



**Figure S1** Reads length distribution. Bar chart showing the total read counts against the lengths of the trimmed reads in APP group and WT group. WT, wild type.

**Table S1** The differentially expressed tiRNA & tRF—up regulated fragments

tRF_ID	Type	APP_CPM	WT_CPM	P value
tRF-Pro-TGG-003	tRF-5b	3.918208221	-0.430741915	0.031078587
tRF-Gly-GCC-025	tRF-3b	5.060777865	3.092198157	0.029301719
tRF-Val-AAC-018	tRF-5c	5.451686522	3.637713762	0.016623329
tRF-His-GTG-021	tRF-5c	6.396095478	4.799040814	0.002931633
tRF-His-GTG-022	tRF-5c	9.484129065	8.265494858	0.002471609
tRF-Val-AAC-011	tRF-5c	7.542456785	6.335793862	0.00953863
tRF-Gly-CCC-042	tRF-3b	7.474973415	6.293579682	0.007227524
tRF-Pro-AGG-012	tRF-5c	7.428967082	6.295278502	0.034281415
tRF-Val-AAC-015	tRF-5b	6.779608645	5.774095772	0.038952452
tRF-Val-AAC-030	tRF-5c	7.366170048	6.412679839	0.038987345
tRF-Thr-CGT-003	tRF-1	11.13168456	10.18116425	0.025793052
tiRNA-Val-CAC-004	tiRNA-5	10.73050923	9.858571219	0.040018543
tRF-Val-CAC-018	tRF-5c	8.667445792	7.816824878	0.040130588
tRF-His-GTG-023	tRF-5c	9.307673567	8.513180181	0.046638123

tRF-ID: the ID of tiRNA & tRF; type: the type of tiRNA & tRF; CPM: the average of log scaled CPM in APP/PS1 group and WT group. WT, wild type; CPM, counts per million.

**Table S2** The differentially expressed tiRNA & tRF—down regulated fragments

tRF_ID	Type	APP_CPM	WT_CPM	P value
tRF-Gln-CTG-043	tRF-1	-0.430741915	4.33025354	0.012796723
tRF-Val-TAC-031	tRF-5a	-0.430741915	4.163036266	0.012276542
tRF-Cys-GCA-057	tRF-3a	-0.430741915	4.078630202	0.024553934
tRF-Met-CAT-060	tRF-1	1.481813106	4.49786568	0.026757942
tRF-Gly-CCC-012	tRF-5a	2.245551794	4.56990653	0.049710281
tRF-Leu-AAG-005	tRF-5a	5.356161992	7.420782198	0.000118957
tRF-Val-TAC-010	tRF-5c	3.433140488	5.157205194	0.032538791
tRF-Leu-AAG-011	tRF-5a	4.384197918	5.845875259	0.015949521
tRF-Leu-CAA-004	tRF-5a	8.70846735	10.01239671	0.000603854
tRF-Ala-AGC-011	tRF-5a	5.658659869	6.82591079	0.018163377
tRF-Leu-TAG-011	tRF-5a	6.125724078	7.110868555	0.033044413
tRF-Ala-AGC-013	tRF-5a	7.223359012	8.167397183	0.02813504
tRF-Leu-TAG-015	tRF-2	6.444652493	7.306943219	0.047735452

tRF-ID: the ID of tiRNA & tRF; type: the type of tiRNA & tRF; CPM: the average of log scaled CPM in APP/PS1 group and WT group. WT, wild type; CPM, counts per million.