

Supplementary Materials

Table S1. cDNA library screening with yeast mating.

Mating yeast [plasmid]	Type of SD plate	Anticipated colony phenotype
Y2HGold [pGBKT7-53]×Y187 [pGADT7-T]	QDO/X/A	Blue
Y2HGold [pGBKT7-lam]×Y187 [pGADT7-T]	QDO/X/A	No colony

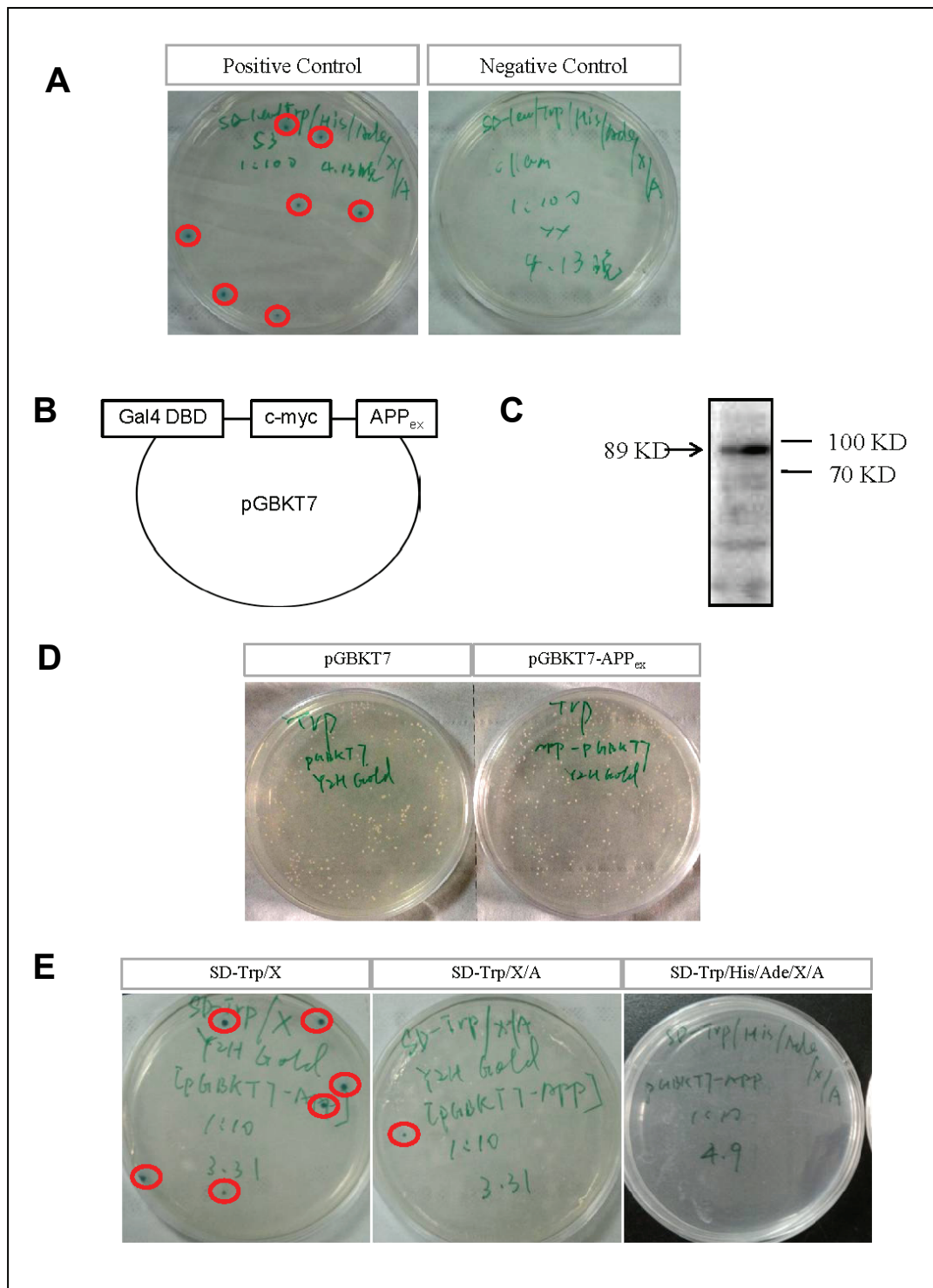


Figure S1. Control experiment, cloning and testing APP_{ex}-pGBKT7 for toxicity and autoactivation. (A) Control experiment. The red circles indicated the colonies.

(B) The structure of APP_{ex}-pGBKT7 bait clone. (C) Testing expression of

APP_{ex}-pGBKT7 in Y2HGold strain. (D) Testing toxicity of APP_{ex}-pGBKT7 in Y2HGold strain. (E) Testing autoactivation of APP_{ex}-pGBKT7 in Y2HGold strain on three kinds of plates. The red circles indicated the colonies.

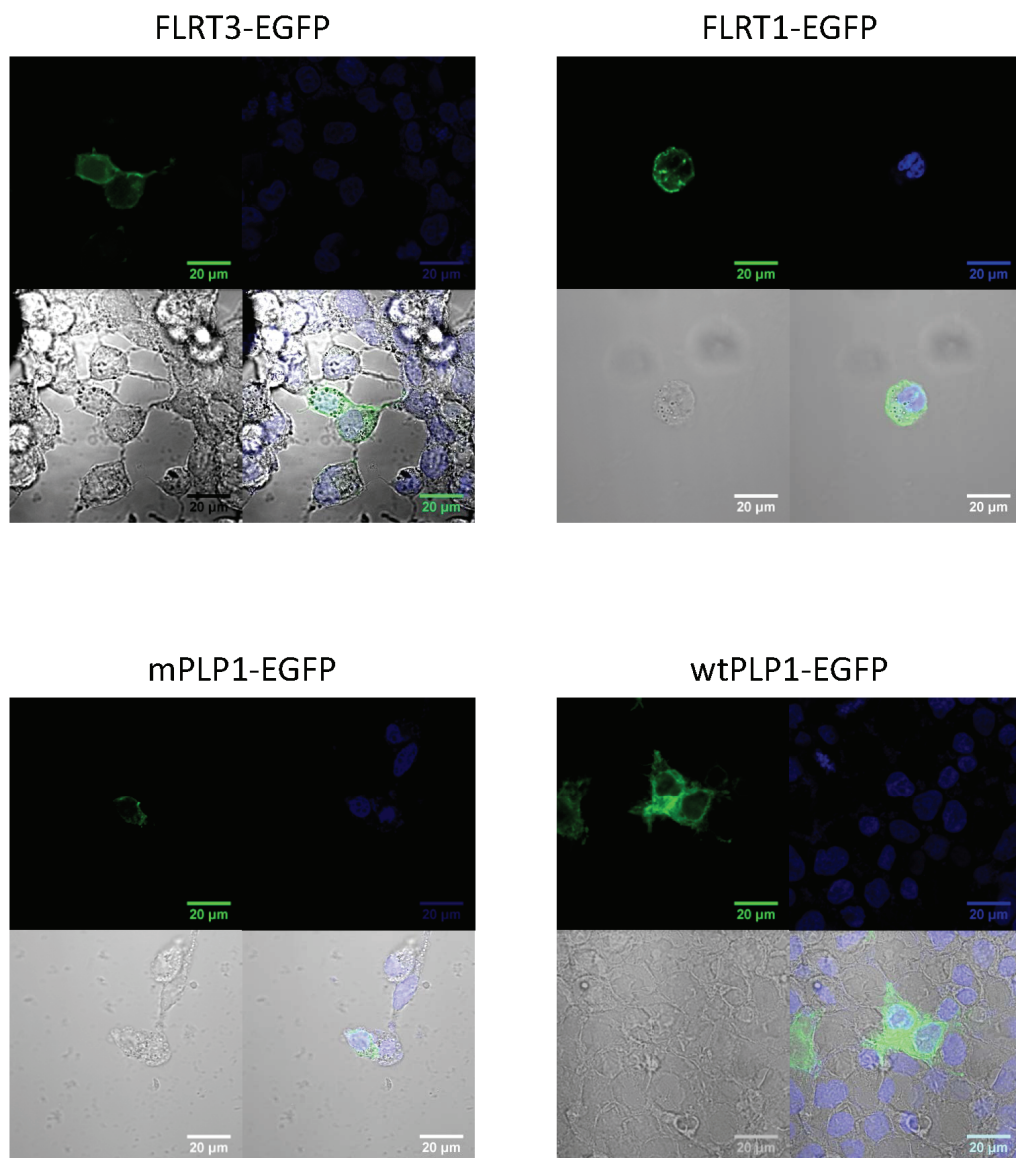


Figure S2. The localization of membrane proteins in HEK293T cells. HEK293T cells were transfected with FLRT3-EGFP, FLRT1-EGFP, mPLP1-EGFP and wtPLP1-EGFP and immunostained with DAPI.

IP: anti-c-myc (ecto-APP)
IB: anti-EGFP (ecto-PLP1)

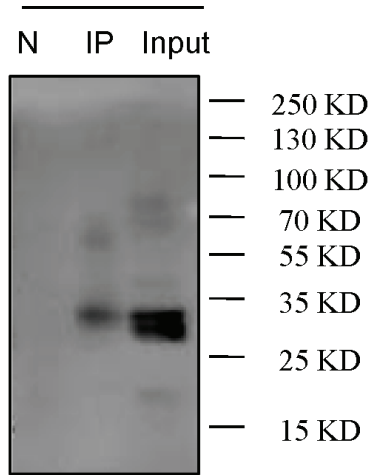


Figure S3. Co-immunoprecipitation of APP extracellular domain with mPLP1 extracellular domain in HEK293T cells. Cell lysates were immunoprecipitated with an anti-c-myc antibody for APP extracellular domain and probed with an anti-EGFP antibody for PLP1 extracellular domain (32 kD). N: negative control.

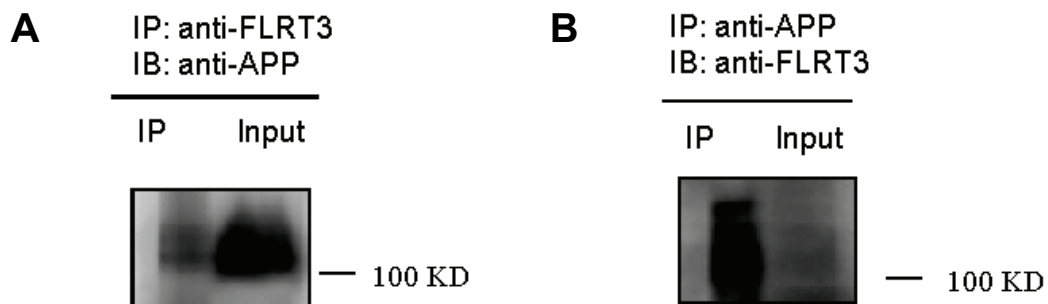


Figure S4. Co-immunoprecipitation of APP with mPLP1 in cell lysates from ICR mouse brain cortex. (A) Cell lysates from 10 weeks old ICR mouse brain cortex were immunoprecipitated with an FLRT3 antibody for FLRT3 and probed with an APP antibody for APP (about 100 kD). (B) Cell lysates from 10 weeks old ICR mouse

brain cortex were immunoprecipitated with an APP antibody for APP and probed with an FLRT3 antibody for FLRT3 (about 100 kD).

DNA sequence of screened products

PLP1: GTTCCAAATGACCTTCCACCTGTTTATTGCTGCATTTGTGGGGGCTG
CAGCTACACTGGTTTCCCTGCTCACCTTCATGATTGCTGCCACTTACAACCTT
TGCCGTCCTTAA

GPR137B: ATCCTGTCATTTTCTCAGAACAAGAGCGTCCATTCCCTTTGATTAT
GACCGGTACAATGTATCAGACCCGGCAGATTTGAAGAATCAGCTGGGAGAT
GCTGGATACGTATTATTTGGAGTGGTGTTATTTGTTAGGGAACTCTTACCTAC
CACCTTAGTCGTTTATTTCTTCCGAGTTAGAAATCCTACAAAGGACCTTACC
AACCTGGAATGGTCCCCAGCCATGGATTGAGTCCCAGATCTTATTTCTTTG
ACAACCCTCGAAGATATGACAGTGATGATGACCTTGCCTGGAACATTGCC
CTCAGGGACTTCAGGGAGGTTTTGCTCCAGATTACTATGATTGGGGACAAC
AACTAACAGCTTCCCTGGCACAAGCAGGAACCTTTGCAAGACTCAACTTTG
GATCCTGACAAACCAAGCCTTGGGTAG

FLRT3: CATTGTCAGCAAAGCTTTGAAAATAAAGGACTTCACAAAACGGT
AATGTAAATGTGCTTCCAAGTTGGGGGGAAAATGTGTACTTAGGAAAACAT
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