Top genes by P−value Permulated

Gene	Rho	N	P	p.adj	permPValue	qValueNoperm	qValuePerm
RNF19B	−0.1871950	154	4.703e−03	3.201e−02	9.951e−05	2.179e−01	2.149e−02
CMBL	−0.3218582	162	6.152e−07	3.771e−05	1.018e−04	2.284e−03	2.149e−02
CRYGB	0.1984506	108	1.233e−02	6.323e−02	1.026e−04	3.243e−01	2.149e−02
GADD45GIP1	−0.2045067	147	2.560e−03	2.044e−02	1.032e−04	1.631e−01	2.149e−02
NEUROG1	−0.2397634	128	9.793e−04	9.950e−03	1.033e−04	1.011e−01	2.149e−02
DECR2	−0.2354391	162	2.648e−04	3.753e−03	1.037e−04	5.319e−02	2.149e−02
CHRDL2	−0.2359814	182	1.055e−04	1.874e−03	1.038e−04	3.328e−02	2.149e−02
HACD3	−0.2229536	132	1.848e−03	1.614e−02	1.040e−04	1.409e−01	2.149e−02
GMFG	−0.2444349	54	3.081e−02	1.206e−01	1.040e−04	4.723e−01	2.149e−02
LINGO2	0.2889738	123	9.886e−05	1.794e−03	1.041e−04	3.255e−02	2.149e−02
CERS5	−0.3208861	125	1.307e−05	4.029e−04	1.048e−04	1.240e−02	2.149e−02
CC2D1A	−0.2527257	207	9.344e−06	3.102e−04	1.049e−04	1.029e−02	2.149e−02
CAB39L	0.2192194	110	5.264e−03	3.442e−02	1.049e−04	2.250e−01	2.149e−02
ECSIT	−0.2510422	198	1.673e−05	4.891e−04	1.051e−04	1.428e−02	2.149e−02
EBI3	−0.2541196	186	2.423e−05	6.574e−04	1.051e−04	1.782e−02	2.149e−02
PLAC9	−0.2063483	142	2.786e−03	2.173e−02	1.051e−04	1.693e−01	2.149e−02
RAVER2	−0.2123411	189	3.759e−04	4.825e−03	1.051e−04	6.192e−02	2.149e−02
RPUSD1	−0.2733245	163	2.160e−05	6.021e−04	1.053e−04	1.678e−02	2.149e−02
MRI1	−0.1560119	168	1.382e−02	6.861e−02	1.054e−04	3.407e−01	2.149e−02
COMMD10	−0.2972601	122	6.651e−05	1.334e−03	1.055e−04	2.675e−02	2.149e−02
NFATC4	−0.2036805	183	7.902e−04	8.442e−03	1.055e−04	9.018e−02	2.149e−02
TMPRSS9	−0.4136218	203	6.860e−13	7.318e−10	1.055e−04	7.807e−07	2.149e−02
ODF3L2	−0.3850582	171	8.734e−10	2.369e−07	1.057e−04	6.424e−05	2.149e−02
TMPRSS2	−0.3288022	200	1.456e−08	1.926e−06	1.058e−04	2.529e−04	2.149e−02
HORMAD1	0.3484990	176	1.798e−08	2.266e−06	1.060e−04	2.838e−04	2.149e−02

Top genes by Q−Value Permulated

Gene	Rho	N	P	p.adj	permPValue	qValueNoperm	qValuePerm
RPUSD1	−0.2733245	163	2.160e−05	6.021e−04	1.053e−04	1.678e−02	2.149e−02
MRI1	−0.1560119	168	1.382e−02	6.861e−02	1.054e−04	3.407e−01	2.149e−02
CREB3L3	−0.3087975	191	1.998e−07	1.567e−05	1.062e−04	1.229e−03	2.149e−02
DECR2	−0.2354391	162	2.648e−04	3.753e−03	1.037e−04	5.319e−02	2.149e−02
EBI3	−0.2541196	186	2.423e−05	6.574e−04	1.051e−04	1.782e−02	2.149e−02
ACRBP	0.3046642	191	2.899e−07	2.041e−05	1.145e−04	1.432e−03	2.149e−02
RGS2	0.2595226	111	9.043e−04	9.361e−03	1.080e−04	9.689e−02	2.149e−02
CRYGB	0.1984506	108	1.233e−02	6.323e−02	1.026e−04	3.243e−01	2.149e−02
HACD3	−0.2229536	132	1.848e−03	1.614e−02	1.040e−04	1.409e−01	2.149e−02
CHRDL2	−0.2359814	182	1.055e−04	1.874e−03	1.038e−04	3.328e−02	2.149e−02
ARHGAP31	−0.2334420	215	3.009e−05	7.597e−04	1.081e−04	1.918e−02	2.149e−02
GFM1	−0.1676698	190	4.867e−03	3.272e−02	1.071e−04	2.200e−01	2.149e−02
NNT	0.1996167	171	1.481e−03	1.365e−02	1.088e−04	1.257e−01	2.149e−02
ECSIT	−0.2510422	198	1.673e−05	4.891e−04	1.051e−04	1.428e−02	2.149e−02
COMMD10	−0.2972601	122	6.651e−05	1.334e−03	1.055e−04	2.675e−02	2.149e−02
SSC4D	−0.1973770	185	1.075e−03	1.071e−02	1.073e−04	1.064e−01	2.149e−02
ITGB6	−0.2495221	189	2.926e−05	7.469e−04	1.097e−04	1.906e−02	2.149e−02
RHPN1	−0.2535907	196	1.518e−05	4.558e−04	1.094e−04	1.368e−02	2.149e−02
RAVER2	−0.2123411	189	3.759e−04	4.825e−03	1.051e−04	6.192e−02	2.149e−02
HAAO	−0.2567148	170	4.594e−05	1.037e−03	1.119e−04	2.337e−02	2.149e−02
CLDN1	0.2127884	101	9.506e−03	5.265e−02	1.090e−04	2.916e−01	2.149e−02
STT3B	0.2860180	67	4.730e−03	3.216e−02	1.071e−04	2.181e−01	2.149e−02
CMBL	−0.3218582	162	6.152e−07	3.771e−05	1.018e−04	2.284e−03	2.149e−02
LCMT2	−0.1753364	201	2.450e−03	1.974e−02	1.076e−04	1.591e−01	2.149e−02
HEG1	−0.1828477	212	1.173e−03	1.140e−02	1.093e−04	1.107e−01	2.149e−02

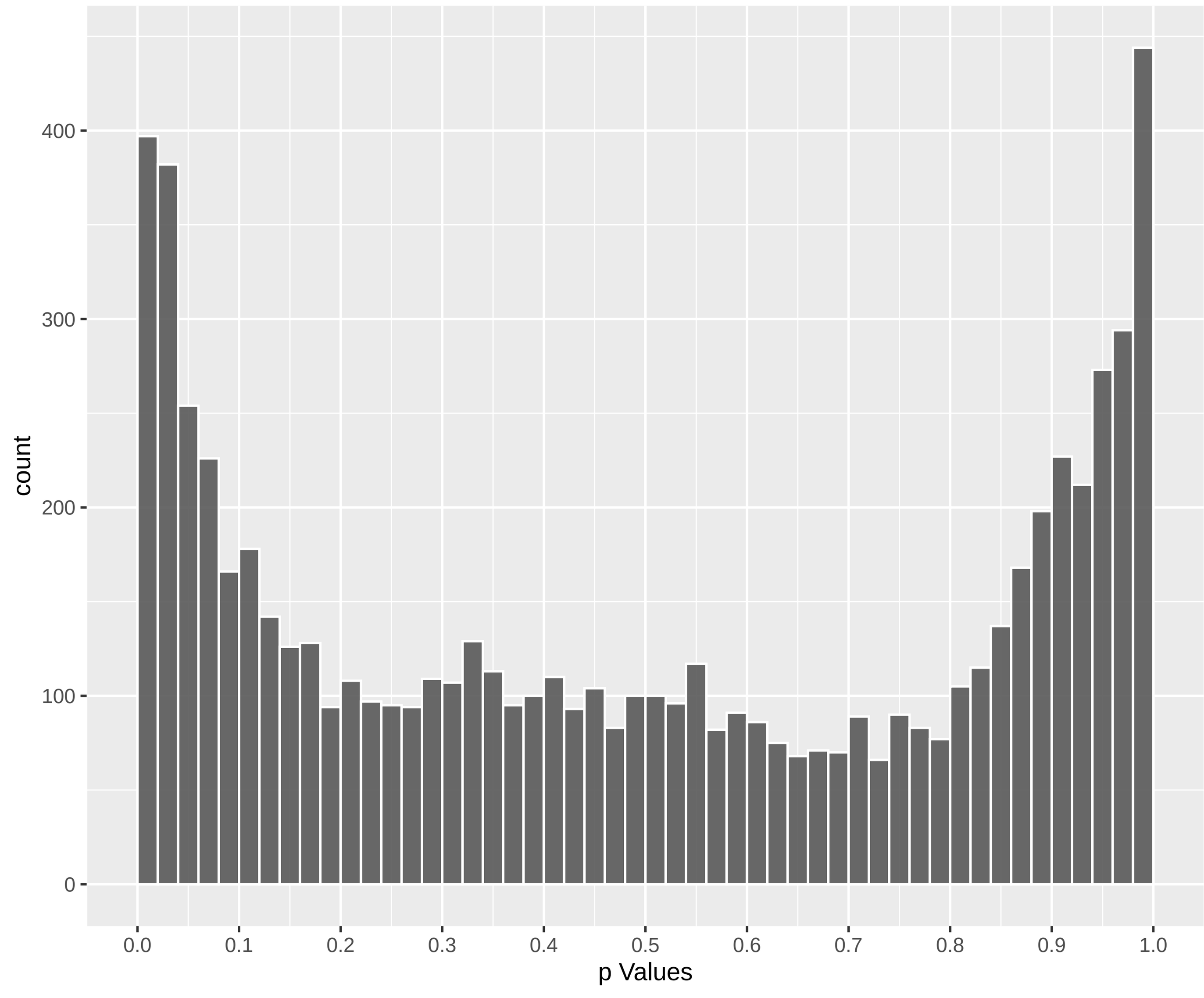
Top genes by P−value non−permulated

Gene	Rho	N	P	p.adj	permPValue	qValueNoperm	qValuePerm
PKD1	−0.5057834	201	2.358e−18	3.773e−14	2.388e−02	6.037e−10	2.760e−01
WDR90	−0.4645754	214	1.184e−16	6.972e−13	1.854e−02	3.719e−09	2.707e−01
SLX4	−0.4628225	215	1.307e−16	6.972e−13	8.073e−03	3.719e−09	1.797e−01
MYO16	−0.4612209	202	1.363e−15	5.452e−12	8.366e−03	2.181e−08	1.835e−01
SPTA1	−0.4220820	235	2.999e−15	9.599e−12	2.529e−02	3.072e−08	2.760e−01
SPEF2	0.4220167	229	6.836e−15	1.823e−11	2.550e−02	4.863e−08	2.760e−01
ADGRV1	−0.4192920	229	1.016e−14	2.323e−11	5.435e−04	5.311e−08	3.549e−02
ABCC6	−0.4066629	226	9.028e−14	1.533e−10	3.355e−02	2.454e−07	2.823e−01
CNTRL	−0.4013757	232	8.962e−14	1.533e−10	1.346e−01	2.454e−07	4.714e−01
TMEM255B	−0.4704733	169	9.583e−14	1.533e−10	5.864e−04	2.454e−07	3.650e−02
SPG11	−0.3861597	234	5.854e−13	6.691e−10	2.163e−02	7.648e−07	2.760e−01
ABCA3	−0.4093067	209	5.491e−13	6.691e−10	1.963e−04	7.648e−07	2.852e−02
BDP1	−0.4437222	178	5.601e−13	6.691e−10	1.278e−01	7.648e−07	4.599e−01
UNKL	−0.4498570	174	4.974e−13	6.691e−10	2.175e−03	7.648e−07	8.487e−02
TMPRSS9	−0.4136218	203	6.860e−13	7.318e−10	1.055e−04	7.807e−07	2.149e−02
TELO2	−0.4016607	213	8.942e−13	8.943e−10	2.565e−03	8.944e−07	9.547e−02
MYO3A	−0.4024642	211	1.032e−12	9.715e−10	1.134e−04	9.144e−07	2.149e−02
PPL	−0.3961348	214	1.615e−12	1.360e−09	5.424e−01	1.145e−06	9.553e−01
ITIH5	−0.4039690	206	1.586e−12	1.360e−09	2.126e−02	1.145e−06	2.760e−01
MCF2L	−0.4173753	192	1.837e−12	1.470e−09	5.193e−01	1.176e−06	9.381e−01
ANKS3	−0.4127965	193	2.802e−12	2.135e−09	9.303e−02	1.534e−06	3.957e−01
WFIKKN1	−0.4501661	162	3.076e−12	2.205e−09	1.063e−04	1.534e−06	2.149e−02
UMODL1	−0.4054565	199	3.169e−12	2.205e−09	1.061e−04	1.534e−06	2.149e−02
DPY19L3	0.4150878	186	5.343e−12	3.562e−09	5.408e−01	2.375e−06	9.548e−01
ATAD5	−0.3749701	226	6.267e−12	4.011e−09	1.816e−02	2.567e−06	2.679e−01

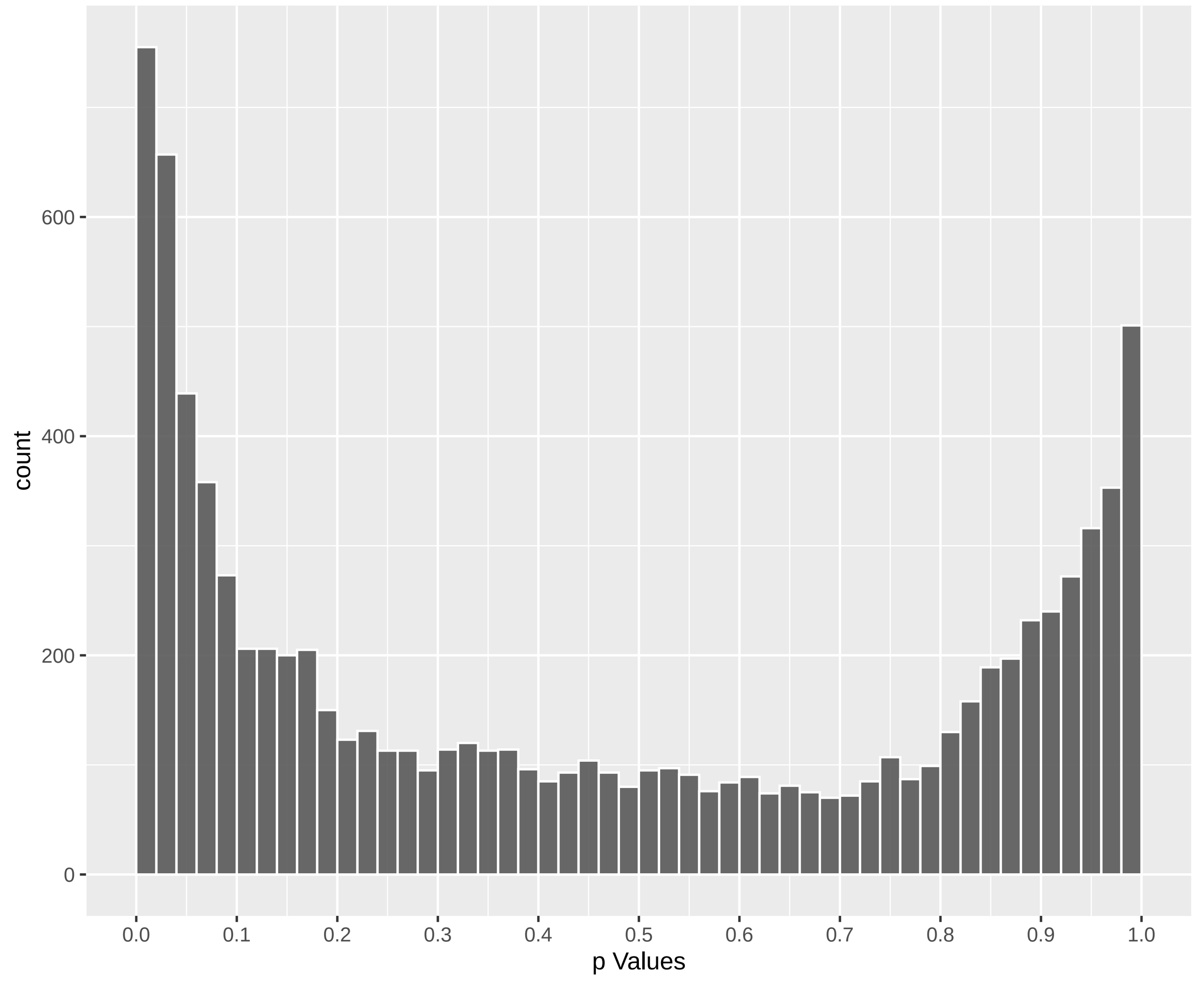
Top genes by Q−Value non−permulated

Gene	Rho	N	P	p.adj	permPValue	qValueNoperm	qValuePerm
PKD1	−0.5057834	201	2.358e−18	3.773e−14	2.388e−02	6.037e−10	2.760e−01
WDR90	−0.4645754	214	1.184e−16	6.972e−13	1.854e−02	3.719e−09	2.707e−01
SLX4	−0.4628225	215	1.307e−16	6.972e−13	8.073e−03	3.719e−09	1.797e−01
MYO16	−0.4612209	202	1.363e−15	5.452e−12	8.366e−03	2.181e−08	1.835e−01
SPTA1	−0.4220820	235	2.999e−15	9.599e−12	2.529e−02	3.072e−08	2.760e−01
SPEF2	0.4220167	229	6.836e−15	1.823e−11	2.550e−02	4.863e−08	2.760e−01
ADGRV1	−0.4192920	229	1.016e−14	2.323e−11	5.435e−04	5.311e−08	3.549e−02
ABCC6	−0.4066629	226	9.028e−14	1.533e−10	3.355e−02	2.454e−07	2.823e−01
CNTRL	−0.4013757	232	8.962e−14	1.533e−10	1.346e−01	2.454e−07	4.714e−01
TMEM255B	−0.4704733	169	9.583e−14	1.533e−10	5.864e−04	2.454e−07	3.650e−02
SPG11	−0.3861597	234	5.854e−13	6.691e−10	2.163e−02	7.648e−07	2.760e−01
ABCA3	−0.4093067	209	5.491e−13	6.691e−10	1.963e−04	7.648e−07	2.852e−02
BDP1	−0.4437222	178	5.601e−13	6.691e−10	1.278e−01	7.648e−07	4.599e−01
UNKL	−0.4498570	174	4.974e−13	6.691e−10	2.175e−03	7.648e−07	8.487e−02
TMPRSS9	−0.4136218	203	6.860e−13	7.318e−10	1.055e−04	7.807e−07	2.149e−02
TELO2	−0.4016607	213	8.942e−13	8.943e−10	2.565e−03	8.944e−07	9.547e−02
MYO3A	−0.4024642	211	1.032e−12	9.715e−10	1.134e−04	9.144e−07	2.149e−02
PPL	−0.3961348	214	1.615e−12	1.360e−09	5.424e−01	1.145e−06	9.553e−01
ITIH5	−0.4039690	206	1.586e−12	1.360e−09	2.126e−02	1.145e−06	2.760e−01
MCF2L	−0.4173753	192	1.837e−12	1.470e−09	5.193e−01	1.176e−06	9.381e−01
ANKS3	−0.4127965	193	2.802e−12	2.135e−09	9.303e−02	1.534e−06	3.957e−01
WFIKKN1	−0.4501661	162	3.076e−12	2.205e−09	1.063e−04	1.534e−06	2.149e−02
UMODL1	−0.4054565	199	3.169e−12	2.205e−09	1.061e−04	1.534e−06	2.149e−02
DPY19L3	0.4150878	186	5.343e−12	3.562e−09	5.408e−01	2.375e−06	9.548e−01
ATAD5	−0.3749701	226	6.267e−12	4.011e−09	1.816e−02	2.567e−06	2.679e−01

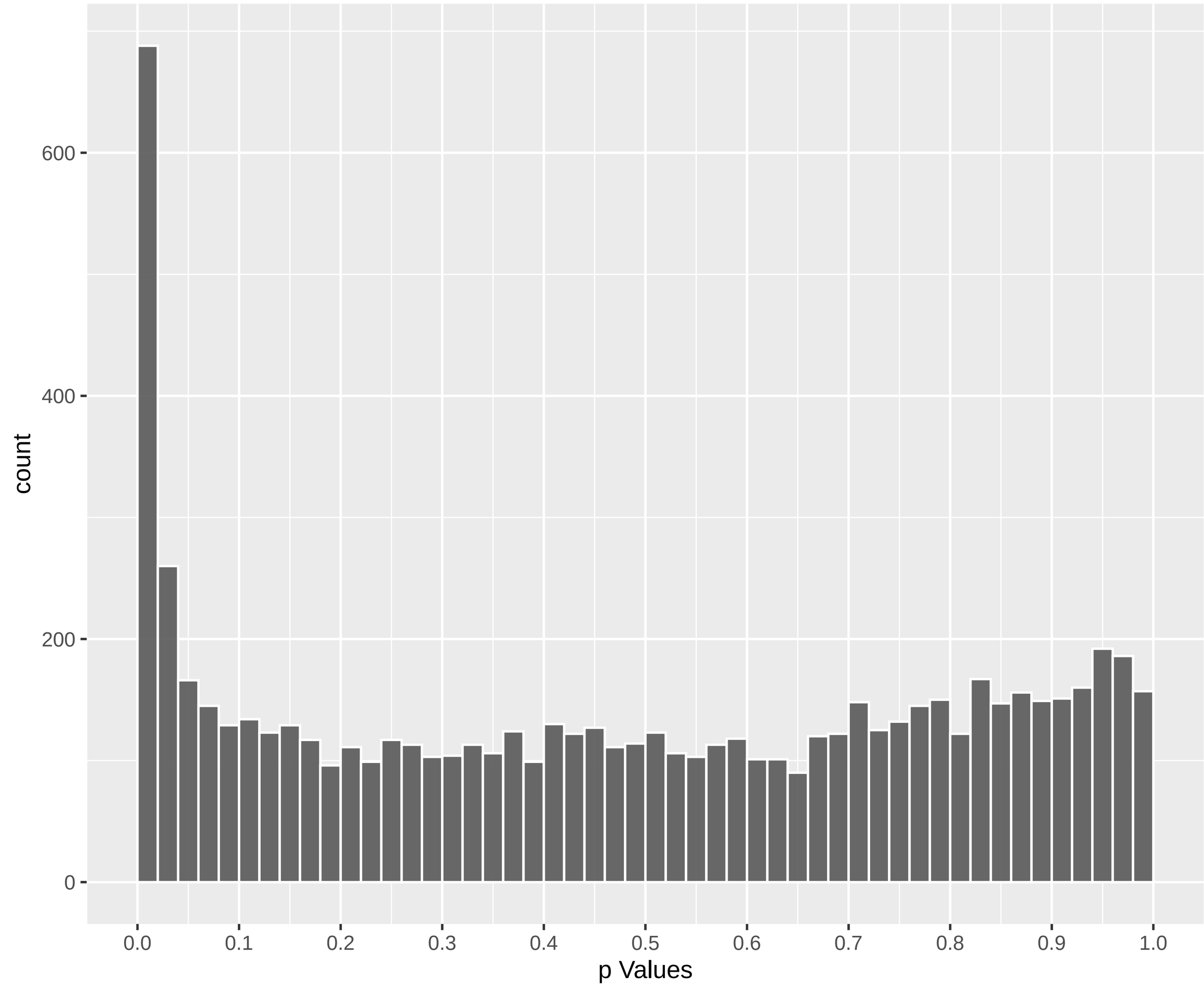
Positive Rho Permulated



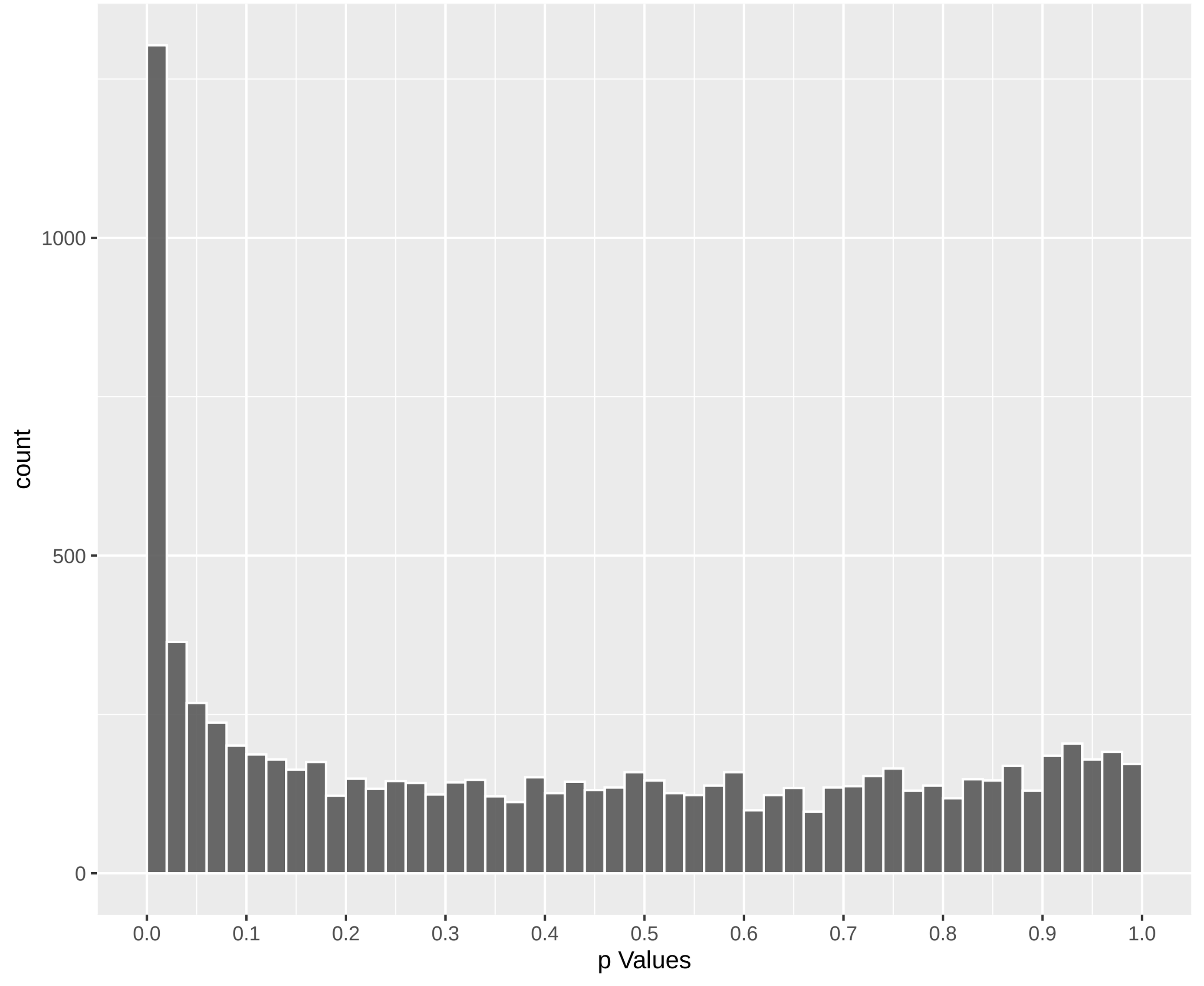
Negative Rho Permulated



Positive Rho Non−permulated



Negative Rho Non−permulated



Top Positive genes by P−value Permulated

Gene	Rho	N	P	p.adj	permPValue	qValueNoperm	qValuePerm
CRYGB	0.1984506	108	1.233e−02	6.323e−02	1.026e−04	3.243e−01	2.149e−02
LINGO2	0.2889738	123	9.886e−05	1.794e−03	1.041e−04	3.255e−02	2.149e−02
CAB39L	0.2192194	110	5.264e−03	3.442e−02	1.049e−04	2.250e−01	2.149e−02
HORMAD1	0.3484990	176	1.798e−08	2.266e−06	1.060e−04	2.838e−04	2.149e−02
GNA14	0.2256336	100	6.220e−03	3.864e−02	1.061e−04	2.400e−01	2.149e−02
STT3B	0.2860180	67	4.730e−03	3.216e−02	1.071e−04	2.181e−01	2.149e−02
SKIV2L	0.3036541	202	1.444e−07	1.216e−05	1.072e−04	1.024e−03	2.149e−02
EHD3	0.3658636	112	2.602e−06	1.122e−04	1.077e−04	4.840e−03	2.149e−02
RGS2	0.2595226	111	9.043e−04	9.361e−03	1.080e−04	9.689e−02	2.149e−02
NDUFV1	0.2031905	120	6.862e−03	4.136e−02	1.082e−04	2.492e−01	2.149e−02

Top Negative genes by P−value Permulated

Gene	Rho	N	P	p.adj	permPValue	qValueNoperm	qValuePerm
RNF19B	−0.1871950	154	4.703e−03	3.201e−02	9.951e−05	2.179e−01	2.149e−02
CMBL	−0.3218582	162	6.152e−07	3.771e−05	1.018e−04	2.284e−03	2.149e−02
GADD45GIP1	−0.2045067	147	2.560e−03	2.044e−02	1.032e−04	1.631e−01	2.149e−02
NEUROG1	−0.2397634	128	9.793e−04	9.950e−03	1.033e−04	1.011e−01	2.149e−02
DECR2	−0.2354391	162	2.648e−04	3.753e−03	1.037e−04	5.319e−02	2.149e−02
CHRDL2	−0.2359814	182	1.055e−04	1.874e−03	1.038e−04	3.328e−02	2.149e−02
HACD3	−0.2229536	132	1.848e−03	1.614e−02	1.040e−04	1.409e−01	2.149e−02
GMFG	−0.2444349	54	3.081e−02	1.206e−01	1.040e−04	4.723e−01	2.149e−02
CERS5	−0.3208861	125	1.307e−05	4.029e−04	1.048e−04	1.240e−02	2.149e−02
CC2D1A	−0.2527257	207	9.344e−06	3.102e−04	1.049e−04	1.029e−02	2.149e−02

Top Positive genes by P−value non−permulated

Gene	Rho	N	P	p.adj	permPValue	qValueNoperm	qValuePerm
SPEF2	0.4220167	229	6.836e−15	1.823e−11	2.550e−02	4.863e−08	2.760e−01
DPY19L3	0.4150878	186	5.343e−12	3.562e−09	5.408e−01	2.375e−06	9.548e−01
MAP3K15	0.3855619	200	3.036e−11	1.619e−08	1.109e−01	8.281e−06	4.316e−01
UNC45A	0.3779295	196	1.140e−10	3.964e−08	6.196e−03	1.379e−05	1.583e−01
SHISA4	0.4946142	105	7.821e−10	2.235e−07	2.632e−01	6.331e−05	6.749e−01
ZBTB41	0.3933138	160	1.402e−09	3.486e−07	1.187e−01	8.452e−05	4.460e−01
DENND1B	0.3612950	189	1.438e−09	3.486e−07	3.418e−02	8.452e−05	2.827e−01
MTHFR	0.3536911	196	1.603e−09	3.772e−07	8.771e−03	8.750e−05	1.882e−01
SETX	0.3484304	201	1.744e−09	3.986e−07	3.153e−02	8.750e−05	2.799e−01
BCLAF3	0.3481278	201	1.801e−09	4.024e−07	4.897e−01	8.750e−05	9.144e−01

Top Negative genes by P−value non−permulated

Gene	Rho	N	P	p.adj	permPValue	qValueNoperm	qValuePerm
PKD1	−0.5057834	201	2.358e−18	3.773e−14	2.388e−02	6.037e−10	2.760e−01
WDR90	−0.4645754	214	1.184e−16	6.972e−13	1.854e−02	3.719e−09	2.707e−01
SLX4	−0.4628225	215	1.307e−16	6.972e−13	8.073e−03	3.719e−09	1.797e−01
MYO16	−0.4612209	202	1.363e−15	5.452e−12	8.366e−03	2.181e−08	1.835e−01
SPTA1	−0.4220820	235	2.999e−15	9.599e−12	2.529e−02	3.072e−08	2.760e−01
ADGRV1	−0.4192920	229	1.016e−14	2.323e−11	5.435e−04	5.311e−08	3.549e−02
ABCC6	−0.4066629	226	9.028e−14	1.533e−10	3.355e−02	2.454e−07	2.823e−01
CNTRL	−0.4013757	232	8.962e−14	1.533e−10	1.346e−01	2.454e−07	4.714e−01
TMEM255B	−0.4704733	169	9.583e−14	1.533e−10	5.864e−04	2.454e−07	3.650e−02
SPG11	−0.3861597	234	5.854e−13	6.691e−10	2.163e−02	7.648e−07	2.760e−01