

Table S8. Cluster\_CD99\_G1-Sample\_AS vs Con. Path-Analysis

## UpPath\_Result

PathwayID	PathwayTerm	QGeneInPath	QGeneSum	BGeneInPath	BGeneSum	P-Value	FDR	Enrichment	(-log10P)
Path:04141	Protein processing in endoplasmic reticulum	18	157	170	8039	4.35777E-09	7.21022E-07	5.421581117	8.360735266
Path:03060	Protein export	8	157	23	8039	6.77016E-09	7.21022E-07	17.810024924	8.169401179
Path:03040	Spliceosome	16	157	146	8039	2.03213E-08	1.44282E-06	5.611377716	7.692047493
Path:04978	Mineral absorption	7	157	60	8039	0.000153594	0.008178874	5.973779193	3.813626091
Path:03013	Nucleocytoplasmic transport	9	157	108	8039	0.000246957	0.010520369	4.266985138	3.607378625
Path:05134	Legionellosis	6	157	57	8039	0.000804076	0.028544703	5.389875964	3.094702831
Path:05014	Amyotrophic lateral sclerosis	16	157	364	8039	0.001934378	0.058860357	2.250717435	2.713458675
Path:05110	Vibrio cholerae infection	5	157	50	8039	0.002780945	0.06626366	5.120382166	2.555807614
Path:03015	mRNA surveillance pathway	7	157	97	8039	0.002799873	0.06626366	3.69512115	2.552861676
Path:04612	Antigen processing and presentation	6	157	77	8039	0.003816789	0.081297614	3.989908181	2.418301804
Path:05010	Alzheimer disease	15	157	384	8039	0.007928583	0.153526198	2.000149283	2.100804424
Path:05417	Lipid and atherosclerosis	10	157	214	8039	0.009035324	0.160377007	2.392701947	2.044056252
Path:04218	Cellular senescence	8	157	156	8039	0.011231213	0.184019108	2.625837008	1.94957333
Path:03008	Ribosome biogenesis in eukaryotes	6	157	101	8039	0.013944566	0.212156612	3.041811187	1.855594997
Path:00190	Oxidative phosphorylation	7	157	134	8039	0.015765528	0.223870499	2.674826504	1.802291477
Path:05020	Prion disease	11	157	273	8039	0.017766829	0.236520905	2.063157649	1.750390088
Path:05131	Shigellosis	10	157	247	8039	0.022658041	0.265526576	2.073029217	1.644777639

Path:05022	Pathways of neurodegeneration - multiple diseases	16	157	476	8039	0.023234835	0.265526576	1.721136862	1.633860404
Path:04215	Apoptosis - multiple species	3	157	32	8039	0.023954612	0.265526576	4.80035828	1.620610853
Path:04144	Endocytosis	10	157	252	8039	0.025598133	0.265526576	2.031897685	1.591791712
Path:05210	Colorectal cancer	5	157	86	8039	0.026178676	0.265526576	2.976966375	1.582052314
Path:05160	Hepatitis C	7	157	157	8039	0.033893653	0.313107131	2.28297294	1.469881621
Path:04390	Hippo signaling pathway	7	157	157	8039	0.033893653	0.313107131	2.28297294	1.469881621
Path:05012	Parkinson disease	10	157	266	8039	0.035279677	0.313107131	1.924955701	1.452475403
Path:04210	Apoptosis	6	157	136	8039	0.04995344	0.425603306	2.258992132	1.301434602

## DownPath\_Result

PathwayID	PathwayTerm	QGeneInPath	QGeneSum	BGeneInPath	BGeneSum	P-Value	FDR	Enrichment	(-log10P)
Path:05415	Diabetic cardiomyopathy	20	188	203	8039	4.63945E-08	05	4.212870768	7.333533548
Path:00190	Oxidative phosphorylation	12	188	134	8039	6.5796E-05	84	3.829310892	4.181800185
Path:05012	Parkinson disease	17	188	266	8039	0.000155114	0.0134949	2.732822748	3.809349336
Path:05020	Prion disease	16	188	273	8039	0.000637735	0.0393054	2.506117995	3.195359417
Path:04145	Phagosome	11	188	150	8039	0.000752979	0.0393054	3.135780142	3.123217267
Path:04613	Neutrophil extracellular trap formation	12	188	190	8039	0.001622118	58	2.700671892	2.789917673
Path:05016	Huntington disease	16	188	306	8039	0.002116821	58	2.235850369	2.674315809
Path:00480	Glutathione metabolism	6	188	58	8039	0.002226761	58	4.423514307	2.652326457
Path:04144	Endocytosis	14	188	252	8039	0.002296568	0.0633581	2.375591017	2.638920643
Path:04611	Platelet activation	9	188	124	8039	0.002427516	0.0633581	3.103594715	2.614837963
Path:00010	Glycolysis / Gluconeogenesis	6	188	67	8039	0.004618293	34	3.829310892	2.335518475
Path:04670	Leukocyte transendothelial migration	8	188	114	8039	0.005135902	34	3.000746547	2.289383267
Path:01200	Carbon metabolism	8	188	115	8039	0.005412255	34	2.974653099	2.266621723
Path:05208	Chemical carcinogenesis - reactive oxygen species	12	188	223	8039	0.00599664	11	2.301020895	2.22209199
Path:01230	Biosynthesis of amino acids	6	188	75	8039	0.007995029	01	3.420851064	2.097179967
Path:04612	Antigen processing and presentation	6	188	77	8039	0.009060971	9	3.331997789	2.042825259

Path:05146	Amoebiasis	7	188	102	8039	0.009757062	0.1497995	2.934553609	2.010680937
	Amyotrophic lateral sclerosis	16	188	364	8039	0.011100954	39	1.879588497	1.954639681
Path:05132	Salmonella infection	12	188	249	8039	0.013768535	98	2.060753653	1.861112252
	Pathways of neurodegeneration						0.2010390		
Path:05022	- multiple diseases	19	188	476	8039	0.015405289	28	1.706832201	1.812330136
Path:05010	Alzheimer disease	16	188	384	8039	0.017690909	0.2198727	1.781693262	1.752249864
	Staphylococcus aureus infection	6	188	93	8039	0.021486422	0.2549071	2.758750858	1.667835889
	Retrograde endocannabinoid signaling	8	188	148	8039	0.02257301	92	2.311385854	1.646410526
Path:04966	Collecting duct acid secretion	3	188	27	8039	0.024377779	0.2651083	4.751182033	1.613005866
	NOD-like receptor signaling pathway	9	188	182	8039	0.026794459	49	2.114537059	1.571955013
	Non-alcoholic fatty liver disease	8	188	155	8039	0.028760297	0.2887091	2.207000686	1.541206627
Path:05140	Leishmaniasis	5	188	75	8039	0.03066846	0.2894632	2.85070922	1.513308025
	Relaxin signaling pathway	7	188	129	8039	0.031369713	0.2894632	2.320344714	1.503489452
Path:00030	Pentose phosphate pathway	3	188	30	8039	0.032162579	0.2894632	4.27606383	1.492649137
	Dopaminergic synapse	7	188	132	8039	0.034920646	0.3038096	2.267609607	1.456917737
Path:04714	Thermogenesis	10	188	232	8039	0.04540468	16	1.843130961	1.342899376