

Supplementary information**TableS3. Differentially expressed genes between Astrocyte from DG and CA**

p_val	avg_log2FC	pct.1	pct.2	p_val_adj	cluster	gene
0	1.98881751	0.943	0.576	0	DG	PPFIA2
4.06E-306	1.69566289	0.585	0.163	5.55E-302	DG	CNTN5
2.46E-71	1.4205151	0.416	0.247	3.36E-67	DG	FAM155A
3.71E-262	1.2161095	0.825	0.576	5.07E-258	DG	LRRTM4
4.94E-155	1.15966885	0.572	0.302	6.76E-151	DG	CDH8
4.44E-195	1.14884494	0.739	0.503	6.07E-191	DG	ERC2
7.60E-167	1.14196166	0.542	0.237	1.04E-162	DG	CCDC85A
1.55E-298	1.14072379	0.888	0.701	2.12E-294	DG	CSMD3
3.63E-157	1.13715164	0.558	0.291	4.96E-153	DG	COL25A1
1.07E-264	1.13318389	0.84	0.605	1.46E-260	DG	ZFPM2
1.03E-127	1.09942817	0.439	0.191	1.40E-123	DG	CDH9
3.35E-253	1.0516855	0.885	0.745	4.58E-249	DG	GRIK2
3.40E-120	1.0316075	0.476	0.237	4.64E-116	DG	GRM1
2.05E-119	0.99683293	0.608	0.403	2.80E-115	DG	CLSTN2
1.75E-135	0.99608776	0.646	0.435	2.40E-131	DG	SGCZ
1.72E-102	0.98464352	0.365	0.149	2.35E-98	DG	CA10
9.76E-202	0.93984562	0.959	0.941	1.34E-197	DG	CSMD1
2.51E-96	0.93473254	0.413	0.2	3.43E-92	DG	C8orf34
5.19E-92	0.9264275	0.312	0.113	7.10E-88	DG	UNC13C
6.57E-191	0.92093276	0.857	0.69	8.99E-187	DG	RYR2
7.02E-109	0.9103765	0.57	0.366	9.60E-105	DG	TMEFF2
6.20E-84	0.89372731	0.402	0.208	8.48E-80	DG	SYNPR
3.10E-108	0.89339185	0.602	0.4	4.24E-104	DG	DPYD
1.64E-203	0.88693908	0.904	0.778	2.24E-199	DG	EPHA6
3.57E-90	0.88079245	0.417	0.21	4.88E-86	DG	EPHA7
3.47E-88	0.85873786	0.402	0.192	4.75E-84	DG	SEMA5A
7.72E-94	0.8566942	0.937	0.852	1.06E-89	DG	DPP10
3.30E-76	0.84596565	0.505	0.334	4.52E-72	DG	GABRB3
9.82E-222	0.83486979	0.971	0.856	1.34E-217	DG	KCNIP4
5.43E-84	0.82162822	0.504	0.311	7.43E-80	DG	KCNT2
5.75E-110	0.79627439	0.736	0.582	7.87E-106	DG	KCTD16
1.81E-58	0.7959184	0.31	0.155	2.48E-54	DG	KCNJ6
2.53E-69	0.79389694	0.282	0.112	3.46E-65	DG	PDE7B
3.46E-74	0.78689992	0.475	0.281	4.73E-70	DG	PCDH15
7.87E-65	0.78538009	0.434	0.267	1.08E-60	DG	PRR16
9.83E-83	0.7753563	0.607	0.449	1.34E-78	DG	MCTP1
3.13E-180	0.76748083	0.907	0.811	4.28E-176	DG	NBEA
1.40E-62	0.76676584	0.282	0.124	1.91E-58	DG	ELMOD1

1.44E-66	0.76515605	0.437	0.274	1.98E-62	DG	TIAM1
1.81E-67	0.75506414	0.22	0.069	2.48E-63	DG	THSD7B
8.02E-56	0.74883558	0.421	0.265	1.10E-51	DG	UST
1.39E-57	0.74520218	0.295	0.142	1.90E-53	DG	MAML3
2.51E-72	0.73820221	0.571	0.414	3.43E-68	DG	GALNT17
2.29E-61	0.73491054	0.482	0.324	3.13E-57	DG	SPOCK1
3.65E-77	0.73099236	0.623	0.488	4.99E-73	DG	EDIL3
4.14E-96	0.71769606	0.7	0.57	5.67E-92	DG	RFX3
2.47E-75	0.71452855	0.683	0.561	3.38E-71	DG	DPP6
3.34E-60	0.71135377	0.274	0.119	4.57E-56	DG	ZMAT4
1.49E-52	0.7102834	0.267	0.125	2.04E-48	DG	ADAMTS3
1.49E-69	0.69892543	0.58	0.426	2.03E-65	DG	KCNH1
0	1.86356776	0.72	0.196	0	CA	PLP1
0	1.5489399	0.714	0.201	0	CA	MEIS2
1.32E-131	0.97746789	0.453	0.177	1.81E-127	CA	PLCB4
8.86E-100	0.90439981	0.492	0.238	1.21E-95	CA	TRIM58
1.19E-97	0.82956651	0.936	0.846	1.63E-93	CA	SLC24A3
1.02E-68	0.7387836	0.477	0.264	1.39E-64	CA	MYO16
8.64E-133	0.71246068	0.926	0.776	1.18E-128	CA	MAPK10
5.15E-102	0.70576172	0.777	0.517	7.04E-98	CA	PEX5L
1.08E-74	0.6531056	0.312	0.122	1.48E-70	CA	FIGN
5.60E-88	0.64517814	0.299	0.102	7.67E-84	CA	MEIS1
2.47E-63	0.64239685	0.692	0.477	3.38E-59	CA	KIAA0355
2.80E-55	0.62792043	0.499	0.315	3.83E-51	CA	TMEM132C
2.27E-73	0.59834063	0.624	0.387	3.11E-69	CA	WSB1
5.37E-71	0.58594129	0.734	0.509	7.35E-67	CA	SLC8A1
2.09E-69	0.58016036	0.704	0.475	2.86E-65	CA	RYR3
6.02E-31	0.57729666	0.338	0.21	8.24E-27	CA	RGS6
5.52E-51	0.57255326	0.505	0.318	7.55E-47	CA	BRINP3
3.91E-91	0.5718352	0.199	0.041	5.35E-87	CA	MOG
4.18E-69	0.57018848	0.507	0.273	5.71E-65	CA	CADPS2
7.30E-40	0.56866185	0.46	0.304	9.98E-36	CA	WIF1
3.22E-77	0.56777131	0.364	0.154	4.41E-73	CA	MYLK
2.39E-61	0.56677211	0.629	0.425	3.27E-57	CA	COL5A3
1.40E-43	0.55073713	0.161	0.056	1.91E-39	CA	CPAMD8
4.04E-60	0.54545046	0.246	0.093	5.52E-56	CA	TOX
4.36E-82	0.5436116	0.177	0.035	5.97E-78	CA	SPP1
1.69E-60	0.53486783	0.251	0.096	2.31E-56	CA	NDST3
5.50E-58	0.52562202	0.433	0.234	7.53E-54	CA	EYA1
1.77E-70	0.52484637	0.676	0.427	2.42E-66	CA	CTNNA3
1.29E-31	0.51156963	0.79	0.674	1.77E-27	CA	DCLK2

1.04E-81	0.50976093	0.163	0.028	1.42E-77	CA	CNTN2
8.23E-51	0.50321601	0.362	0.188	1.13E-46	CA	GPAM
1.39E-41	0.49987979	0.889	0.862	1.91E-37	CA	GPC5
5.49E-65	0.49823317	0.171	0.044	7.52E-61	CA	SATB2
2.91E-55	0.48668538	0.413	0.218	3.98E-51	CA	MAN2A1
1.07E-50	0.48534121	0.568	0.358	1.46E-46	CA	FOXP1
2.11E-50	0.47079975	0.307	0.144	2.89E-46	CA	QDPR
5.62E-58	0.47063774	0.169	0.048	7.69E-54	CA	TRPC4
8.97E-49	0.47063675	0.514	0.319	1.23E-44	CA	NAV1
9.08E-40	0.46985525	0.382	0.223	1.24E-35	CA	KCNN2
1.53E-52	0.46354946	0.41	0.214	2.09E-48	CA	ELMO1
3.20E-32	0.4622621	0.563	0.407	4.38E-28	CA	LHFPL3
1.72E-53	0.45514039	0.527	0.307	2.35E-49	CA	PIP4K2A
1.14E-46	0.4546733	0.631	0.44	1.56E-42	CA	ARHGAP21
4.60E-41	0.45122771	0.245	0.114	6.29E-37	CA	OLFM3
1.70E-58	0.44781059	0.207	0.069	2.32E-54	CA	TF
1.97E-36	0.44695254	0.466	0.297	2.69E-32	CA	ITPKB
3.07E-42	0.44687561	0.282	0.138	4.20E-38	CA	PRKCB