

## Biomarkers in Alzheimer's disease

**Table S1.** Differentially expressed genes in training cohorts ( $|\logFC| > 1$  and adjust  $P$ -value  $< 0.05$ )

Genes	logFC	AveExpr	t	P.Value	adj.P.Val	B
RPS27	1.609555	9.360017	8.004628	7.82E-15	6.39E-13	22.93928
SNRPG	1.560314	8.624294	8.761071	2.71E-17	4.33E-15	28.49838
NDUFB3	1.525468	8.209974	9.3203	3.25E-19	7.97E-17	32.84635
LSM3	1.518026	7.449509	9.399124	1.72E-19	5.26E-17	33.47474
TXN	1.505974	9.029185	9.330874	2.99E-19	7.84E-17	32.93042
RPS3A	1.488942	9.137976	5.789404	1.22E-08	2.88E-07	9.031426
AIF1	1.482472	9.583373	10.57976	7.85E-24	6.36E-21	43.31744
RPS27A	1.471432	11.22784	10.56869	8.65E-24	6.36E-21	43.22158
ENY2	1.46671	7.751628	10.50344	1.53E-23	9.39E-21	42.65787
HSPE1	1.442115	7.878766	10.48004	1.88E-23	9.87E-21	42.45623
CMTM2	1.423501	9.803581	8.642466	6.76E-17	9.55E-15	27.60172
CD3D	1.412729	9.713352	8.18586	2.08E-15	2.19E-13	24.23616
FCER1A	1.374636	8.465744	6.248154	8.63E-10	2.64E-08	11.60099
COX7A2	1.367872	9.666367	7.089347	4.40E-12	2.28E-10	16.74402
RPL7	1.364625	7.449686	8.400067	4.24E-16	4.73E-14	25.79776
NDUFB2	1.348251	9.117247	8.001095	8.03E-15	6.41E-13	22.91422
PSMA4	1.345087	7.687818	8.417991	3.71E-16	4.27E-14	25.92982
DBI	1.342793	7.573618	8.653271	6.22E-17	9.15E-15	27.68303
RPL24	1.340774	11.10152	8.444713	3.03E-16	3.72E-14	26.12711
TMC01	1.319965	8.386782	6.489204	2.01E-10	7.28E-09	13.01867
EEF1B2	1.308908	8.298641	8.059392	5.26E-15	4.72E-13	23.32879
DPM1	1.30758	7.926542	8.417659	3.72E-16	4.27E-14	25.92737
RPL5	1.307361	9.893617	7.151992	2.91E-12	1.55E-10	17.14862
UFC1	1.289101	8.789978	11.6999	3.04E-28	1.12E-24	53.33741
PSMA6	1.27603	7.944563	6.722693	4.69E-11	2.04E-09	14.43524
MRPL33	1.275817	9.322367	10.76414	1.54E-24	2.83E-21	44.92362
TAX1BP1	1.275691	9.0186	6.564644	1.26E-10	4.78E-09	13.47173
SNRPB2	1.274217	8.620786	9.411019	1.56E-19	5.21E-17	33.56989
PSMA3	1.273224	7.272025	10.0806	5.90E-22	2.71E-19	39.06033
COX6C	1.272149	9.396508	7.237844	1.64E-12	9.13E-11	17.70784
SEC11A	1.268193	8.960055	8.296291	9.21E-16	9.96E-14	25.03737
TPT1	1.260235	12.64568	4.951095	9.98E-07	1.37E-05	4.786157
POLR3GL	1.247474	8.724454	8.53491	1.53E-16	2.01E-14	26.7965
DNAJC8	1.243341	9.662491	9.276359	4.64E-19	1.00E-16	32.49769
COMMD3	1.24251	8.778826	6.71466	4.93E-11	2.08E-09	14.3858
SLU7	1.238382	7.618838	8.062144	5.15E-15	4.72E-13	23.34842
IGBP1	1.234193	8.058435	9.349145	2.58E-19	7.29E-17	33.07587
HMGB2	1.233574	7.338737	6.721438	4.73E-11	2.04E-09	14.42751
VPS29	1.230121	8.767872	6.389813	3.68E-10	1.25E-08	12.42857
ANAPC13	1.229039	9.062079	8.075493	4.68E-15	4.41E-13	23.4437
RPS4X	1.226629	11.42672	6.715426	4.91E-11	2.08E-09	14.39051
SH2D1A	1.211206	7.805405	6.922	1.31E-11	6.26E-10	15.67762
NGDN	1.207658	7.404584	8.963076	5.61E-18	1.09E-15	30.04633
RPL12	1.206323	11.00729	7.574583	1.65E-13	1.21E-11	19.95344
SSBP1	1.202602	8.844253	8.864241	1.22E-17	2.03E-15	29.28572
S100P	1.201722	8.534098	3.066349	0.002279	0.011524	-2.49927
CLEC4A	1.199682	8.853891	6.010665	3.47E-09	9.59E-08	10.2495

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ACAT1	1.196367	7.5686	7.43027	4.46E-13	2.83E-11	18.98096
SEC11C	1.191696	7.671402	7.301401	1.07E-12	6.05E-11	18.12534
VBP1	1.189889	7.767461	5.933711	5.40E-09	1.42E-07	9.821328
VPREB3	1.189533	7.766085	4.820647	1.88E-06	2.45E-05	4.179462
MTIF3	1.189342	7.695863	8.904146	8.91E-18	1.64E-15	29.59207
ZNHIT3	1.188955	7.537992	6.884199	1.67E-11	7.79E-10	15.43966
SUB1	1.188161	7.189655	6.886199	1.65E-11	7.79E-10	15.45222
BOLA2	1.186158	8.837085	6.038841	2.95E-09	8.28E-08	10.40747
FRG1	1.18499	7.705225	8.009453	7.56E-15	6.31E-13	22.97352
GNL2	1.184044	7.7993	9.305633	3.66E-19	8.42E-17	32.72984
UCHL3	1.183686	7.269827	9.80055	6.27E-21	2.56E-18	36.73236
LARP7	1.180143	7.184561	8.13943	2.93E-15	2.91E-13	23.90177
MPHOSPH10	1.17912	7.854866	8.152241	2.67E-15	2.73E-13	23.99389
FGL2	1.177594	11.29	5.278012	1.92E-07	3.37E-06	6.371032
ZC3H15	1.173928	7.188201	7.556873	1.87E-13	1.34E-11	19.83329
TMSB10	1.172418	12.6362	8.656653	6.06E-17	9.15E-15	27.70849
POLE4	1.170632	9.105497	5.80595	1.11E-08	2.69E-07	9.121129
EIF4A2	1.168289	10.43317	4.268268	2.34E-05	0.000225	1.775971
TRAPPC4	1.165273	8.540057	8.864463	1.21E-17	2.03E-15	29.28741
KLRF1	1.162783	7.794414	3.765954	0.000185	0.001395	-0.17241
GNL3	1.161637	7.27984	6.625284	8.65E-11	3.38E-09	13.83912
SET	1.160755	9.058105	6.374144	4.05E-10	1.37E-08	12.33625
MRPL36	1.160749	7.854119	7.424341	4.64E-13	2.89E-11	18.94133
RPL26L1	1.160499	7.067921	7.410133	5.12E-13	3.13E-11	18.84646
TRAT1	1.158254	7.308237	5.689111	2.13E-08	4.75E-07	8.492512
ZBED5	1.156992	8.186188	4.486661	8.91E-06	9.95E-05	2.693956
NDUFB6	1.156392	8.41702	7.350937	7.65E-13	4.61E-11	18.45279
VAMP7	1.156114	8.100145	5.563607	4.23E-08	9.14E-07	7.829854
SNRK	1.154602	9.019402	4.457393	1.02E-05	0.000111	2.568467
PTRH2	1.154589	7.223705	7.544441	2.03E-13	1.41E-11	19.74908
ZCCHC17	1.15268	7.743866	8.078528	4.57E-15	4.41E-13	23.46538
DYNLT3	1.148081	7.147284	6.627953	8.50E-11	3.36E-09	13.85536
MRPS17	1.147402	7.228969	10.60016	6.56E-24	6.36E-21	43.49432
NUP88	1.146683	8.088509	6.642555	7.76E-11	3.17E-09	13.94428
NAP1L1	1.145913	8.556691	4.568925	6.12E-06	7.12E-05	3.050733
BTF3	1.144319	9.098358	7.319806	9.45E-13	5.51E-11	18.24679
NDUFAF2	1.144043	7.201889	8.022276	6.89E-15	6.03E-13	23.06458
SNURF	1.143706	8.549658	5.452381	7.68E-08	1.53E-06	7.253555
CUTC	1.142512	7.552621	7.22285	1.81E-12	9.95E-11	17.60978
SNRPF	1.14176	8.824739	5.126121	4.17E-07	6.54E-06	5.623288
LYRM2	1.139303	7.546508	6.631655	8.31E-11	3.36E-09	13.87788
CD79A	1.135425	7.862534	3.5857	0.000368	0.00249	-0.8154
TBC1D15	1.134592	7.623807	5.790084	1.22E-08	2.88E-07	9.035108
ATG3	1.134195	7.976037	5.849834	8.69E-09	2.17E-07	9.36013
PTPN4	1.134169	8.050844	4.605276	5.18E-06	6.20E-05	3.210292
TCEAL8	1.132485	7.034816	8.534871	1.53E-16	2.01E-14	26.79621
CD58	1.131889	7.699419	4.419536	1.20E-05	0.000129	2.407279
RPL15	1.131746	10.51133	3.697884	0.00024	0.001721	-0.41874
AGTPBP1	1.130733	8.64499	5.246539	2.26E-07	3.86E-06	6.214478

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TAF12	1.1285	7.811007	7.796496	3.48E-14	2.66E-12	21.47794
HLA-DOB	1.126125	7.86112	4.136751	4.11E-05	0.000372	1.243759
HMG1N1	1.125817	8.84021	5.26283	2.08E-07	3.62E-06	6.295406
PLAC8	1.121874	9.908433	4.613638	4.98E-06	5.99E-05	3.247165
SPAG7	1.121814	7.449676	7.317478	9.60E-13	5.51E-11	18.23142
PPP1R2	1.12169	8.009864	4.642495	4.36E-06	5.29E-05	3.374868
BTBD10	1.120736	7.515313	7.107501	3.90E-12	2.05E-10	16.86097
CCT8	1.120637	9.397083	5.537508	4.87E-08	1.04E-06	7.693697
COMMD1	1.116948	8.456085	7.040907	6.05E-12	3.00E-10	16.43318
ZNF22	1.116835	7.533323	4.277447	2.25E-05	0.000219	1.813695
LYPLAL1	1.116631	7.465392	6.70958	5.09E-11	2.13E-09	14.35456
SDAD1	1.115534	8.990701	5.392528	1.05E-07	2.00E-06	6.947732
MTIF2	1.115318	7.553229	7.551995	1.93E-13	1.36E-11	19.80023
SLC30A9	1.113518	7.482694	5.394483	1.04E-07	2.00E-06	6.957674
SYF2	1.112482	7.847031	4.554967	6.53E-06	7.52E-05	2.989777
RPL34	1.11233	6.832642	7.5304	2.24E-13	1.53E-11	19.65411
PPP1CC	1.111531	9.496883	3.643695	0.000296	0.002066	-0.61179
MRPS28	1.110568	6.91372	7.489131	2.98E-13	1.95E-11	19.37579
RABEP1	1.109975	7.866664	4.174793	3.49E-05	0.000322	1.396103
WBP4	1.108676	7.171659	5.945118	5.06E-09	1.34E-07	9.884495
PDCD10	1.108059	7.25675	4.273146	2.29E-05	0.000222	1.79601
CFDP1	1.107623	7.312833	7.344341	8.00E-13	4.74E-11	18.40909
BTLA	1.107028	7.065203	5.772089	1.34E-08	3.15E-07	8.93779
NFU1	1.106481	7.336419	6.318371	5.67E-10	1.85E-08	12.00921
RPS21	1.105676	7.44293	4.736828	2.80E-06	3.55E-05	3.797446
RGS18	1.105546	9.012759	2.129215	0.033704	0.108111	-4.89122
CD160	1.104222	7.316553	4.049876	5.90E-05	0.000518	0.900752
PRMT1	1.103759	8.093079	6.290136	6.72E-10	2.13E-08	11.84459
LTV1	1.103603	7.513847	6.780627	3.25E-11	1.47E-09	14.79324
BCCIP	1.103004	7.281884	5.994611	3.81E-09	1.01E-07	10.15977
CLK1	1.101738	7.987373	3.06231	0.00231	0.011634	-2.51137
ARPC2	1.101513	12.05039	5.697407	2.03E-08	4.59E-07	8.536773
USP1	1.101417	7.262528	4.349162	1.64E-05	0.000168	2.111035
NDUFA9	1.100453	7.974848	6.299781	6.34E-10	2.03E-08	11.90076
MRFAP1L1	1.100101	7.745686	4.571153	6.06E-06	7.08E-05	3.060478
CLN3	-1.10002	7.767752	-5.92669	5.62E-09	1.47E-07	9.782523
TBC1D3B	-1.10012	7.34544	-5.87844	7.39E-09	1.89E-07	9.516801
ACSL1	-1.10017	9.274877	-2.23205	0.026036	0.087244	-4.66997
S100A10	-1.10052	11.6047	-3.60725	0.000339	0.002318	-0.7401
JAK1	-1.10083	9.0193	-3.16823	0.001624	0.008738	-2.18885
ADAM15	-1.10124	8.334721	-4.22926	2.77E-05	0.000261	1.616476
DUSP18	-1.10134	8.860939	-4.5835	5.73E-06	6.79E-05	3.114588
PUM1	-1.10155	9.615751	-4.82956	1.80E-06	2.36E-05	4.220467
NINJ1	-1.1018	10.89604	-3.1977	0.001469	0.008002	-2.09725
NKG7	-1.10223	12.03308	-2.36091	0.018597	0.066113	-4.37826
SLC16A5	-1.10227	7.820328	-4.95594	9.74E-07	1.35E-05	4.808981
RHBDD2	-1.10232	9.357268	-4.4807	9.15E-06	0.000102	2.668354
SLC11A1	-1.10322	8.70159	-3.57067	0.000389	0.002614	-0.86767
IGFBP7	-1.10322	7.62935	-4.74774	2.66E-06	3.38E-05	3.846841

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PIAS4	-1.10328	9.048995	-4.93074	1.10E-06	1.50E-05	4.690526
HIP1	-1.10352	7.398625	-3.66296	0.000275	0.001931	-0.54346
YIPF6	-1.10378	8.802682	-4.49781	8.47E-06	9.55E-05	2.741962
SIGLEC5	-1.104	7.699953	-3.37482	0.000794	0.004822	-1.52951
WWC3	-1.10431	8.062959	-5.16029	3.51E-07	5.76E-06	5.789793
TST	-1.10446	9.516769	-3.75656	0.000192	0.001435	-0.20668
OSBPL5	-1.10474	7.821929	-4.25601	2.47E-05	0.000236	1.725716
KIAA0513	-1.10541	8.734343	-3.99801	7.31E-05	0.000622	0.699215
CNNM3	-1.10546	7.572529	-5.49771	6.03E-08	1.25E-06	7.487175
GATAD2B	-1.1057	8.130054	-5.13473	4.00E-07	6.41E-06	5.66514
ADAR	-1.10595	10.12459	-3.54899	0.000422	0.002793	-0.94269
CHFR	-1.10679	9.43106	-6.51774	1.68E-10	6.32E-09	13.18953
ZAP70	-1.10717	8.671486	-4.01221	6.89E-05	0.000594	0.754179
TSPAN32	-1.10725	8.688197	-4.9849	8.45E-07	1.19E-05	4.945777
SYT11	-1.10737	8.848883	-4.25068	2.52E-05	0.00024	1.703903
IER3	-1.10768	7.744146	-4.91147	1.21E-06	1.63E-05	4.600326
CEP350	-1.1088	8.390328	-6.43685	2.77E-10	9.69E-09	12.70685
PLCG2	-1.1092	9.852003	-3.99613	7.37E-05	0.000625	0.691989
IFNGR2	-1.11019	11.30619	-4.098	4.83E-05	0.000431	1.089898
TMEM154	-1.11123	10.23983	-2.54028	0.011365	0.044023	-3.9456
NT5C2	-1.11126	9.282328	-4.33735	1.73E-05	0.000176	2.061762
SPSB3	-1.11127	9.693225	-4.94708	1.02E-06	1.40E-05	4.76727
CTSW	-1.11138	8.613774	-3.19809	0.001467	0.008002	-2.09604
ATP6V1F	-1.11202	10.32295	-5.12589	4.18E-07	6.54E-06	5.622147
AKT1	-1.11208	10.03643	-5.01411	7.31E-07	1.06E-05	5.084526
SLC22A4	-1.11216	7.819931	-3.97878	7.91E-05	0.000665	0.625151
E4F1	-1.1127	8.505191	-6.25489	8.29E-10	2.56E-08	11.64
ZNF746	-1.11306	9.233585	-4.41972	1.20E-05	0.000129	2.40805
NISCH	-1.11355	8.497056	-6.26327	7.89E-10	2.46E-08	11.68852
RBCK1	-1.1136	8.314714	-5.22366	2.54E-07	4.30E-06	6.101184
PSTPIP1	-1.11369	8.534335	-5.32501	1.50E-07	2.71E-06	6.606381
KIR3DL1	-1.11373	7.80358	-3.43652	0.000636	0.003964	-1.32483
NFKBIZ	-1.11378	9.466229	-4.08126	5.18E-05	0.000458	1.023871
MGAT1	-1.1142	9.938249	-5.30701	1.65E-07	2.94E-06	6.516016
GDPD3	-1.11422	7.550261	-6.07218	2.43E-09	6.87E-08	10.59522
PNPLA6	-1.11482	9.193207	-5.12637	4.17E-07	6.54E-06	5.624499
AKAP13	-1.11497	8.456562	-6.2278	9.74E-10	2.93E-08	11.4834
SLC26A8	-1.11525	7.19938	-5.00279	7.73E-07	1.11E-05	5.030684
ANKS1A	-1.11575	7.871144	-7.50219	2.72E-13	1.82E-11	19.46376
UBR4	-1.11628	8.897887	-5.16306	3.46E-07	5.73E-06	5.803303
PPP1R14B	-1.11665	8.347555	-7.20978	1.98E-12	1.07E-10	17.52444
TRIM38	-1.11799	8.946014	-5.25446	2.17E-07	3.76E-06	6.253794
SPI1	-1.11803	10.21408	-3.33	0.00093	0.005504	-1.67592
RAB24	-1.11832	7.765331	-6.31773	5.69E-10	1.85E-08	12.0055
SLC27A3	-1.1187	8.59676	-5.4655	7.16E-08	1.44E-06	7.320988
STAT5B	-1.11871	8.834655	-5.38548	1.09E-07	2.05E-06	6.911907
TNFRSF1A	-1.11975	10.59215	-4.37724	1.45E-05	0.000152	2.228716
TRPC4AP	-1.12011	9.039122	-5.01913	7.13E-07	1.04E-05	5.108408
PISD	-1.1212	8.973175	-4.50975	8.02E-06	9.13E-05	2.793476

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TNFSF13B	-1.12137	10.32359	-3.78362	0.000172	0.001313	-0.1078
CTNNA1	-1.12212	9.058431	-4.83048	1.79E-06	2.35E-05	4.224664
IDS	-1.12244	8.948136	-5.67116	2.35E-08	5.21E-07	8.396951
SLC9A8	-1.12261	7.814915	-6.08298	2.28E-09	6.51E-08	10.6562
ZC3H3	-1.12305	8.417697	-6.09685	2.11E-09	6.09E-08	10.73471
KLF6	-1.12327	8.515199	-5.75912	1.45E-08	3.36E-07	8.867834
STAT3	-1.12348	9.236638	-4.11882	4.43E-05	0.000397	1.172399
B4GALT5	-1.12378	9.570983	-3.76106	0.000188	0.001419	-0.19026
CREBBP	-1.12418	9.131086	-4.63759	4.46E-06	5.39E-05	3.35313
TNFRSF14	-1.12494	10.963	-6.27253	7.46E-10	2.34E-08	11.74229
PPTC7	-1.12519	8.792531	-6.00353	3.62E-09	9.71E-08	10.20959
BCKDK	-1.12746	9.185912	-5.46243	7.28E-08	1.45E-06	7.30519
NCSTN	-1.12991	9.644502	-5.07555	5.38E-07	8.11E-06	5.3787
KLF2	-1.13077	12.49163	-5.46534	7.17E-08	1.44E-06	7.320148
EMILIN2	-1.13123	8.785816	-5.13854	3.92E-07	6.35E-06	5.683661
MAPK8IP3	-1.1313	8.707327	-6.75584	3.80E-11	1.70E-09	14.63974
HBQ1	-1.13162	10.26462	-2.29827	0.021941	0.075848	-4.52206
GAK	-1.13179	9.788639	-5.48058	6.61E-08	1.36E-06	7.398673
PGS1	-1.13396	9.113736	-5.47493	6.81E-08	1.39E-06	7.369535
SLC7A7	-1.13443	10.39408	-5.26299	2.07E-07	3.62E-06	6.296205
STAT1	-1.13457	9.402702	-3.57413	0.000384	0.002585	-0.85565
MKNK2	-1.13559	9.475694	-4.92667	1.12E-06	1.52E-05	4.671436
FCGRT	-1.1357	10.75588	-5.16873	3.36E-07	5.59E-06	5.831082
FRAT1	-1.13618	7.940727	-5.39263	1.05E-07	2.00E-06	6.948265
AGTRAP	-1.13664	8.520648	-6.3319	5.23E-10	1.73E-08	12.0883
NOL12	-1.137	7.944724	-8.01711	7.15E-15	6.11E-13	23.02788
KLHDC8B	-1.13802	7.697377	-4.99393	8.08E-07	1.15E-05	4.988618
MEGF9	-1.13833	7.964413	-5.75611	1.47E-08	3.38E-07	8.851622
HSPA6	-1.13856	9.246179	-4.16615	3.63E-05	0.000332	1.361375
RXRA	-1.14058	10.79991	-5.04347	6.32E-07	9.29E-06	5.224698
ALPL	-1.14151	10.85446	-2.53757	0.011452	0.044314	-3.95237
HELZ	-1.14229	8.122759	-9.04475	2.95E-18	6.02E-16	30.67949
ARHGEF2	-1.14303	11.04351	-7.04596	5.85E-12	2.95E-10	16.46554
EIF2AK2	-1.14442	9.050618	-3.70077	0.000238	0.001717	-0.4084
APBB3	-1.14472	8.112898	-7.48108	3.15E-13	2.03E-11	19.32161
PIK3CD	-1.14619	9.466606	-5.36662	1.21E-07	2.24E-06	6.816288
NXF1	-1.15088	9.277887	-7.91847	1.46E-14	1.14E-12	22.33068
CSF1R	-1.15111	10.10815	-4.46709	9.73E-06	0.000107	2.609944
ZNF281	-1.15415	8.601829	-5.02938	6.78E-07	9.89E-06	5.157305
CA4	-1.15434	8.585433	-3.72413	0.000217	0.00159	-0.32425
SMAP2	-1.15472	12.43063	-4.88769	1.36E-06	1.81E-05	4.489434
DCUN1D1	-1.15771	7.871169	-5.79905	1.16E-08	2.76E-07	9.083691
EFHD2	-1.15826	11.92824	-6.73603	4.31E-11	1.91E-09	14.51744
FPR2	-1.15936	8.952108	-3.78242	0.000173	0.001316	-0.1122
TBXAS1	-1.16107	9.847507	-6.08574	2.25E-09	6.45E-08	10.67185
ITGA5	-1.1626	8.763511	-5.88828	6.99E-09	1.80E-07	9.570841
MYO1G	-1.16508	9.949531	-6.41311	3.20E-10	1.11E-08	12.56618
ITGB2	-1.16527	13.21236	-6.40996	3.26E-10	1.12E-08	12.54757
PLOD1	-1.16601	8.902714	-6.23176	9.51E-10	2.89E-08	11.50626

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FOXO3	-1.16664	10.06672	-4.64507	4.31E-06	5.26E-05	3.386318
ACADVL	-1.168	9.851089	-7.7459	4.97E-14	3.73E-12	21.12727
PPM1F	-1.16989	10.37548	-5.34873	1.33E-07	2.43E-06	6.725851
SLC15A4	-1.17323	9.615326	-6.20753	1.10E-09	3.28E-08	11.36663
TLN1	-1.1741	9.189393	-5.10243	4.70E-07	7.17E-06	5.508425
BEST1	-1.17693	8.18837	-6.19241	1.20E-09	3.53E-08	11.27969
RHBDF2	-1.17751	9.006029	-6.87514	1.77E-11	8.15E-10	15.38281
CEBPB	-1.18182	12.08324	-5.84151	9.11E-09	2.25E-07	9.314671
SRRM2	-1.18189	10.02406	-6.57623	1.17E-10	4.49E-09	13.5417
CSAD	-1.18473	8.247861	-6.99147	8.35E-12	4.04E-10	16.11772
ULK1	-1.1859	10.03443	-6.4738	2.21E-10	7.80E-09	12.92668
FPR1	-1.1872	12.42206	-5.11369	4.44E-07	6.83E-06	5.562954
OSCAR	-1.19048	9.26419	-6.47432	2.20E-10	7.80E-09	12.92983
APBB1IP	-1.19128	10.68937	-6.0041	3.61E-09	9.71E-08	10.2128
RNF24	-1.19134	9.954112	-4.84265	1.69E-06	2.23E-05	4.280765
FES	-1.19348	8.875001	-6.99583	8.12E-12	3.98E-10	16.14549
LPP	-1.19569	9.726372	-9.57503	4.08E-20	1.50E-17	34.8905
MYADM	-1.20489	11.64442	-4.99868	7.89E-07	1.12E-05	5.011149
GRN	-1.21056	9.844343	-5.82237	1.01E-08	2.49E-07	9.210354
SORL1	-1.21059	10.85277	-5.2221	2.56E-07	4.32E-06	6.093503
ABTB1	-1.2221	10.46012	-6.62955	8.42E-11	3.36E-09	13.8651
PGLYRP1	-1.22315	9.569679	-4.26985	2.32E-05	0.000224	1.782453
CSNK1G2	-1.22986	10.26575	-5.73617	1.64E-08	3.74E-07	8.744359
ITGAM	-1.26164	9.471993	-8.47597	2.40E-16	3.04E-14	26.35848

**Table S2.** Feature genes identified by Boruta algorithm

Gene	Important	decision
VPS29	1.099922	Rejected
RPS3A	1.205005	Rejected
GRN	1.576741	Rejected
SORL1	1.706963	Rejected
MYADM	2.126641	Rejected
TAX1BP1	2.147483	Rejected
PSMA6	2.148816	Rejected
FCER1A	2.179526	Rejected
SH2D1A	2.318225	Rejected
PGLYRP1	2.546298	Rejected
EEF1B2	2.588323	Rejected
COX6C	2.808093	Tentative
COMMD3	2.935152	Tentative
CD3D	2.975145	Confirmed
TPT1	3.01185	Confirmed
NDUFB2	3.369418	Confirmed
RPS27	3.397104	Confirmed
COX7A2	3.459972	Confirmed
TMCO1	3.467814	Confirmed
ABTB1	3.490556	Confirmed
CSNK1G2	3.527216	Confirmed

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POLR3GL	3.807013	Confirmed
SEC11A	3.928164	Confirmed
SLU7	4.142269	Confirmed
HMGB2	4.597455	Confirmed
DPM1	4.789581	Confirmed
RPL24	4.80265	Confirmed
SNRPG	5.258554	Confirmed
RPL12	5.447277	Confirmed
RPL5	5.554934	Confirmed
RPS4X	5.565047	Confirmed
NGDN	5.639681	Confirmed
ANAPC13	5.906456	Confirmed
PSMA4	5.97657	Confirmed
SNRPB2	6.095489	Confirmed
RPL7	6.140573	Confirmed
DBI	6.630868	Confirmed
DNAJC8	7.058027	Confirmed
PSMA3	7.641101	Confirmed
IGBP1	8.153762	Confirmed
SSBP1	8.222691	Confirmed
ITGAM	8.553201	Confirmed
HSPE1	8.776746	Confirmed
TXN	8.798499	Confirmed
LSM3	8.901268	Confirmed
NDUFB3	9.049477	Confirmed
ENY2	10.15341	Confirmed
CMTM2	10.84303	Confirmed
MRPL33	11.0729	Confirmed
AIF1	11.28228	Confirmed
RPS27A	13.19591	Confirmed
UFC1	13.50049	Confirmed

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**Table S3.** Hub genes identified by LASSO algorithm

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AIF1
RPS27A
CMTM2
COX7A2
NDUFB2
RPL24
TMC01
DPM1
RPL5
UFC1
MRPL33
SNRPB2
PSMA3
DNAJC8
IGBP1
ANAPC13
RPS4X
SSBP1
ABTB1
CSNK1G2
ITGAM

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**Table S4.** Gene model constructed by lightGBM

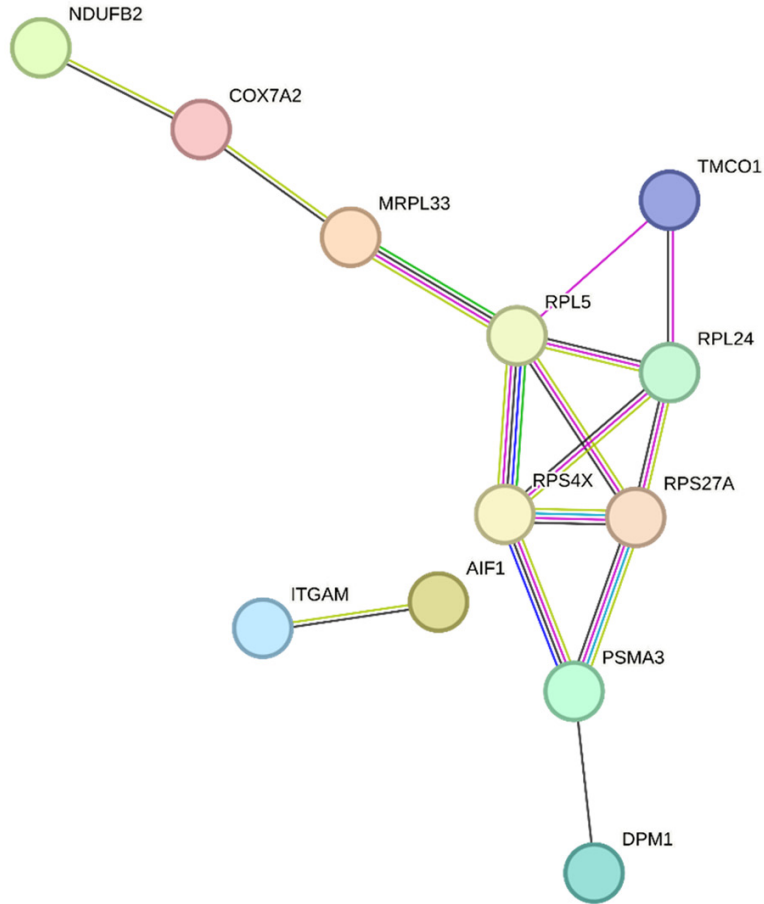
---

Gene	Coefficient
AIF1	0.653944
RPS27A	0.863563
CMTM2	1.284774
COX7A2	-0.40885
NDUFB2	-0.44523
RPL24	-0.66977
TMC01	-1.23248
DPM1	-0.42652
RPL5	0.053078
UFC1	1.409454
MRPL33	0.02332
SNRPB2	0.338794
PSMA3	0.621297
DNAJC8	1.316004
IGBP1	0.144825
ANAPC13	0.269325
RPS4X	0.36695
SSBP1	0.263203
ABTB1	-0.91195
CSNK1G2	-0.64088
ITGAM	-0.53259

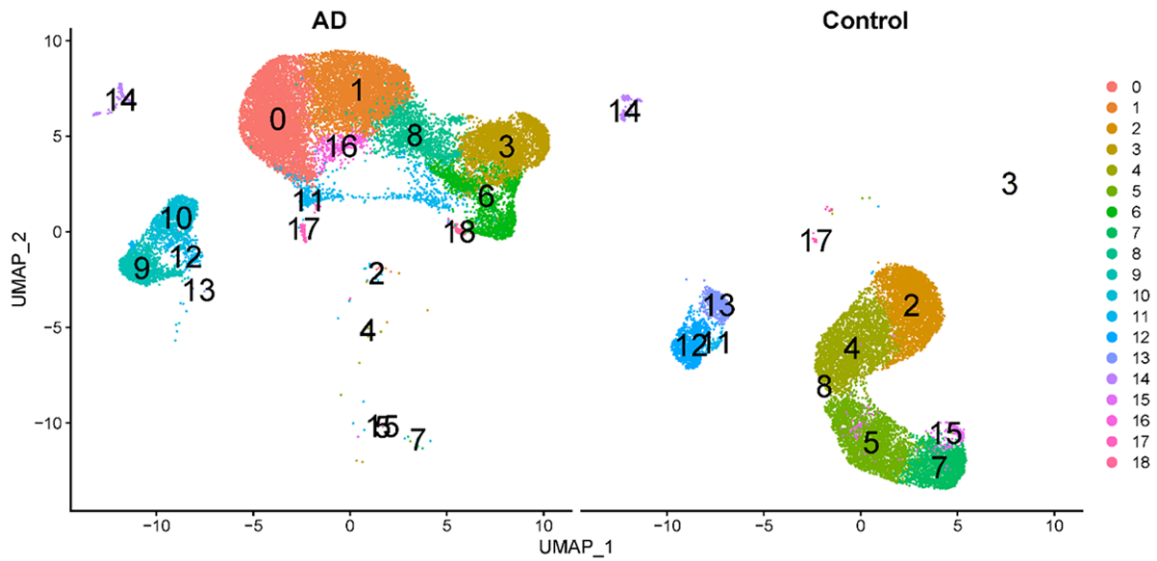
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## Biomarkers in Alzheimer's disease



**Figure S1.** Protein-protein interaction network based on genes obtained from gene module constructed by lightGBM algorithm.



**Figure S2.** Nineteen clusters identified by using the uniform manifold approximation and projection for dimension reduction (UMAP) algorithm in blood single-cell RNA-seq collected from patients with Alzheimer's disease.