

Table S1: Statistical analyses

Experiment	Dataset 1 (mean+/- SEM)	Dataset 2 (mean+/- SEM)	p-value
Weight of 14 month old mice, wild-type vs null	38.07±1.950	45.59±2.464	0.025
Level of miR-455-3- across age 3 weeks vs 1 year	2.94x10 <sup>-6</sup> ±5.57x10 <sup>-7</sup>	1.04x10 <sup>-6</sup> ±3.30x10 <sup>-7</sup>	0.04
Novel object recognition, wild-type vs null	0.400±0.094	-0.0163±0.074	0.0038
Open field test, time in centre, wild-type vs null	8.450±1.613	4.814±1.087	0.09
Open field test, total distance travelled	77.25±8.081	74.03±5.795	NS
Luciferase activity, BACE1 UTR ± miR-455-3p	1.019±0.048	0.8023±0.030	0.008
Luciferase activity, BACE1 UTR mutant ± miR-455-3p	1.035±0.063	0.987±0.096	NS
Luciferase activity, TAU UTR ± miR-455-3p	20.901±0.017	1.711±0.055	0.0006
Luciferase activity, TAU UTR mutant ± miR-455-3p	2.175±0.055	2.294±0.246	NS
<i>APP</i> , SH-SY5Y cells, qRT-PCR, ± miR-455-3p	1.02x10 <sup>-4</sup> ±1.68x10 <sup>-5</sup>	6.40x10 <sup>-5</sup> ±5.93x10 <sup>-6</sup>	NS
<i>BACE1</i> , SH-SY5Y cells, qRT-PCR, ± miR-455-3p	3.31x10 <sup>-5</sup> ±2.94x10 <sup>-6</sup>	2.30x10 <sup>-5</sup> ±3.03x10 <sup>-6</sup>	NS (0.09)
<i>TAU</i> , SH-SY5Y cells. qRT-PCR, ± miR-455-3p	4.31x10 <sup>-5</sup> ±6.67x10 <sup>-6</sup>	2.72x10 <sup>-5</sup> ±2.82x10 <sup>-6</sup>	NS (0.09)
<i>APP</i> , hippocampus, qRT-PCR, WT vs null	9.66x10 <sup>-4</sup> ±6.20x10 <sup>-5</sup>	8.75x10 <sup>-4</sup> ±4.53x10 <sup>-5</sup>	NS
<i>BACE1</i> , hippocampus, qRT-PCR, WT vs null	2.94x10 <sup>-5</sup> ±2.50x10 <sup>-6</sup>	3.19x10 <sup>-5</sup> ±2.16x10 <sup>-6</sup>	NS
<i>TAU</i> , hippocampus, qRT-PCR, WT vs null	1.87x10 <sup>-4</sup> ±8.01x10 <sup>-5</sup>	2.26x10 <sup>-4</sup> ±1.37x10 <sup>-5</sup>	P=0.046
<i>APP</i> , hippocampus, western blot, WT vs null	1.087±0.176	2.544±0.049	0.0013
<i>BACE1</i> , hippocampus, western blot, WT vs null	0.694±0.105	1.016±0.039	0.0447
<i>TAU</i> , hippocampus, western blot, WT vs null	0.364±0.147	0.607±0.173	NS