

Supplemental material

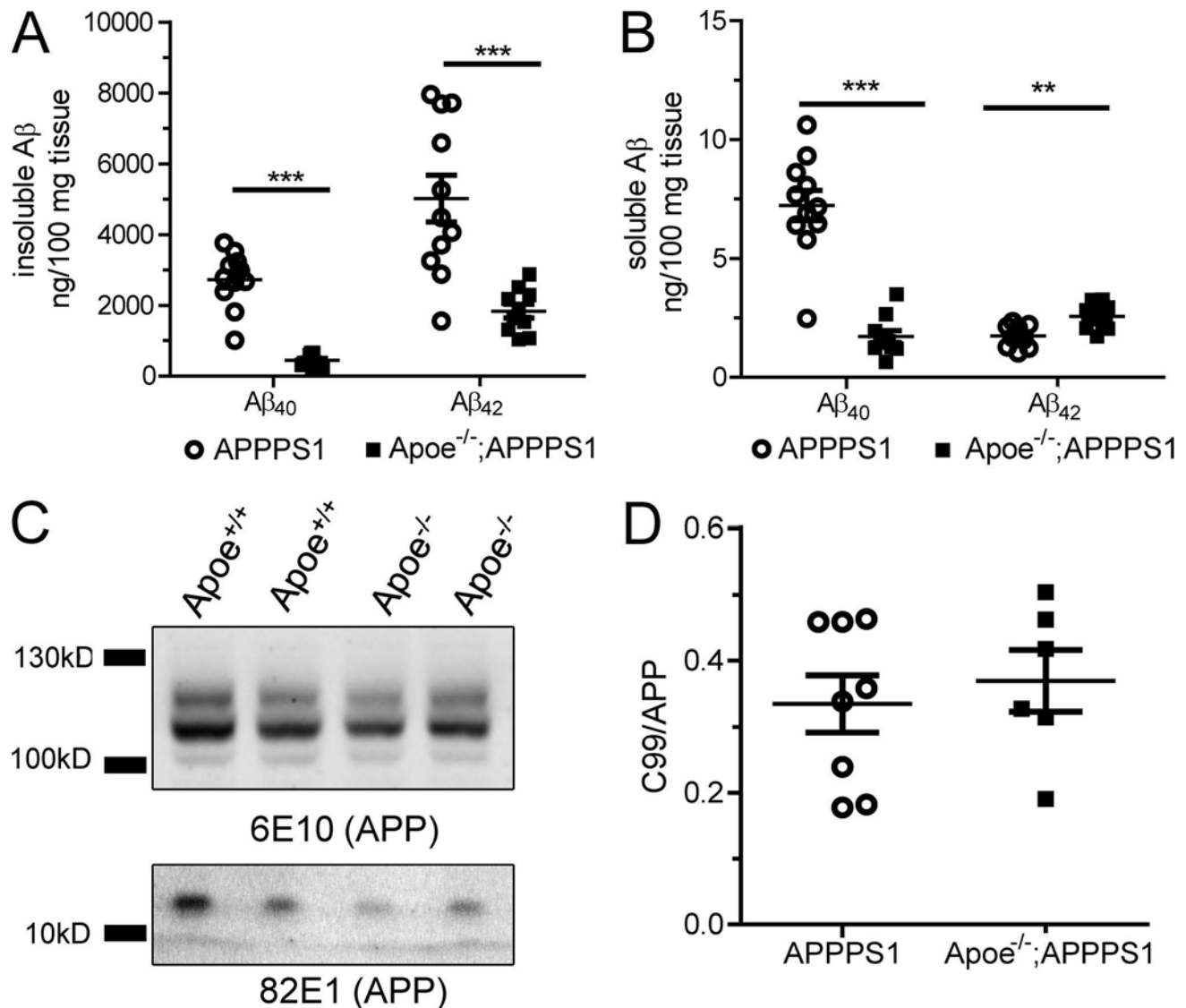
Ulrich et al., <https://doi.org/10.1084/jem.20171265>

Figure S1. **Reduced insoluble Aβ₄₀ and Aβ₄₂ in cortex of 6-mo-old ApoE^{-/-};APPPS1 mice.** (A) Significant decrease in the levels of insoluble Aβ₄₀ in ApoE^{-/-};APPPS1 (443 ± 55 ng/100 mg tissue, *n* = 10 mice) compared with APPPS1 (2724 ± 235 ng/100 mg tissue, *n* = 11 mice); *t*(19) = 9.04, *P* < 0.0001, Student's *t* test. Significant decrease in the levels of insoluble Aβ₄₂ in ApoE^{-/-};APPPS1 (1,831 ± 197 ng/100 mg tissue, *n* = 10 mice) compared with APPPS1 (5012 ± 662 ng/100 mg tissue, *n* = 11 mice); *t*(19) = 4.41, *P* = 0.0003, Student's *t* test. (B) Significant decrease in the level of soluble Aβ₄₀ in ApoE^{-/-};APPPS1 (1.71 ± 0.26 ng/100 mg tissue, *n* = 10 mice) compared with APPPS1 (7.23 ± 0.64, ng/100 mg tissue, *n* = 11 mice); *t*(19) = 7.7; *P* < 0.0001, Student's *t* test. Significant increase in the level of soluble Aβ₄₂ in ApoE^{-/-};APPPS1 (2.57 ± 0.17 ng/100 mg tissue, *n* = 10 mice) compared with APPPS1 (1.74 ± 0.13 ng/100 mg tissue, *n* = 11 mice); *t*(19) = 3.92, *P* = 0.0009, Student's *t* test. (C) Western blot of full length APP and C99 fragment. (D) No significant difference in the ratio of C99:APP in APPPS1 (0.33 ± 0.04, *n* = 8 mice) and ApoE^{-/-};APPPS1 (0.37 ± 0.05, *n* = 6 mice); *t*(12) = 0.54, *P* = 0.60, Student's *t* test. All data presented as mean ± SEM. **, *P* < 0.01; ***, *P* < 0.001.

Table S1. Differentially expressed genes (*Apoe*^{-/-};APPPS1 vs. APPPS1)

Gene symbol	P-value (<i>Apoe</i> ^{-/-} ;APPPS1 vs. APPPS1)	Mean ratio (<i>Apoe</i> ^{-/-} ;APPPS1 vs. APPPS1)	Fold change (<i>Apoe</i> ^{-/-} ;APPPS1 vs. APPPS1)
<i>Apoe</i>	1.45E-09	0.00936813	-106.745
<i>Gm29443</i>	1.67E-08	0.0139496	-71.6867
<i>Klrb1b</i>	2.31E-05	0.0591749	-16.8991
<i>C5ar2</i>	1.19E-10	0.0706574	-14.1528
<i>F630206G17Rik</i>	0.000105058	0.0769946	-12.9879
<i>Serpinb1c</i>	0.000527447	0.0776188	-12.8835
<i>Olfr111</i>	0.000485284	0.103808	-9.6332
<i>Capn11</i>	0.000277829	0.120636	-8.28939
<i>Cd300lb</i>	3.18E-05	0.162618	-6.1494
<i>Hcar2</i>	2.45E-06	0.164722	-6.07083
<i>Clec7a</i>	2.18E-08	0.170068	-5.88001
<i>Ccl3</i>	1.51E-05	0.179454	-5.57247
<i>Itgax</i>	4.18E-08	0.181084	-5.52229
<i>Ctse</i>	4.29E-06	0.181134	-5.52076
<i>Cst7</i>	3.79E-06	0.185807	-5.38192
<i>Rsph6a</i>	0.0011558	0.188238	-5.31241
<i>Casr</i>	0.000267734	0.19236	-5.19858
<i>Dcstamp</i>	4.89E-05	0.198062	-5.04892
<i>Gm10640</i>	4.73E-05	0.202846	-4.92985
<i>Asb10</i>	4.51E-05	0.204834	-4.88201
<i>Cd200r4</i>	7.15E-07	0.205679	-4.86194
<i>Gm1966</i>	4.60E-05	0.211419	-4.72995
<i>Ccl4</i>	0.000394315	0.217755	-4.59232
<i>Pdcd1</i>	4.26E-05	0.238249	-4.19729
<i>Ifi207</i>	2.98E-06	0.241942	-4.13323
<i>Trpm1</i>	5.77E-05	0.243168	-4.11239
<i>Bcl2a1d</i>	0.000919059	0.251312	-3.97911
<i>Lilrb4a</i>	2.21E-05	0.252877	-3.95449
<i>Olfr110</i>	3.25E-05	0.267189	-3.74267
<i>Wdfy1</i>	2.52E-06	0.267242	-3.74193
<i>Vmn2r29</i>	2.00E-08	0.269638	-3.70867
<i>Il4i1</i>	4.95E-06	0.286824	-3.48646
<i>Fgr</i>	0.000610017	0.289976	-3.44857
<i>Ckm</i>	0.000429166	0.300058	-3.33269
<i>Tnfsf8</i>	0.000857484	0.308552	-3.24095
<i>Ccl6</i>	1.10E-05	0.310598	-3.2196
<i>Milr1</i>	3.74E-05	0.331493	-3.01666
<i>Capg</i>	6.51E-06	0.333606	-2.99755
<i>Zfp109</i>	9.23E-06	0.336127	-2.97507
<i>Zfp526</i>	1.11E-06	0.338388	-2.95519
<i>Cd244</i>	9.46E-05	0.346464	-2.8863
<i>Cybb</i>	2.23E-05	0.350996	-2.84903
<i>Nudt19</i>	1.22E-11	0.352847	-2.83409
<i>Klc3</i>	4.64E-05	0.35509	-2.81619

Table S1. Differentially expressed genes (*Apoe*^{-/-};APPPS1 vs. APPPS1) (Continued)

Gene symbol	P-value (<i>Apoe</i> ^{-/-} ;APPPS1 vs. APPPS1)	Mean ratio (<i>Apoe</i> ^{-/-} ;APPPS1 vs. APPPS1)	Fold change (<i>Apoe</i> ^{-/-} ;APPPS1 vs. APPPS1)
<i>Ifi27l2a</i>	0.001346	0.355825	-2.81037
<i>St14</i>	4.94E-05	0.356676	-2.80366
<i>Slc11a1</i>	1.09E-07	0.361564	-2.76576
<i>Rab20</i>	0.000558388	0.364074	-2.74669
<i>Plau</i>	4.01E-05	0.381887	-2.61858
<i>Slc15a3</i>	2.10E-06	0.382724	-2.61285
<i>Gpr65</i>	0.000686206	0.386285	-2.58876
<i>Fam46c</i>	0.000319594	0.389127	-2.56985
<i>C5ar1</i>	1.38E-06	0.390509	-2.56076
<i>Ifi204</i>	0.000443434	0.396144	-2.52433
<i>Baiap2l2</i>	0.000250949	0.396545	-2.52178
<i>Tyrobp</i>	2.28E-06	0.404606	-2.47154
<i>Cytip</i>	0.00114051	0.404906	-2.46971
<i>Ly9</i>	0.000829186	0.40534	-2.46706
<i>Cd52</i>	7.32E-05	0.40658	-2.45954
<i>Gm11545</i>	0.00155987	0.410662	-2.43509
<i>Phf11b</i>	0.000340555	0.428899	-2.33155
<i>Dkk2</i>	3.25E-05	0.433765	-2.3054
<i>Irf7</i>	0.000970605	0.433785	-2.30529
<i>Plekhg2</i>	5.08E-06	0.434101	-2.30361
<i>Cxcr4</i>	0.00152951	0.438961	-2.27811
<i>Alox5</i>	4.10E-07	0.442308	-2.26087
<i>Cd68</i>	1.70E-06	0.443163	-2.25651
<i>Cd180</i>	0.000465971	0.444252	-2.25097
<i>Trem2</i>	5.85E-06	0.446902	-2.23763
<i>Oasl2</i>	0.000625574	0.452149	-2.21166
<i>Klhl6</i>	3.05E-06	0.453529	-2.20493
<i>Cd72</i>	0.000246711	0.45605	-2.19274
<i>Cxcl10</i>	0.00021066	0.456123	-2.19239
<i>Oas1a</i>	0.000282396	0.456584	-2.19018
<i>Irf8</i>	1.49E-05	0.458982	-2.17873
<i>Ercc2</i>	8.05E-06	0.462798	-2.16077
<i>Bcl2a1b</i>	0.000302187	0.463162	-2.15907
<i>Mamdc2</i>	0.00011696	0.464613	-2.15233
<i>Gfap</i>	7.24E-05	0.466347	-2.14432
<i>Itprp</i>	0.000910503	0.466775	-2.14236
<i>Ugt1a7c</i>	1.04E-05	0.469811	-2.12852
<i>A2m</i>	1.89E-05	0.475218	-2.1043
<i>Cd48</i>	0.000111875	0.477753	-2.09313
<i>Guca1a</i>	0.000856411	0.479897	-2.08378
<i>Trim30d</i>	0.000231087	0.480707	-2.08027
<i>Dll4</i>	0.00114197	0.481967	-2.07483
<i>Lat2</i>	2.48E-05	0.48198	-2.07477
<i>Gabra2</i>	0.000198554	0.487609	-2.05082

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Gene symbol	P-value (<i>Apoe</i> ^{-/-} ;APPPS1 vs. APPPS1)	Mean ratio (<i>Apoe</i> ^{-/-} ;APPPS1 vs. APPPS1)	Fold change (<i>Apoe</i> ^{-/-} ;APPPS1 vs. APPPS1)
<i>Arl11</i>	0.000103174	0.487989	-2.04923
<i>Ptprc</i>	0.000153761	0.48941	-2.04328
<i>Mmp23</i>	0.000788392	0.489712	-2.04201
<i>Pglyrp1</i>	0.000700025	0.491953	-2.03272
<i>Gpnmb</i>	0.00145287	0.492604	-2.03003
<i>Rasal3</i>	0.00127595	0.493932	-2.02457
<i>Hcst</i>	0.00106335	0.49398	-2.02437
<i>Trim30a</i>	0.000737021	0.497248	-2.01107
<i>Oasl1</i>	0.000832123	0.499575	-2.0017
<i>1700112E06Rik</i>	0.00123358	2.09294	2.09294
<i>Ada</i>	0.000601781	2.1553	2.1553
<i>Gm4371</i>	0.000114849	2.27149	2.27149
<i>A730020M07Rik</i>	0.000359728	2.2994	2.2994
<i>Loxl2</i>	0.000578388	2.30691	2.30691
<i>Tsc22d3</i>	4.19E-05	2.30814	2.30814
<i>Fkrp</i>	7.29E-09	2.40833	2.40833
<i>Cort</i>	4.00E-05	2.68187	2.68187
<i>Scn10a</i>	0.0003066	2.82561	2.82561
<i>Retnlg</i>	0.000883512	3.07937	3.07937
<i>Xlr3b</i>	0.000146424	3.4215	3.4215
<i>Hif3a</i>	6.03E-05	3.44755	3.44755
<i>Kirrel2</i>	0.000269494	3.65393	3.65393
<i>Mir3099</i>	4.66E-06	4.28457	4.28457
<i>Upk1a</i>	4.21E-06	4.42985	4.42985
<i>Irgc1</i>	0.000196577	4.76216	4.76216
<i>Cyp2b19</i>	1.79E-06	7.52969	7.52969
<i>Arhgap33os</i>	1.44E-05	18.4324	18.4324

Table S2. **Top 10 gene ontology functions of differentially expressed genes**

Function	Type	Enrichment score	Enrichment p-value	% Genes in group that are present
Immune system process	Biological process	38.4721	1.96E-17	2.73651
Regulation of immune system process	Biological process	33.6377	2.46E-15	2.72408
Positive regulation of immune system process	Biological process	23.1531	8.80E-11	2.9985
Immune response	Biological process	22.2282	2.22E-10	2.84495
Defense response	Biological process	21.3901	5.13E-10	2.42291
Regulation of immune response	Biological process	20.4722	1.29E-09	3.14815
Cell activation	Biological process	20.1793	1.72E-09	3.34728
Response to stress	Biological process	20.0737	1.91E-09	1.48992
Leukocyte activation	Biological process	19.8696	2.35E-09	3.57995
Immune effector process	Biological process	19.6514	2.92E-09	3.88889
Response to stimulus	Biological process	17.464	2.60E-08	1.0694
Side of membrane	Cellular component	16.3077	8.27E-08	3.65854
Lymphocyte activation	Biological process	15.6673	1.57E-07	3.44828
Regulation of multicellular organismal process	Biological process	14.8941	3.40E-07	1.23549
Myeloid leukocyte activation	Biological process	14.8869	3.43E-07	7.69231
Regulation of cytokine production	Biological process	14.7763	3.83E-07	2.62664
Response to external biotic stimulus	Biological process	13.8237	9.92E-07	2.25225
External side of plasma membrane	Cellular component	13.8062	1.01E-06	3.67647
Multiorganism process	Biological process	13.5289	1.33E-06	2.19941