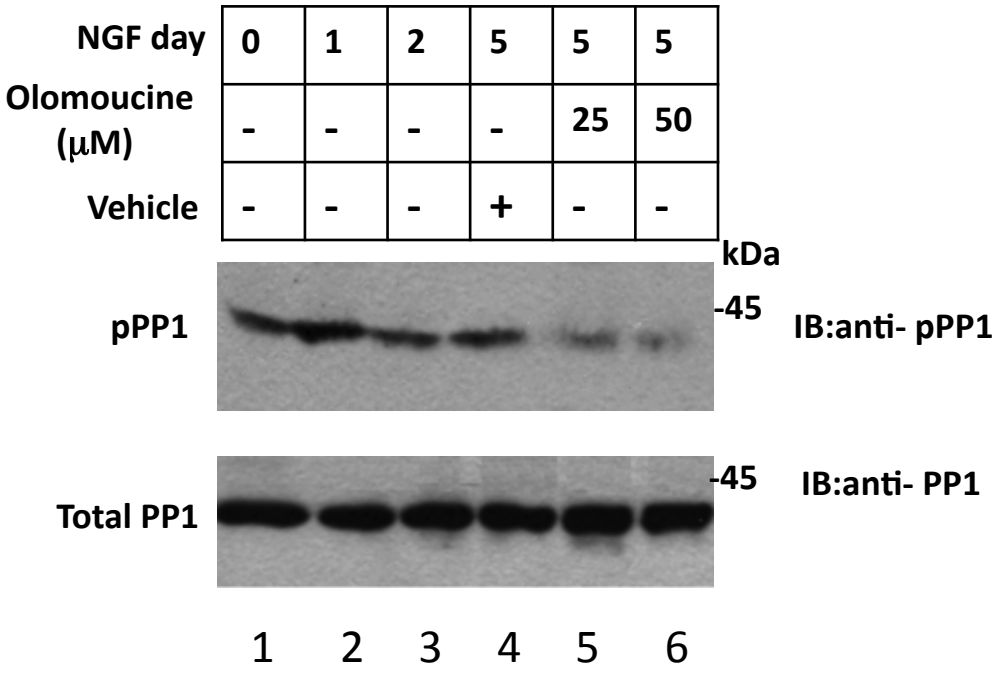
Supplemental Figure 1



Supplemental Figure 2



Supplemental Figure 3



Supplemental Figure 4