Table S12 - IPA canonical pathways unique to EGA2 super-group

Canonical Pathways	p-value[a]	Z-score[b]	Activation State	Total DEGs	Sub-Group
mTOR Signaling	3.16E-14	2.324	Activated	38	EGA2-1
Systemic Lupus Erythematosus Signaling	2.95E-06			27	EGA2-1
Huntington's Disease Signaling	4.17E-03	0.832		21	EGA2-1
mTOR Signaling	5.01E-12			14	EGA2-2
Estrogen Receptor Signaling	1.20E-02			12	EGA2-1
Sumoylation Pathway	3.63E-03	-0.707		11	EGA2-1
Cyclins and Cell Cycle Regulation	9.12E-03	-0.447		9	EGA2-1
ERK5 Signaling	8.71E-03	2.828	Activated	8	EGA2-1
PDGF Signaling	4.79E-02	2.828	Activated	8	EGA2-1
Neurotrophin/TRK Signaling	2.09E-02	2.121	Activated	8	EGA2-1
Remodeling of Epithelial Adherens Junctions	1.15E-02			8	EGA2-1
CNTF Signaling	2.14E-02	2.646	Activated	7	EGA2-1
ErbB2-ErbB3 Signaling	3.39E-02	2.646	Activated	7	EGA2-1
Cell Cycle: G2/M DNA Damage Checkpoint Regulation	5.75E-03	0		7	EGA2-1
Huntington's Disease Signaling	2.57E-03			6	EGA2-2
Role of p14/p19ARF in Tumor Suppression	4.17E-02	-2	Inhibited	5	EGA2-1
Purine Nucleotides De Novo Biosynthesis II	6.46E-05			5	EGA2-1
Pyrimidine Ribonucleotides Interconversion	4.90E-02			5	EGA2-1
Phagosome Maturation	1.35E-03			5	EGA2-2
RAN Signaling	5.89E-03			4	EGA2-1
Pyrimidine Deoxyribonucleotides De Novo Biosynthesis I	1.78E-02			4	EGA2-1
5-aminoimidazole Ribonucleotide Biosynthesis I	8.91E-05			3	EGA2-1
Urate Biosynthesis/Inosine 5'-phosphate Degradation	1.82E-02			3	EGA2-1
Telomere Extension by Telomerase	2.69E-02			3	EGA2-1
Vitamin-C Transport	3.24E-02			3	EGA2-1
Hypusine Biosynthesis	5.75E-03			2	EGA2-1
Thioredoxin Pathway	3.55E-02			2	EGA2-1
Purine Nucleotides De Novo Biosynthesis II	1.58E-03			2	EGA2-2
Cell Cycle: G2/M DNA Damage Checkpoint Regulation	2.95E-02			2	EGA2-2
mTOR Signaling	2.19E-02			2	EGA2-4
Huntington's Disease Signaling	3.31E-02			2	EGA2-4
PDGF Signaling	4.68E-03			2	EGA2-4
Ephrin A Signaling	2.14E-03			2	EGA2-4
Growth Hormone Signaling	4.27E-03			2	EGA2-4
Neuropathic Pain Signaling In Dorsal Horn Neurons	7.59E-03			2	EGA2-4
Renin-Angiotensin Signaling	8.51E-03			2	EGA2-4
Phagosome Formation	9.55E-03			2	EGA2-4
Tec Kinase Signaling	1.58E-02			2	EGA2-4
Neuroinflammation Signaling Pathway	4.90E-02			2	EGA2-4

a) The p-value: statistical overlap of differentially expressed gene list and gene set

b) Z-score: $z>1.96$ to be significantly activated or increased, and those with $z< -1.96$ to be significantly inhibited