

GeDiPNet Cluster 215 -- Enriched Pathways

Pathway enrichment: KEGG + Reactome, upper-tail hypergeometric test, Benjamini-Hochberg FDR-corrected. Fold enrichment = (overlap / cluster gene count) / (pathway gene count / universe size). Top 15 pathways per cluster by q-value. See [scripts/build_cluster_enrichment.php](#) on [gedipnet.bicnirrh.res.in](#). Data as of: 2026-10-08 03:30:07. · Rows: 15 · Generated: 2026-10-08 07:59:06

Pathway	Source	Overlap Genes	Overlap Gene Names	Pathway Gene Count	Cluster Gene Count	Fold Enrichment	P-value	FDR Q-value
Neuroactive ligand-receptor interaction	KEGG	57	GRIN2A, ADRA1A, ADRA2A, ADRA2B, CHRM1, CHRM2, CHRM3, CHRNA1, CHRNA7, CRH, GABRA1, GABRA2	370	373	4.96	2.157e-24	3.191e-21
Nicotine addiction	KEGG	18	GRIN2A, CHRNA7, GABRA1, GABRA2, GABRB2, GABRB3, GABRD, GABRG1, GABRG2, GRIA1, GRIN2B, CACNA1A	41	373	14.14	5.070e-17	2.139e-14
GABAergic synapse	KEGG	20	CACNA1C, GABRA1, GABRA2, GABRB2, GABRB3, GABRD, GABRG1, GABRG2, GLS, GNAO1, SLC12A5, SLC6A1	89	373	7.24	2.348e-12	4.492e-10
cAMP signaling pathway	KEGG	31	GRIN2A, AKT1, ATP1A2, ATP1A3, BDNF, CACNA1C, CHRM1, CHRM2, CRH, FOS, GRIA1, GRIN2B	226	373	4.42	2.857e-12	5.346e-10
Retrograde endocannabinoid signaling	KEGG	24	CACNA1C, GABRA1, GABRA2, GABRB2, GABRB3, GABRD, GABRG1, GABRG2, GNAO1, GRIA1, GRM1, ND2	149	373	5.19	2.918e-11	4.522e-9
Cholinergic synapse	KEGG	21	ACHE, AKT1, CACNA1C, CHRM1, CHRM2, CHRM3, CHRNA7, FOS, GNAO1, KCNQ2, CACNA1A, CHRNB2	115	373	5.88	4.509e-11	6.672e-9
Hormone signaling	KEGG	28	ADRA1A, ADRA2A, ADRA2B, CRH, GNAO1, OPRD1, OPRM1, POMC, TSHR, ADCY9, ADRA1B, AGT	219	373	4.12	1.820e-10	2.351e-8
Highly calcium permeable postsynaptic nicotinic acetylcholine receptors	Reactome	8	CHRNA1, CHRNA7, CHRNB2, CHRNA3, CHRNA4, CHRNA5, CHRNB4, CHRNA2	12	373	21.47	3.569e-10	4.272e-8
Highly calcium permeable nicotinic acetylcholine receptors	Reactome	7	CHRNA1, CHRNB2, CHRNA3, CHRNA4, CHRNA5, CHRNB4, CHRNA2	9	373	25.04	8.998e-10	9.741e-8
Glutamatergic synapse	KEGG	19	GRIN2A, CACNA1C, GLS, GNAO1, GRIA1, GRIN2B, GRM1, GRM3, PLA2G4A, SLC1A1, SLC1A2, SLC1A3	116	373	5.27	2.623e-9	2.567e-7
Calcium signaling pathway	KEGG	27	CACNA1H, GRIN2A, ADRA1A, CACNA1C, CHRM1, CHRM2, CHRM3, CHRNA7, GDNF, GRIN2B, GRM1, P2RX2	254	373	3.42	2.281e-8	1.767e-6
Taste transduction	KEGG	15	SCN2A, CACNA1C, CHRM3, GABRA1, GABRA2, GRM1, HTR1A, P2RX2, SCN3A, SCN9A, CACNA1A, HCN4	86	373	5.62	5.331e-8	3.749e-6
Morphine addiction	KEGG	15	GABRA1, GABRA2, GABRB2, GABRB3, GABRD, GABRG1, GABRG2, GNAO1, OPRM1, CACNA1A, SLC32A1, ADCY9	91	373	5.31	1.165e-7	7.482e-6
GABA receptor activation	Reactome	7	ARHGEF9, GABRA1, GABRA2, GABRB2, GABRB3, GABRG2, GABRA5	16	373	14.09	2.367e-7	1.383e-5
Phase 0 - rapid depolarisation	Reactome	10	SCN2A, SCN8A, CACNA1C, CACNB4, SCN1A, SCN3A, SCN9A, CACNA2D2, SCN1B, SCN4A	44	373	7.32	7.154e-7	3.635e-5