

Supplementary tables and figures

Table S1. Characteristics of transcriptomic datasets included in the present study.

Dataset	Species	Platform	Sample type	Exposure condition	Selected samples	Control samples	Data type
GSE18206	Human	GPL570 (Affymetrix Human Genome U133 Plus 2.0 Array)	Skin biopsy	SLS or nonanoic acid exposure	Day 11 irritant-exposed samples (n = 6)	Baseline 0 h samples (n = 18)	Microarray
GSE168735	Human	GPL29838 (Affymetrix PrimeView Human Gene Expression Array)	Skin biopsy	SLS, nonanoic acid, or cantharidin exposure	All irritant-exposed samples (n = 22)	Vehicle/reference controls (n = 39)	Microarray
GSE95317	C57BL/6 wild-type mice	Illumina MiSeq RNA-seq	Skin tissue	BKC-induced ICD	Day 7 BKC-treated samples (n = 3)	Untreated wild-type mice (n = 3)	RNA-seq

Abbreviations: BKC, benzalkonium chloride; ICD, irritant contact dermatitis; RNA-seq, RNA sequencing; SLS, sodium lauryl sulfate.

Table S2. The 174 shared prioritized genes (90th-percentile π -value ranking) and their expression statistics in GSE18206.

Ensembl ID	Gene symbol	<i>P</i> value	Log2FC	π -value
ENSG00000152253	<i>SPC25</i>	1.31e-10	1.504	14.867
ENSG00000117399	<i>CDC20</i>	6.66e-10	1.471	13.496
ENSG00000089685	<i>BIRC5</i>	4.50e-10	1.389	12.979
ENSG00000137804	<i>NUSAP1</i>	2.17e-10	1.247	12.047
ENSG00000099994	<i>SUSD2</i>	2.21e-07	-1.802	11.992
ENSG00000100526	<i>CDKN3</i>	3.24e-10	1.251	11.872
ENSG00000188486	<i>H2AX</i>	2.81e-10	1.221	11.660
ENSG00000163220	<i>SI00A9</i>	3.20e-05	2.520	11.329
ENSG00000157456	<i>CCNB2</i>	7.98e-09	1.258	10.191
ENSG00000171848	<i>RRM2</i>	1.20e-07	1.463	10.126
ENSG00000117594	<i>HSD11B1</i>	2.96e-06	-1.823	10.080
ENSG00000068489	<i>PRR11</i>	8.24e-09	1.226	9.909
ENSG00000167900	<i>TK1</i>	2.57e-09	1.122	9.637
ENSG00000117650	<i>NEK2</i>	1.59e-08	1.178	9.188
ENSG00000178999	<i>AURKB</i>	4.18e-09	1.088	9.116
ENSG00000169550	<i>MUC15</i>	8.65e-07	-1.492	9.049
ENSG00000112984	<i>KIF20A</i>	1.23e-07	1.284	8.869
ENSG00000167513	<i>CDT1</i>	5.48e-08	1.220	8.862
ENSG00000080986	<i>NDC80</i>	1.23e-08	1.094	8.655
ENSG00000102265	<i>TIMP1</i>	7.26e-08	1.175	8.391
ENSG00000198901	<i>PRC1</i>	6.19e-09	1.018	8.358
ENSG00000134057	<i>CCNB1</i>	5.78e-08	1.112	8.052
ENSG00000109805	<i>NCAPG</i>	1.62e-08	1.028	8.007
ENSG00000087586	<i>AURKA</i>	3.73e-09	0.918	7.736
ENSG00000206073	<i>SERPINB4</i>	9.97e-04	2.573	7.722
ENSG00000166803	<i>PCLAF</i>	3.62e-07	1.193	7.687
ENSG00000073910	<i>FRY</i>	2.55e-06	-1.364	7.631
ENSG00000131747	<i>TOP2A</i>	1.23e-07	1.104	7.630
ENSG00000165304	<i>MELK</i>	7.10e-08	1.058	7.565
ENSG00000156970	<i>BUB1B</i>	3.81e-08	0.952	7.061
ENSG00000113368	<i>LMNB1</i>	2.78e-07	1.048	6.871
ENSG00000123975	<i>CKS2</i>	6.66e-07	1.083	6.691
ENSG00000057149	<i>SERPINB3</i>	2.66e-05	1.454	6.651
ENSG00000137812	<i>KNL1</i>	8.37e-08	0.935	6.619
ENSG00000103257	<i>SLC7A5</i>	1.23e-05	1.275	6.259
ENSG00000090382	<i>LYZ</i>	2.41e-04	1.719	6.218
ENSG00000114771	<i>AADAC</i>	6.50e-05	-1.483	6.209
ENSG00000134569	<i>LRP4</i>	1.13e-07	-0.872	6.057
ENSG00000135451	<i>TROAP</i>	4.36e-09	0.721	6.031
ENSG00000024526	<i>DEPDC1</i>	1.41e-08	0.759	5.955

ENSG00000134121	<i>CHLI</i>	1.39e-05	-1.203	5.844
ENSG00000088280	<i>ASAP3</i>	3.59e-08	-0.783	5.827
ENSG00000204103	<i>MAFB</i>	1.25e-06	-0.971	5.731
ENSG00000168078	<i>PBK</i>	5.97e-06	1.070	5.592
ENSG00000169679	<i>BUB1</i>	1.26e-07	0.791	5.458
ENSG00000168496	<i>FEN1</i>	5.22e-07	0.839	5.271
ENSG00000146410	<i>MTFR2</i>	4.19e-07	0.825	5.260
ENSG00000101003	<i>GINS1</i>	5.78e-08	0.719	5.206
ENSG00000143546	<i>SI00A8</i>	1.74e-03	1.878	5.183
ENSG00000237649	<i>KIFC1</i>	5.91e-09	0.622	5.121
ENSG00000120327	<i>PCDHB14</i>	3.63e-06	-0.940	5.112
ENSG00000171320	<i>ESCO2</i>	2.27e-06	0.903	5.097
ENSG00000138180	<i>CEP55</i>	1.01e-05	1.013	5.059
ENSG00000140525	<i>FANCI</i>	6.20e-07	0.791	4.912
ENSG00000169442	<i>CD52</i>	4.07e-05	1.114	4.893
ENSG00000095637	<i>SORBS1</i>	6.58e-07	-0.781	4.828
ENSG00000088325	<i>TPX2</i>	2.81e-07	0.695	4.555
ENSG00000182628	<i>SKA2</i>	5.31e-07	0.723	4.535
ENSG00000205420	<i>KRT6A</i>	5.99e-04	1.402	4.519
ENSG00000172818	<i>OVOL1</i>	1.09e-05	-0.896	4.447
ENSG00000145386	<i>CCNA2</i>	1.50e-05	0.913	4.402
ENSG00000103187	<i>COTL1</i>	1.31e-05	0.901	4.401
ENSG00000174808	<i>BTC</i>	9.16e-04	-1.420	4.313
ENSG00000131153	<i>GINS2</i>	2.41e-06	0.765	4.299
ENSG00000170312	<i>CDK1</i>	3.80e-05	0.966	4.272
ENSG00000106078	<i>COBL</i>	1.08e-06	-0.704	4.198
ENSG00000163625	<i>WDFY3</i>	9.92e-06	-0.839	4.198
ENSG00000106415	<i>GLCCII</i>	1.27e-04	-1.043	4.064
ENSG00000124107	<i>SLPI</i>	2.92e-06	-0.716	3.962
ENSG00000077264	<i>PAK3</i>	1.05e-04	-0.992	3.948
ENSG00000138160	<i>KIF11</i>	7.20e-06	0.762	3.918
ENSG00000198722	<i>UNC13B</i>	6.92e-07	-0.635	3.911
ENSG00000117632	<i>STMN1</i>	4.30e-06	0.721	3.869
ENSG00000151150	<i>ANK3</i>	5.13e-06	-0.730	3.864
ENSG00000164104	<i>HMGB2</i>	2.68e-06	0.686	3.824
ENSG00000003402	<i>CFLAR</i>	3.18e-05	-0.848	3.815
ENSG00000128626	<i>MRPS12</i>	2.52e-05	0.827	3.801
ENSG00000054793	<i>ATP9A</i>	1.23e-04	0.966	3.779
ENSG00000155307	<i>SAMSN1</i>	3.84e-04	1.097	3.747
ENSG00000035499	<i>DEPDC1B</i>	4.21e-06	0.685	3.680
ENSG00000163918	<i>RFC4</i>	7.79e-06	0.717	3.662
ENSG00000071539	<i>TRIP13</i>	1.52e-06	0.625	3.638
ENSG00000181163	<i>NPM1</i>	7.99e-07	0.594	3.620
ENSG00000134755	<i>DSC2</i>	1.31e-05	0.737	3.599
ENSG00000144136	<i>SLC20A1</i>	4.25e-05	0.822	3.594

ENSG00000123219	<i>CENPK</i>	1.73e-05	0.749	3.565
ENSG00000093009	<i>CDC45</i>	2.94e-05	0.779	3.530
ENSG00000132646	<i>PCNA</i>	2.46e-05	0.765	3.528
ENSG00000118971	<i>CCND2</i>	2.90e-05	0.775	3.517
ENSG00000170113	<i>NIPAI</i>	3.99e-05	0.796	3.503
ENSG00000069667	<i>RORA</i>	1.94e-05	-0.737	3.473
ENSG00000013810	<i>TACC3</i>	3.17e-06	0.627	3.450
ENSG00000077312	<i>SNRPA</i>	1.19e-05	0.700	3.446
ENSG00000189182	<i>KRT77</i>	9.70e-05	-0.858	3.443
ENSG00000133401	<i>PDZD2</i>	5.42e-05	-0.801	3.416
ENSG00000172264	<i>MACROD2</i>	6.19e-05	-0.810	3.408
ENSG00000137563	<i>GGH</i>	2.54e-04	-0.946	3.403
ENSG00000113916	<i>BCL6</i>	3.01e-05	-0.725	3.277
ENSG00000075618	<i>FSCN1</i>	2.18e-04	0.889	3.256
ENSG00000138162	<i>TACC2</i>	2.21e-05	-0.696	3.239
ENSG00000121211	<i>MND1</i>	1.96e-05	0.684	3.221
ENSG00000115306	<i>SPTBN1</i>	1.20e-04	-0.799	3.133
ENSG00000152818	<i>UTRN</i>	1.43e-06	-0.535	3.128
ENSG00000142945	<i>KIF2C</i>	6.58e-07	0.499	3.086
ENSG00000179958	<i>DCTPP1</i>	3.47e-05	0.687	3.062
ENSG00000007168	<i>PAFAH1B1</i>	2.40e-07	-0.455	3.015
ENSG00000111665	<i>CDCA3</i>	4.75e-06	0.564	3.001
ENSG00000151276	<i>MAGI1</i>	1.11e-05	-0.603	2.987
ENSG00000148834	<i>GSTO1</i>	1.50e-06	0.509	2.966
ENSG00000146670	<i>CDCA5</i>	1.06e-05	0.594	2.954
ENSG00000198483	<i>ANKRD35</i>	3.00e-04	-0.823	2.898
ENSG00000078018	<i>MAP2</i>	2.42e-04	-0.788	2.851
ENSG00000135446	<i>CDK4</i>	1.64e-05	0.593	2.836
ENSG00000159399	<i>HK2</i>	6.81e-05	0.672	2.802
ENSG00000114127	<i>XRNI</i>	2.53e-05	-0.609	2.800
ENSG00000122565	<i>CBX3</i>	1.25e-06	0.474	2.800
ENSG00000134757	<i>DSG3</i>	3.67e-05	0.621	2.752
ENSG00000177311	<i>ZBTB38</i>	3.31e-05	-0.608	2.724
ENSG00000072571	<i>HMMR</i>	2.57e-05	0.592	2.719
ENSG00000169245	<i>CXCL10</i>	1.84e-04	0.728	2.719
ENSG00000121152	<i>NCAPH</i>	1.29e-05	0.553	2.705
ENSG00000136937	<i>NCBP1</i>	3.88e-06	-0.498	2.695
ENSG00000153044	<i>CENPH</i>	5.48e-05	0.632	2.691
ENSG00000131018	<i>SYNE1</i>	9.26e-05	-0.665	2.683
ENSG00000167759	<i>KLK13</i>	3.45e-05	-0.601	2.680
ENSG00000174442	<i>ZWILCH</i>	3.35e-06	0.484	2.648
ENSG00000107485	<i>GATA3</i>	3.52e-05	-0.592	2.638
ENSG00000137440	<i>FGFBP1</i>	1.04e-03	0.883	2.635
ENSG00000133059	<i>DSTYK</i>	9.35e-06	0.518	2.606
ENSG00000055609	<i>KMT2C</i>	5.58e-05	-0.610	2.594

ENSG00000176463	<i>SLCO3A1</i>	8.93e-05	-0.631	2.554
ENSG00000205208	<i>C4orf46</i>	1.74e-05	0.531	2.528
ENSG00000107833	<i>NPM3</i>	8.04e-06	0.492	2.509
ENSG00000137310	<i>TCF19</i>	1.71e-04	0.658	2.479
ENSG00000148498	<i>PARD3</i>	6.72e-06	-0.474	2.450
ENSG00000138778	<i>CENPE</i>	5.56e-05	0.572	2.434
ENSG00000180198	<i>RCCI</i>	1.36e-05	0.498	2.421
ENSG00000197562	<i>RAB40C</i>	2.46e-04	-0.662	2.388
ENSG00000213551	<i>DNAJC9</i>	1.03e-05	0.477	2.377
ENSG00000135750	<i>KCNK1</i>	2.48e-04	-0.656	2.365
ENSG00000144426	<i>NBEAL1</i>	1.18e-04	-0.596	2.339
ENSG00000188373	<i>GPR15LG</i>	4.65e-03	-1.000	2.332
ENSG00000095203	<i>EPB41L4B</i>	2.19e-04	-0.637	2.330
ENSG00000124942	<i>AHNAK</i>	3.49e-05	-0.518	2.309
ENSG00000165474	<i>GJB2</i>	2.70e-04	0.633	2.258
ENSG00000105011	<i>ASF1B</i>	2.70e-05	0.490	2.239
ENSG00000154839	<i>SKA1</i>	2.28e-05	0.471	2.185
ENSG00000137309	<i>HMGAI</i>	9.51e-05	0.543	2.183
ENSG00000131711	<i>MAP1B</i>	1.07e-04	0.547	2.173
ENSG00000185664	<i>PMEL</i>	1.42e-03	0.762	2.170
ENSG00000170779	<i>CDCA4</i>	1.53e-05	0.450	2.169
ENSG00000137648	<i>TMPRSS4</i>	3.70e-04	0.629	2.159
ENSG00000184182	<i>UBE2F</i>	2.56e-05	0.462	2.123
ENSG00000162733	<i>DDR2</i>	2.51e-05	0.461	2.121
ENSG00000106399	<i>RPA3</i>	9.35e-05	0.525	2.115
ENSG00000262814	<i>MRPL12</i>	3.65e-04	0.615	2.114
ENSG00000166233	<i>ARIHI</i>	1.01e-04	-0.513	2.051
ENSG00000227507	<i>LTB</i>	2.18e-04	0.546	1.999
ENSG00000175727	<i>MLXIP</i>	1.15e-04	-0.499	1.966
ENSG00000108829	<i>LRRC59</i>	7.09e-04	0.623	1.962
ENSG00000048707	<i>VPS13D</i>	4.48e-05	-0.446	1.940
ENSG00000183684	<i>ALYREF</i>	5.32e-04	0.589	1.928
ENSG00000163535	<i>SGO2</i>	2.10e-04	0.524	1.927
ENSG00000100614	<i>PPM1A</i>	1.94e-04	-0.516	1.915
ENSG00000114120	<i>SLC25A36</i>	9.23e-05	-0.470	1.895
ENSG00000169594	<i>BNC1</i>	6.32e-04	0.590	1.886
ENSG00000138688	<i>BLTP1</i>	3.24e-04	-0.537	1.875
ENSG00000115163	<i>CENPA</i>	5.02e-04	0.568	1.875
ENSG00000130255	<i>RPL36</i>	1.04e-03	0.626	1.867
ENSG00000129195	<i>PIMREG</i>	3.98e-06	0.342	1.849
ENSG00000154556	<i>SORBS2</i>	6.86e-04	0.584	1.847
ENSG00000165516	<i>KLHDC2</i>	5.07e-05	-0.421	1.809
ENSG00000129810	<i>SGO1</i>	1.39e-04	0.464	1.791
ENSG00000101745	<i>ANKRD12</i>	4.83e-04	-0.540	1.790

Abbreviations: log2FC, log2 fold change.

Table S3. The 174 shared prioritized genes (90th-percentile π -value ranking) and their expression statistics in GSE168735.

Ensembl ID	Gene symbol	<i>P</i> value	Log2FC	π -value
ENSG00000171848	<i>RRM2</i>	7.68e-11	1.908	19.300
ENSG00000166803	<i>PCLAF</i>	3.55e-10	1.759	16.627
ENSG00000138180	<i>CEP55</i>	2.03e-10	1.502	14.561
ENSG00000123975	<i>CKS2</i>	4.72e-10	1.486	13.854
ENSG00000112984	<i>KIF20A</i>	6.50e-09	1.653	13.533
ENSG00000134057	<i>CCNB1</i>	4.25e-09	1.603	13.420
ENSG00000100526	<i>CDKN3</i>	4.80e-09	1.533	12.750
ENSG00000109805	<i>NCAPG</i>	1.66e-09	1.451	12.737
ENSG00000131747	<i>TOP2A</i>	4.33e-09	1.517	12.687
ENSG00000170312	<i>CDK1</i>	1.55e-09	1.404	12.371
ENSG00000057149	<i>SERPINB3</i>	1.86e-07	1.770	11.911
ENSG00000167900	<i>TK1</i>	8.76e-10	1.276	11.558
ENSG00000188486	<i>H2AX</i>	1.80e-10	1.182	11.517
ENSG00000035499	<i>DEPDC1B</i>	3.34e-09	1.352	11.457
ENSG00000198901	<i>PRC1</i>	2.99e-09	1.324	11.287
ENSG00000157456	<i>CCNB2</i>	5.95e-09	1.359	11.176
ENSG00000080986	<i>NDC80</i>	4.24e-09	1.330	11.134
ENSG00000168078	<i>PBK</i>	1.01e-08	1.388	11.097
ENSG00000137804	<i>NUSAP1</i>	4.20e-09	1.324	11.091
ENSG00000146670	<i>CDCA5</i>	5.51e-10	1.187	10.991
ENSG00000088325	<i>TPX2</i>	3.29e-09	1.286	10.907
ENSG00000071539	<i>TRIP13</i>	6.57e-10	1.141	10.475
ENSG00000137812	<i>KNL1</i>	1.97e-09	1.183	10.297
ENSG00000156970	<i>BUB1B</i>	8.70e-09	1.272	10.255
ENSG00000206073	<i>SERPINB4</i>	2.88e-05	2.239	10.169
ENSG00000169679	<i>BUB1</i>	4.59e-09	1.206	10.060
ENSG00000131153	<i>GINS2</i>	1.78e-09	1.146	10.029
ENSG00000152253	<i>SPC25</i>	1.43e-08	1.275	9.999
ENSG00000154839	<i>SKA1</i>	5.01e-10	1.074	9.990
ENSG00000072571	<i>HMMR</i>	2.61e-09	1.127	9.677
ENSG00000171320	<i>ESCO2</i>	1.02e-08	1.202	9.605
ENSG00000165304	<i>MELK</i>	2.18e-09	1.096	9.489
ENSG00000145386	<i>CCNA2</i>	1.53e-08	1.207	9.435
ENSG00000087586	<i>AURKA</i>	1.25e-08	1.142	9.028
ENSG00000121211	<i>MND1</i>	4.47e-09	1.071	8.942
ENSG00000138160	<i>KIF11</i>	2.76e-09	1.039	8.894
ENSG00000123219	<i>CENPK</i>	1.62e-09	0.986	8.667
ENSG00000132646	<i>PCNA</i>	2.24e-10	0.887	8.562
ENSG00000138778	<i>CENPE</i>	1.20e-09	0.915	8.158
ENSG00000111665	<i>CDCA3</i>	2.83e-09	0.949	8.116

ENSG00000089685	<i>BIRC5</i>	6.89e-09	0.986	8.051
ENSG00000117594	<i>HSD11B1</i>	1.13e-07	-1.159	8.049
ENSG00000178999	<i>AURKB</i>	7.43e-09	0.965	7.841
ENSG00000142945	<i>KIF2C</i>	1.97e-08	1.000	7.706
ENSG00000140525	<i>FANCI</i>	5.54e-09	0.932	7.694
ENSG00000121152	<i>NCAPH</i>	9.64e-10	0.838	7.555
ENSG00000115163	<i>CENPA</i>	8.48e-08	1.057	7.476
ENSG00000117399	<i>CDC20</i>	1.02e-07	1.055	7.377
ENSG00000093009	<i>CDC45</i>	4.42e-10	0.776	7.262
ENSG00000237649	<i>KIFC1</i>	4.68e-09	0.860	7.163
ENSG00000146410	<i>MTFR2</i>	4.89e-09	0.836	6.947
ENSG00000117650	<i>NEK2</i>	4.05e-08	0.939	6.938
ENSG00000163220	<i>SI00A9</i>	1.56e-04	1.799	6.850
ENSG00000105011	<i>ASF1B</i>	9.40e-10	0.729	6.581
ENSG00000134569	<i>LRP4</i>	1.68e-07	-0.950	6.437
ENSG00000024526	<i>DEPDC1</i>	4.26e-08	0.860	6.336
ENSG00000163535	<i>SGO2</i>	1.90e-10	0.628	6.109
ENSG00000167513	<i>CDT1</i>	2.06e-10	0.606	5.872
ENSG00000168496	<i>FEN1</i>	1.38e-08	0.739	5.811
ENSG00000101003	<i>GINSI</i>	2.48e-10	0.604	5.802
ENSG00000164104	<i>HMGB2</i>	1.16e-08	0.713	5.660
ENSG00000113368	<i>LMNB1</i>	2.51e-07	0.848	5.599
ENSG00000013810	<i>TACC3</i>	6.10e-08	0.751	5.422
ENSG00000163918	<i>RFC4</i>	5.48e-09	0.640	5.288
ENSG00000129195	<i>PIMREG</i>	7.41e-07	0.832	5.103
ENSG00000181163	<i>NPM1</i>	9.35e-08	0.725	5.095
ENSG00000103257	<i>SLC7A5</i>	9.92e-07	0.832	4.997
ENSG00000099994	<i>SUSD2</i>	4.30e-08	-0.655	4.824
ENSG00000117632	<i>STMN1</i>	2.70e-07	0.723	4.746
ENSG00000205420	<i>KRT6A</i>	3.79e-04	1.353	4.629
ENSG00000174442	<i>ZWILCH</i>	1.47e-08	0.590	4.620
ENSG00000174808	<i>BTC</i>	7.18e-06	-0.887	4.564
ENSG00000102265	<i>TIMP1</i>	2.00e-06	0.767	4.369
ENSG00000137440	<i>FGFBP1</i>	1.09e-04	1.075	4.258
ENSG00000144136	<i>SLC20A1</i>	4.22e-07	0.667	4.250
ENSG00000172264	<i>MACROD2</i>	1.81e-08	-0.544	4.212
ENSG00000143546	<i>SI00A8</i>	6.94e-04	1.322	4.177
ENSG00000153044	<i>CENPH</i>	2.19e-07	0.625	4.161
ENSG00000124942	<i>AHNAK</i>	1.04e-07	-0.585	4.087
ENSG00000180198	<i>RCC1</i>	1.07e-06	0.678	4.050
ENSG00000148834	<i>GSTO1</i>	5.16e-08	0.529	3.859
ENSG00000135451	<i>TROAP</i>	6.60e-09	0.471	3.853
ENSG00000068489	<i>PRR11</i>	6.11e-09	0.466	3.824
ENSG00000137563	<i>GGH</i>	7.49e-08	0.535	3.815
ENSG00000165474	<i>GJB2</i>	1.04e-04	0.898	3.575

ENSG00000131711	<i>MAP1B</i>	9.23e-07	-0.589	3.556
ENSG00000069667	<i>RORA</i>	1.16e-06	-0.592	3.512
ENSG00000182628	<i>SKA2</i>	1.08e-08	0.426	3.390
ENSG00000134757	<i>DSG3</i>	2.70e-06	0.590	3.288
ENSG00000213551	<i>DNAJC9</i>	7.78e-08	0.439	3.118
ENSG00000185664	<i>PMEL</i>	4.82e-05	0.701	3.028
ENSG00000090382	<i>LYZ</i>	1.27e-04	0.771	3.005
ENSG00000188373	<i>GPR15LG</i>	4.39e-05	0.629	2.740
ENSG00000106399	<i>RPA3</i>	1.45e-06	0.459	2.680
ENSG00000151276	<i>MAGII</i>	4.24e-08	-0.363	2.675
ENSG00000078018	<i>MAP2</i>	7.25e-07	0.430	2.639
ENSG00000114120	<i>SLC25A36</i>	3.13e-08	-0.328	2.465
ENSG00000137310	<i>TCF19</i>	2.07e-06	0.422	2.398
ENSG00000107833	<i>NPM3</i>	3.81e-06	0.437	2.370
ENSG00000163625	<i>WDFY3</i>	3.00e-08	-0.309	2.325
ENSG00000048707	<i>VPS13D</i>	1.17e-05	-0.467	2.305
ENSG00000137648	<i>TMPRSS4</i>	1.86e-05	0.458	2.169
ENSG00000129810	<i>SGOI</i>	1.33e-07	0.312	2.144
ENSG00000169550	<i>MUC15</i>	2.70e-05	-0.457	2.089
ENSG00000055609	<i>KMT2C</i>	2.95e-07	-0.313	2.044
ENSG00000205208	<i>C4orf46</i>	2.05e-06	0.347	1.971
ENSG00000124107	<i>SLPI</i>	2.45e-04	0.535	1.932
ENSG00000122565	<i>CBX3</i>	2.66e-07	0.289	1.903
ENSG00000075618	<i>FSCN1</i>	2.49e-05	0.405	1.865
ENSG00000107485	<i>GATA3</i>	6.61e-05	-0.444	1.854
ENSG00000106078	<i>COBL</i>	2.08e-07	-0.273	1.826
ENSG00000197562	<i>RAB40C</i>	2.34e-06	-0.322	1.812
ENSG00000183684	<i>ALYREF</i>	3.03e-05	0.397	1.794
ENSG00000170779	<i>CDCA4</i>	7.88e-06	0.350	1.784
ENSG00000155307	<i>SAMSN1</i>	2.73e-04	0.493	1.756
ENSG00000189182	<i>KRT77</i>	7.36e-04	-0.559	1.751
ENSG00000138162	<i>TACC2</i>	3.30e-05	-0.389	1.742
ENSG00000175727	<i>MLXIP</i>	4.23e-05	-0.385	1.683
ENSG00000114771	<i>AADAC</i>	2.51e-03	0.645	1.678
ENSG00000095637	<i>SORBS1</i>	3.17e-04	-0.476	1.664
ENSG00000134121	<i>CHL1</i>	1.25e-03	-0.570	1.655
ENSG00000113916	<i>BCL6</i>	6.74e-05	-0.396	1.652
ENSG00000095203	<i>EPB41L4B</i>	3.00e-05	-0.359	1.623
ENSG00000108829	<i>LRRC59</i>	1.19e-04	0.410	1.609
ENSG00000227507	<i>LTB</i>	2.08e-03	0.584	1.567
ENSG00000167759	<i>KLK13</i>	8.60e-04	0.507	1.555
ENSG00000077312	<i>SNRPA</i>	2.48e-05	0.336	1.546
ENSG00000130255	<i>RPL36</i>	1.30e-05	0.315	1.540
ENSG00000176463	<i>SLCO3A1</i>	4.61e-06	-0.288	1.536
ENSG00000134755	<i>DSC2</i>	5.47e-04	0.470	1.533

ENSG00000103187	<i>COTL1</i>	2.16e-05	0.315	1.471
ENSG00000148498	<i>PARD3</i>	1.03e-04	-0.363	1.448
ENSG00000131018	<i>SYNE1</i>	5.81e-05	-0.340	1.440
ENSG00000204103	<i>MAFB</i>	1.57e-04	-0.378	1.436
ENSG00000198722	<i>UNC13B</i>	5.13e-05	-0.334	1.432
ENSG00000152818	<i>UTRN</i>	4.72e-06	-0.263	1.398
ENSG00000114127	<i>XRNI</i>	6.03e-06	-0.263	1.373
ENSG00000137309	<i>HMGAI</i>	1.25e-05	0.278	1.362
ENSG00000135446	<i>CDK4</i>	1.09e-05	0.270	1.341
ENSG00000007168	<i>PAFAH1B1</i>	7.92e-05	0.321	1.316
ENSG00000100614	<i>PPM1A</i>	1.18e-07	-0.190	1.314
ENSG00000179958	<i>DCTPP1</i>	3.79e-05	0.287	1.267
ENSG00000136937	<i>NCBP1</i>	2.76e-05	0.277	1.262
ENSG00000169245	<i>CXCL10</i>	1.51e-02	0.690	1.257
ENSG00000120327	<i>PCDHB14</i>	2.02e-04	-0.337	1.247
ENSG00000151150	<i>ANK3</i>	1.31e-04	-0.319	1.239
ENSG00000177311	<i>ZBTB38</i>	6.87e-05	-0.297	1.238
ENSG00000154556	<i>SORBS2</i>	3.08e-05	-0.270	1.219
ENSG00000073910	<i>FRY</i>	6.35e-05	-0.289	1.213
ENSG00000101745	<i>ANKRD12</i>	3.87e-06	-0.224	1.210
ENSG00000165516	<i>KLHDC2</i>	5.48e-05	-0.284	1.209
ENSG00000133401	<i>PDZD2</i>	2.91e-04	-0.332	1.174
ENSG00000133059	<i>DSTYK</i>	8.38e-06	-0.219	1.110
ENSG00000128626	<i>MRPS12</i>	1.33e-05	0.228	1.109
ENSG00000169594	<i>BNC1</i>	7.44e-05	0.266	1.097
ENSG00000077264	<i>PAK3</i>	8.98e-05	-0.270	1.094
ENSG00000162733	<i>DDR2</i>	3.68e-03	-0.446	1.086
ENSG00000003402	<i>CFLAR</i>	6.44e-05	-0.252	1.054
ENSG00000159399	<i>HK2</i>	5.62e-03	0.467	1.052
ENSG00000144426	<i>NBEAL1</i>	1.81e-04	-0.279	1.043
ENSG00000172818	<i>OVOL1</i>	1.27e-03	0.352	1.019
ENSG00000198483	<i>ANKRD35</i>	5.74e-04	-0.312	1.012
ENSG00000262814	<i>MRPL12</i>	5.01e-04	0.300	0.991
ENSG00000135750	<i>KCNK1</i>	9.86e-04	0.328	0.985
ENSG00000118971	<i>CCND2</i>	3.01e-04	0.278	0.979
ENSG00000169442	<i>CD52</i>	7.43e-03	0.450	0.958
ENSG00000088280	<i>ASAP3</i>	8.34e-05	-0.228	0.931
ENSG00000170113	<i>NIPA1</i>	3.03e-04	0.261	0.918
ENSG00000106415	<i>GLCCII</i>	9.52e-04	-0.301	0.911
ENSG00000138688	<i>BLTP1</i>	1.47e-03	-0.312	0.884
ENSG00000166233	<i>ARIHI</i>	3.60e-04	-0.256	0.883
ENSG00000184182	<i>UBE2F</i>	2.14e-04	0.233	0.855
ENSG00000054793	<i>ATP9A</i>	9.07e-05	-0.211	0.851
ENSG00000115306	<i>SPTBN1</i>	5.65e-04	-0.259	0.842

Table S4. Murine orthologs of the 174 shared prioritized genes (90th-percentile π -value ranking) and their expression statistics in GSE95317.

Ensembl ID	Gene symbol	<i>P</i> value	Log2FC	π -value
ENSMUSG000000017002	<i>Slpi</i>	7.65e-09	9.701	78.734
ENSMUSG000000056071	<i>SI00a9</i>	3.45e-06	12.966	70.824
ENSMUSG000000054046	<i>Klk13</i>	2.81e-08	9.282	70.089
ENSMUSG000000096001	<i>Gpr15lg</i>	4.14e-08	9.331	68.892
ENSMUSG000000023041	<i>Krt6a</i>	4.06e-06	12.659	68.252
ENSMUSG000000044594 ^a	<i>Serpinb3</i>	1.46e-06	10.172	59.363
ENSMUSG000000056054	<i>SI00a8</i>	3.09e-05	11.340	51.145
ENSMUSG000000062248	<i>Cks2</i>	3.23e-09	5.103	43.327
ENSMUSG000000024742	<i>Fen1</i>	4.72e-07	5.238	33.137
ENSMUSG000000046352	<i>Gjb2</i>	5.30e-05	7.580	32.408
ENSMUSG000000096054	<i>Syne1</i>	3.09e-07	-4.823	31.401
ENSMUSG000000037628	<i>Cdkn3</i>	7.49e-07	4.486	27.478
ENSMUSG000000056602	<i>Fry</i>	1.29e-07	-3.964	27.308
ENSMUSG000000001131	<i>Timp1</i>	1.51e-05	5.627	27.126
ENSMUSG000000024331	<i>Dsc2</i>	4.04e-06	4.825	26.027
ENSMUSG000000025068	<i>Gsto1</i>	1.06e-06	4.244	25.356
ENSMUSG000000069601	<i>Ank3</i>	6.07e-07	-3.973	24.699
ENSMUSG000000040010	<i>Slc7a5</i>	6.87e-07	3.953	24.361
ENSMUSG000000046191	<i>Pcdhb14</i>	3.16e-04	6.314	22.099
ENSMUSG000000006398	<i>Cdc20</i>	6.50e-07	3.545	21.935
ENSMUSG000000034855	<i>Cxcl10</i>	3.68e-05	4.863	21.565
ENSMUSG000000031821	<i>Gins2</i>	1.96e-06	3.683	21.020
ENSMUSG000000020220	<i>Vps13d</i>	4.60e-07	-3.300	20.911
ENSMUSG000000022197	<i>Pdzd2</i>	4.47e-06	-3.900	20.866
ENSMUSG000000033998	<i>Kcnk1</i>	1.62e-05	4.343	20.805
ENSMUSG000000057863	<i>Rpl36</i>	4.10e-07	3.168	20.232
ENSMUSG000000032218	<i>Ccnb2</i>	1.21e-05	4.093	20.124
ENSMUSG000000019820	<i>Utrn</i>	5.99e-07	-3.229	20.096
ENSMUSG000000069833	<i>Ahnak</i>	9.91e-07	-3.323	19.949
ENSMUSG000000020315	<i>Sptbn1</i>	3.12e-07	-2.977	19.368
ENSMUSG000000022033	<i>Pbk</i>	4.30e-05	4.425	19.322
ENSMUSG000000027715	<i>Ccna2</i>	1.95e-06	3.359	19.178
ENSMUSG000000031827	<i>Cotl1</i>	1.60e-06	3.203	18.565
ENSMUSG000000020173	<i>Cobl</i>	9.37e-06	-3.637	18.289
ENSMUSG000000028175	<i>Depdc1</i>	1.80e-05	3.846	18.249
ENSMUSG000000027253	<i>Lrp4</i>	3.07e-06	-3.305	18.220
ENSMUSG000000000682	<i>Cd52</i>	1.98e-06	3.182	18.150
ENSMUSG000000040204	<i>Pclaf</i>	4.41e-05	4.092	17.821
ENSMUSG000000029177	<i>Cenpa</i>	7.03e-07	2.853	17.558
ENSMUSG000000017716	<i>Birc5</i>	1.21e-06	2.798	16.555
ENSMUSG000000049932	<i>H2ax</i>	9.04e-07	2.664	16.101
ENSMUSG000000026039	<i>Sgo2</i>	6.18e-05	3.801	15.999

ENSMUSG00000024989	<i>Cep55</i>	3.59e-05	3.542	15.743
ENSMUSG00000024056	<i>Ndc80</i>	1.83e-05	3.296	15.614
ENSMUSG00000056209	<i>Npm3</i>	4.27e-07	2.448	15.595
ENSMUSG00000038056	<i>Kmt2c</i>	3.73e-06	-2.859	15.519
ENSMUSG00000042462	<i>Dctpp1</i>	1.12e-06	2.351	13.992
ENSMUSG00000025790	<i>Slco3a1</i>	8.17e-06	-2.669	13.577
ENSMUSG00000041431	<i>Ccnb1</i>	3.36e-05	3.028	13.545
ENSMUSG00000025359	<i>Pmel</i>	5.08e-05	3.075	13.205
ENSMUSG00000024590	<i>Lmnbl</i>	6.32e-07	2.118	13.131
ENSMUSG00000012483	<i>Rpa3</i>	1.57e-06	2.201	12.773
ENSMUSG00000021096	<i>Ppmla</i>	2.27e-06	-2.231	12.590
ENSMUSG00000027454	<i>Gins1</i>	4.58e-05	2.893	12.554
ENSMUSG00000035683	<i>Melk</i>	7.72e-05	2.965	12.193
ENSMUSG00000023505	<i>Cdca3</i>	1.52e-05	2.527	12.177
ENSMUSG00000024791	<i>Cdca5</i>	1.36e-04	3.130	12.098
ENSMUSG00000027496	<i>Aurka</i>	1.04e-04	2.923	11.642
ENSMUSG00000037270	<i>Bltp1</i>	4.96e-05	-2.684	11.554
ENSMUSG00000023940	<i>Sgo1</i>	9.22e-05	2.861	11.544
ENSMUSG00000027397	<i>Slc20a1</i>	1.08e-05	2.294	11.394
ENSMUSG00000020492	<i>Ska2</i>	3.62e-05	2.551	11.330
ENSMUSG00000073987	<i>Ggh</i>	7.68e-06	2.209	11.296
ENSMUSG00000019942	<i>Cdk1</i>	7.24e-05	2.680	11.097
ENSMUSG00000043940	<i>Wdfy3</i>	9.43e-06	-2.199	11.052
ENSMUSG00000038342	<i>Mlxip</i>	4.44e-06	-2.021	10.817
ENSMUSG00000012443	<i>Kif11</i>	6.30e-05	2.552	10.719
ENSMUSG00000022876	<i>Samsn1</i>	1.33e-03	3.631	10.441
ENSMUSG00000037313	<i>Tacc3</i>	1.83e-05	2.201	10.429
ENSMUSG00000031626	<i>Sorbs2</i>	2.24e-04	-2.850	10.405
ENSMUSG00000046711	<i>Hmgal</i>	2.58e-06	1.853	10.358
ENSMUSG00000027761	<i>Aadac</i>	7.60e-05	2.513	10.353
ENSMUSG00000020897	<i>Aurkb</i>	1.61e-04	2.699	10.237
ENSMUSG00000027469	<i>Tpx2</i>	3.75e-05	2.296	10.162
ENSMUSG00000003779	<i>Kif20a</i>	1.42e-04	2.609	10.040
ENSMUSG00000027379	<i>Bub1</i>	4.29e-04	2.951	9.937
ENSMUSG00000028434	<i>Epb41l4b</i>	4.26e-05	-2.250	9.836
ENSMUSG00000020649	<i>Rrm2</i>	2.35e-04	2.696	9.782
ENSMUSG00000025730	<i>Rab40c</i>	3.08e-05	2.155	9.723
ENSMUSG00000028456	<i>Unc13b</i>	1.44e-04	-2.522	9.686
ENSMUSG00000050808	<i>Muc15</i>	1.79e-03	3.519	9.666
ENSMUSG00000032238	<i>Rora</i>	1.03e-04	-2.416	9.627
ENSMUSG00000067594	<i>Krt77</i>	1.16e-02	-4.925	9.531
ENSMUSG00000054717	<i>Hmgb2</i>	8.14e-06	1.848	9.404
ENSMUSG00000069516	<i>Lyz</i>	3.13e-04	2.572	9.015
ENSMUSG00000079553	<i>Kifc1</i>	1.52e-04	2.358	9.006

ENSMUSG00000020330	<i>Hmmr</i>	4.13e-04	2.608	8.826
ENSMUSG00000021569	<i>Trip13</i>	3.16e-04	2.491	8.722
ENSMUSG00000074622	<i>Mafb</i>	4.89e-06	1.640	8.708
ENSMUSG00000025574	<i>Tkl</i>	4.69e-04	2.611	8.691
ENSMUSG00000082361	<i>Btc</i>	4.76e-03	-3.707	8.609
ENSMUSG00000025812	<i>Pard3</i>	9.18e-05	-2.131	8.604
ENSMUSG00000028832	<i>Stmn1</i>	5.50e-06	1.616	8.502
ENSMUSG00000032783	<i>Troap</i>	9.59e-04	2.814	8.493
ENSMUSG00000045273	<i>Cenph</i>	2.23e-04	2.299	8.396
ENSMUSG00000029581	<i>Fscn1</i>	1.81e-04	2.210	8.271
ENSMUSG00000020493	<i>Prr11</i>	4.87e-04	2.469	8.178
ENSMUSG00000027342	<i>Pcna</i>	2.25e-05	1.732	8.050
ENSMUSG00000027306	<i>Nusap1</i>	1.32e-04	2.073	8.039
ENSMUSG00000028678	<i>Kif2c</i>	5.82e-04	2.480	8.022
ENSMUSG00000020808	<i>Pimreg</i>	1.37e-03	2.780	7.963
ENSMUSG00000032449	<i>Slc25a36</i>	3.66e-05	-1.785	7.921
ENSMUSG00000022881	<i>Rfc4</i>	9.87e-05	1.975	7.909
ENSMUSG00000047037	<i>Nipa1</i>	1.30e-03	2.731	7.881
ENSMUSG00000061479	<i>Snrpa</i>	1.10e-05	1.571	7.788
ENSMUSG00000032410	<i>Xrn1</i>	4.65e-05	-1.734	7.512
ENSMUSG00000057113	<i>Npm1</i>	1.94e-05	1.589	7.489
ENSMUSG00000027326	<i>Kn1l</i>	1.95e-03	2.757	7.476
ENSMUSG00000030852	<i>Tacc2</i>	1.43e-04	-1.938	7.450
ENSMUSG00000033752	<i>Mnd1</i>	1.18e-04	1.896	7.444
ENSMUSG00000005233	<i>Spc25</i>	1.26e-03	2.552	7.404
ENSMUSG00000024399	<i>Ltb</i>	3.96e-03	3.058	7.347
ENSMUSG00000020978	<i>Klhdc2</i>	1.63e-04	-1.892	7.167
ENSMUSG00000025105	<i>Bnc1</i>	2.52e-04	1.986	7.147
ENSMUSG00000006585	<i>Cdt1</i>	1.36e-04	1.819	7.032
ENSMUSG00000048373	<i>Fgfbp1</i>	3.44e-04	2.030	7.028
ENSMUSG00000026622	<i>Nek2</i>	2.97e-04	1.991	7.020
ENSMUSG00000042046	<i>Dstykb</i>	3.31e-05	-1.517	6.796
ENSMUSG00000027546	<i>Atp9a</i>	1.89e-05	-1.416	6.688
ENSMUSG00000015222	<i>Map2</i>	1.51e-03	-2.336	6.591
ENSMUSG00000022508	<i>Bcl6</i>	6.98e-05	-1.580	6.569
ENSMUSG00000047832	<i>Cdca4</i>	3.55e-04	1.902	6.561
ENSMUSG00000040084	<i>Bub1b</i>	1.38e-04	1.682	6.494
ENSMUSG00000015880	<i>Ncapg</i>	9.05e-04	2.094	6.372
ENSMUSG00000006342	<i>Susd2</i>	6.29e-04	-1.942	6.216
ENSMUSG00000028896	<i>Rcc1</i>	3.05e-05	1.371	6.191
ENSMUSG00000005470	<i>Asf1b</i>	1.00e-03	2.045	6.135
ENSMUSG00000024922	<i>Ovol1</i>	9.18e-04	2.013	6.114
ENSMUSG00000026674	<i>Ddr2</i>	4.39e-04	-1.776	5.965
ENSMUSG00000056632	<i>Dsg3</i>	1.34e-03	2.071	5.950

ENSMUSG00000030077	<i>Chl1</i>	4.60e-04	-1.780	5.940
ENSMUSG00000026031	<i>Cflar</i>	3.85e-05	-1.299	5.733
ENSMUSG00000034906	<i>Ncaph</i>	1.44e-03	2.001	5.685
ENSMUSG00000022034	<i>Esco2</i>	5.84e-03	2.531	5.653
ENSMUSG00000025234	<i>Arih1</i>	3.21e-05	-1.252	5.624
ENSMUSG00000031284	<i>Pak3</i>	3.88e-03	-2.323	5.602
ENSMUSG00000020869	<i>Lrrc59</i>	2.50e-05	1.217	5.602
ENSMUSG00000073664	<i>Nbeal1</i>	1.21e-03	-1.899	5.541
ENSMUSG00000036995	<i>Asap3</i>	9.00e-04	-1.812	5.519
ENSMUSG00000052727	<i>Map1b</i>	3.06e-03	-2.184	5.491
ENSMUSG00000060244	<i>Alyref</i>	4.80e-03	2.351	5.451
ENSMUSG00000020745	<i>Pafah1b1</i>	4.99e-05	-1.266	5.448
ENSMUSG00000034343	<i>Ube2f</i>	8.66e-05	-1.328	5.396
ENSMUSG00000045948	<i>Mrps12</i>	1.43e-04	1.400	5.386
ENSMUSG00000029836	<i>Cbx3</i>	4.91e-05	1.241	5.348
ENSMUSG00000000628	<i>Hk2</i>	1.13e-03	-1.808	5.326
ENSMUSG00000000184	<i>Ccnd2</i>	6.50e-04	-1.657	5.282
ENSMUSG00000027811	<i>C4orf46</i>	2.48e-03	2.012	5.241
ENSMUSG00000036223	<i>Ska1</i>	1.16e-02	2.694	5.212
ENSMUSG00000021697	<i>Depdc1b</i>	2.42e-02	3.219	5.202
ENSMUSG00000015619	<i>Gata3</i>	1.69e-03	-1.863	5.164
ENSMUSG00000040433	<i>Zbtb38</i>	4.63e-04	-1.548	5.163
ENSMUSG00000068205	<i>MacroD2</i>	8.21e-03	-2.468	5.148
ENSMUSG00000019992	<i>Mtfr2</i>	8.48e-03	2.437	5.049
ENSMUSG00000038354	<i>Ankrd35</i>	8.40e-04	-1.641	5.048
ENSMUSG00000039187	<i>Fanci</i>	9.21e-03	2.460	5.009
ENSMUSG00000039640	<i>Mrpl12</i>	4.05e-04	1.469	4.985
ENSMUSG00000038943	<i>Prc1</i>	1.94e-03	1.821	4.942
ENSMUSG00000021811	<i>Dnajc9</i>	3.03e-04	1.402	4.935
ENSMUSG00000032400	<i>Zwilch</i>	6.56e-03	2.224	4.855
ENSMUSG00000045095	<i>Magil</i>	1.45e-03	-1.709	4.853
ENSMUSG00000032091	<i>Tmprss4</i>	8.44e-04	1.576	4.846
ENSMUSG00000025006	<i>Sorbs1</i>	8.88e-04	-1.571	4.794
ENSMUSG00000006728	<i>Cdk4</i>	3.92e-05	1.084	4.778
ENSMUSG00000021714	<i>Cenpk</i>	6.97e-03	2.212	4.771
ENSMUSG00000000028	<i>Cdc45</i>	2.17e-03	1.783	4.752
ENSMUSG00000050410	<i>Tcf19</i>	5.05e-04	1.438	4.740
ENSMUSG00000020914	<i>Top2a</i>	5.01e-04	1.403	4.630
ENSMUSG00000016194	<i>Hsd11b1</i>	8.45e-03	2.233	4.629
ENSMUSG00000029638	<i>Glcc1</i>	2.18e-02	2.772	4.606
ENSMUSG00000034647	<i>Ankrd12</i>	3.79e-03	-1.898	4.595
ENSMUSG00000045328	<i>Cenpe</i>	6.31e-03	2.083	4.584
ENSMUSG00000028330	<i>Ncbp1</i>	9.43e-05	1.138	4.582

^a Mouse Serpinb3 (ENSMUSG00000044594) is orthologous to both human SERPINB3 and SERPINB4; therefore, the 174 shared human genes correspond to 173 murine genes.

Table S5. Top 20 consensus hub genes identified using five CytoHubba algorithms (MCC, Degree, Betweenness, Closeness, and Stress) in the PPI network at a STRING interaction confidence score of 0.4.

Rank	Gene	MCC	Degree	Betweenness	Closeness	Stress	Mean rank
1	<i>CDK1</i>	1	1	7	1	8	3.6
2	<i>CDC20</i>	19	5	1	4	2	6.2
3	<i>CCNA2</i>	1	2	20	2	17	8.4
4	<i>AURKA</i>	1	3	17	5	18	8.8
5	<i>CCNB1</i>	1	3	36	3	19	12.4
6	<i>BIRC5</i>	22	8	9	9	14	12.4
7	<i>CCNB2</i>	1	8	29	10	21	13.8
8	<i>TOP2A</i>	1	5	38	6	24	14.8
9	<i>AURKB</i>	1	5	37	6	28	15.4
10	<i>CDC45</i>	25	12	19	12	19	17.4
11	<i>BUB1B</i>	1	8	41	8	30	17.6
12	<i>KIF11</i>	1	11	39	11	34	19.2
13	<i>RRM2</i>	22	12	22	15	27	19.6
14	<i>BUB1</i>	1	12	47	13	35	21.6
15	<i>KIF20A</i>	1	12	49	14	39	23.0
16	<i>CEP55</i>	1	19	40	21	40	24.2
17	<i>PRCI</i>	35	19	31	17	22	24.8
18	<i>CENPA</i>	19	16	43	16	36	26.0
19	<i>PBK</i>	1	19	52	19	42	26.6
20	<i>TKI</i>	44	41	8	38	6	27.4

PPI, protein–protein interaction; STRING, Search Tool for the Retrieval of Interacting Genes/Proteins; MCC, Maximal Clique Centrality.

Table S6. Top 20 consensus hub genes identified using five CytoHubba algorithms (MCC, Degree, Betweenness, Closeness, and Stress) in the PPI network at a STRING interaction confidence score of 0.7.

Rank	Gene	MCC	Degree	Betweenness	Closeness	Stress	Mean rank
1	<i>CDK1</i>	5	1	1	1	1	1.8
2	<i>CDC20</i>	1	2	5	2	5	3.0
3	<i>CCNA2</i>	1	4	3	4	6	3.6
4	<i>CCNB1</i>	5	3	4	3	3	3.6
5	<i>BUB1</i>	5	5	16	5	8	7.8
6	<i>BUB1B</i>	9	5	14	6	7	8.2
7	<i>CENPA</i>	24	13	2	13	2	10.8
8	<i>BIRC5</i>	1	7	22	7	17	10.8
9	<i>KIF20A</i>	1	11	18	11	15	11.2
10	<i>CCNB2</i>	11	7	19	7	13	11.4
11	<i>TOP2A</i>	18	7	17	7	11	12.0
12	<i>AURKB</i>	20	7	15	7	12	12.2
13	<i>CDC45</i>	31	15	6	15	4	14.2
14	<i>NUSAP1</i>	13	16	13	17	13	14.4
15	<i>KIF2C</i>	9	11	24	12	18	14.8
16	<i>KIF11</i>	5	13	27	14	21	16.0
17	<i>NCAPG</i>	12	18	21	18	19	17.6
18	<i>PBK</i>	16	16	26	16	23	19.4
19	<i>RRM2</i>	29	26	7	26	9	19.4
20	<i>CDCA5</i>	30	26	8	26	10	20.0

Table S7. Top 20 consensus hub genes identified using five CytoHubba algorithms (MCC, Degree, Betweenness, Closeness, and Stress) in the PPI network at a STRING interaction confidence score of 0.9.

Rank	Gene	MCC	Degree	Betweenness	Closeness	Stress	Mean rank
1	<i>CDK1</i>	1	1	4	1	3	2.0
2	<i>CCNA2</i>	5	3	1	3	1	2.6
3	<i>CDC20</i>	4	1	6	2	5	3.6
4	<i>CCNB1</i>	3	3	5	4	6	4.2
5	<i>BUB1B</i>	9	3	3	5	4	4.8
6	<i>BUB1</i>	10	6	10	6	9	8.2
7	<i>KIF20A</i>	6	7	14	7	11	9.0
8	<i>TOP2A</i>	7	9	15	9	14	10.8
9	<i>KIF11</i>	2	7	23	7	18	11.4
10	<i>CENPA</i>	23	18	2	18	2	12.6
11	<i>BIRC5</i>	14	13	13	13	12	13.0
12	<i>KIF2C</i>	8	9	18	10	20	13.0
13	<i>AURKB</i>	16	11	16	12	13	13.6
14	<i>CCNB2</i>	12	11	19	11	16	13.8
15	<i>TPX2</i>	11	15	25	16	21	17.6
16	<i>CENPE</i>	22	18	17	19	15	18.2
17	<i>RRM2</i>	25	24	9	24	10	18.4
18	<i>NUSAP1</i>	15	14	27	14	24	18.8
19	<i>AURKA</i>	18	18	22	19	22	19.8
20	<i>CDC45</i>	29	29	8	29	7	20.4

Table S8. Sensitivity analysis of π -value-based gene prioritization across alternative percentile thresholds.

Threshold	Shared genes (n)	Top enriched biological process	Highest-ranked hub genes retained[†]
85th	397	Mitotic cell cycle	Yes
90th (primary)	174	Mitotic cell cycle	Yes
95th	62	Mitotic cell cycle	Yes

[†] The highest-ranked hub genes identified in the primary (90th-percentile) analysis were retained across all prioritization thresholds, indicating stable hub-gene prioritization. Shared genes denote genes common to all three datasets at each π -value percentile threshold.

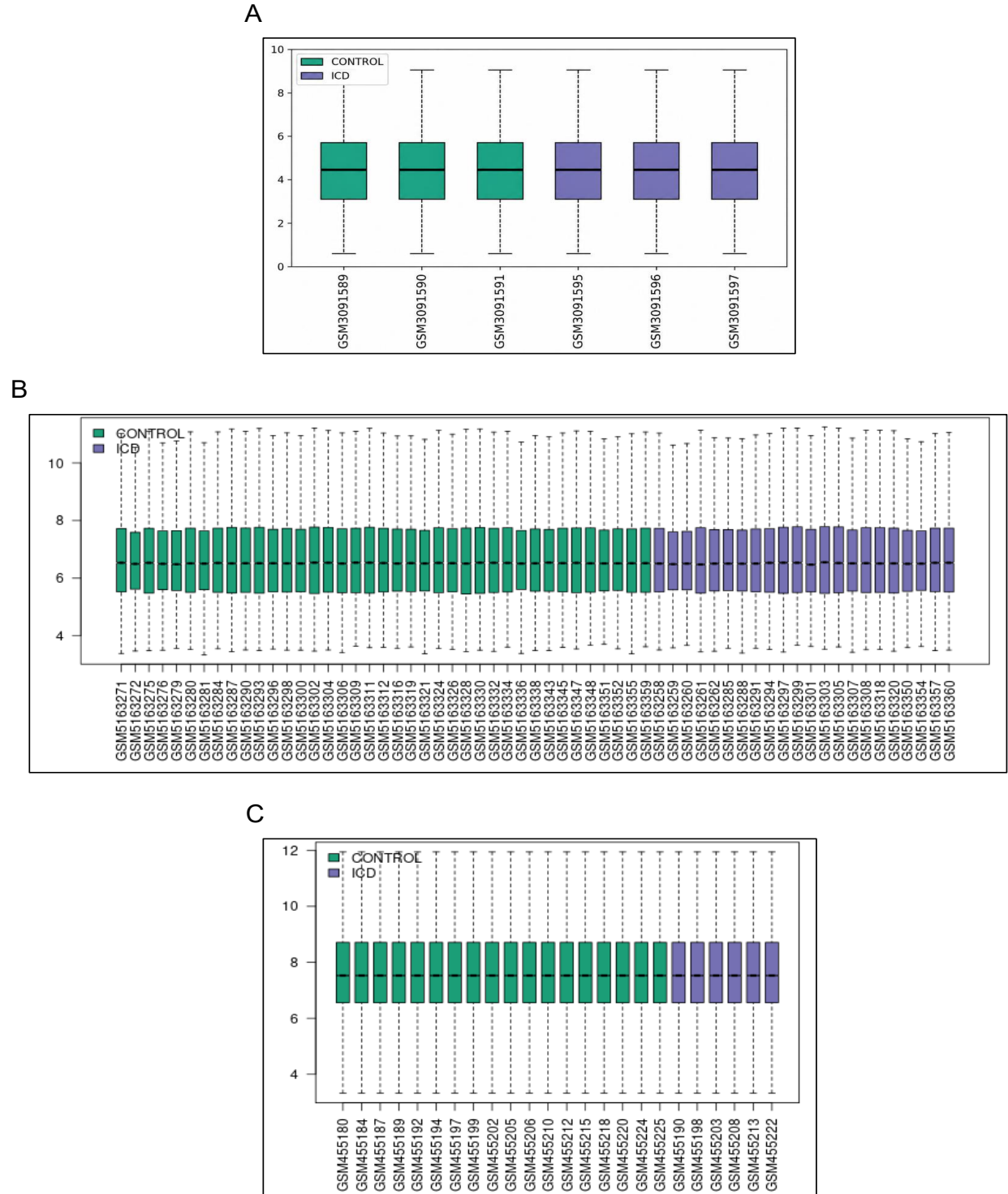


Figure S1. Boxplot distributions of normalized expression values across samples in the A. GSE95317, B. GSE168735, and C. GSE18206 datasets. Each boxplot represents the distribution of normalized expression values for an individual sample. Samples are colored according to experimental group (ICD or control). These plots were used to assess expression-value distributions across samples prior to downstream analyses. ICD: irritant contact dermatitis.

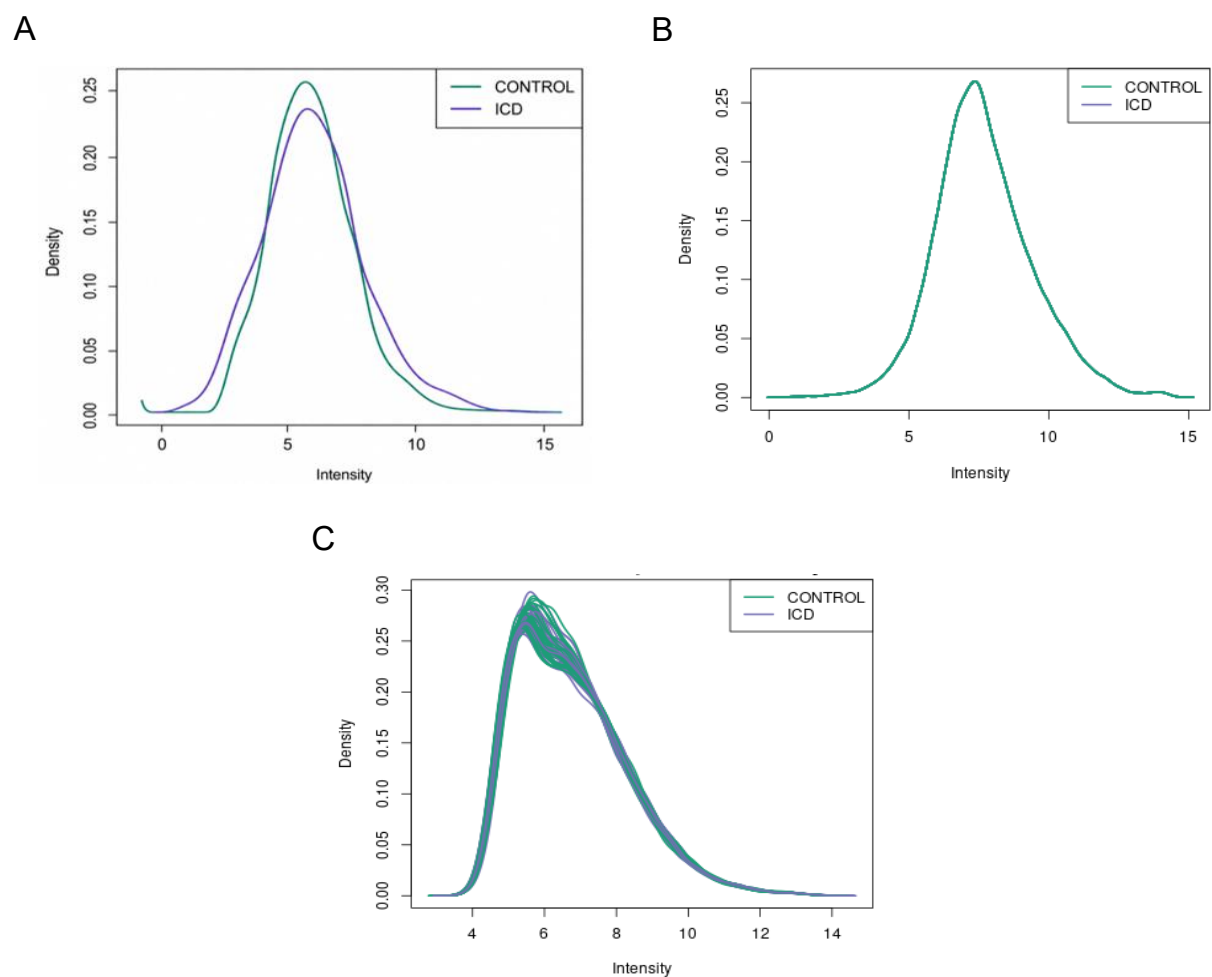


Figure S2. Expression density plots of normalized expression values for the A. GSE95317, B. GSE18206, and C. GSE168735 datasets. Each curve represents the distribution of normalized expression values across samples, with colors indicating the corresponding experimental groups (ICD or control).

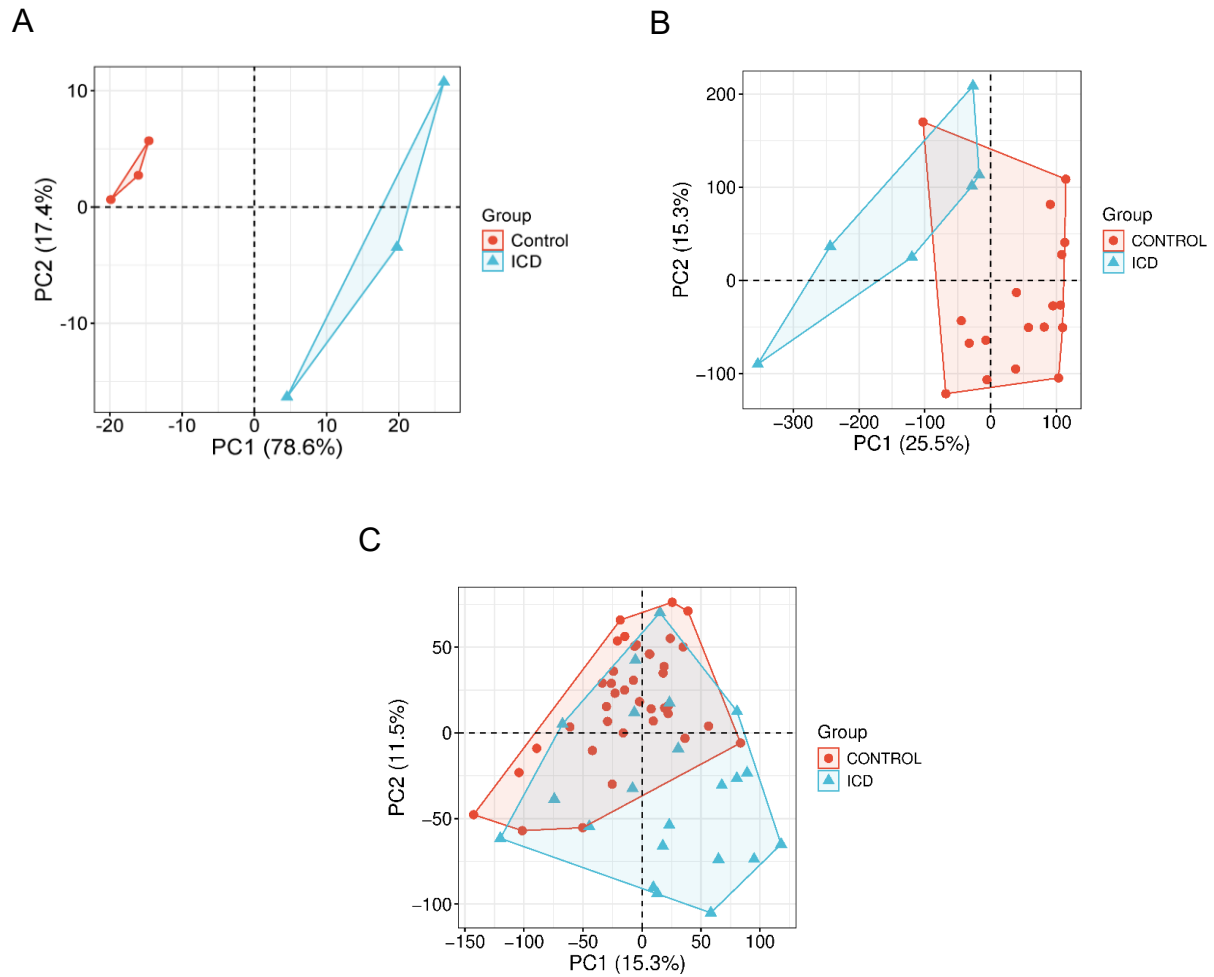
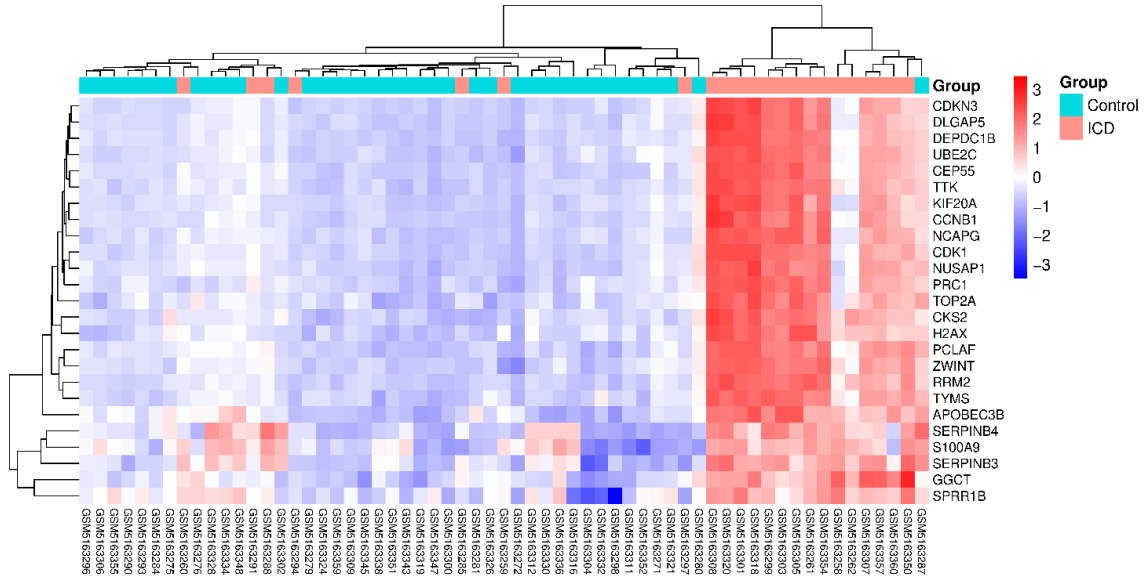


Figure S3. PCA of transcriptomic datasets. PCA was performed using normalized expression data from A. GSE95317, B. GSE18206, and C. GSE168735 datasets. Each point represents an individual biological sample colored by experimental group (ICD or control). The axes indicate the first two principal components with the percentage of explained variance shown in parentheses. PCA: principal component analysis.

A



B

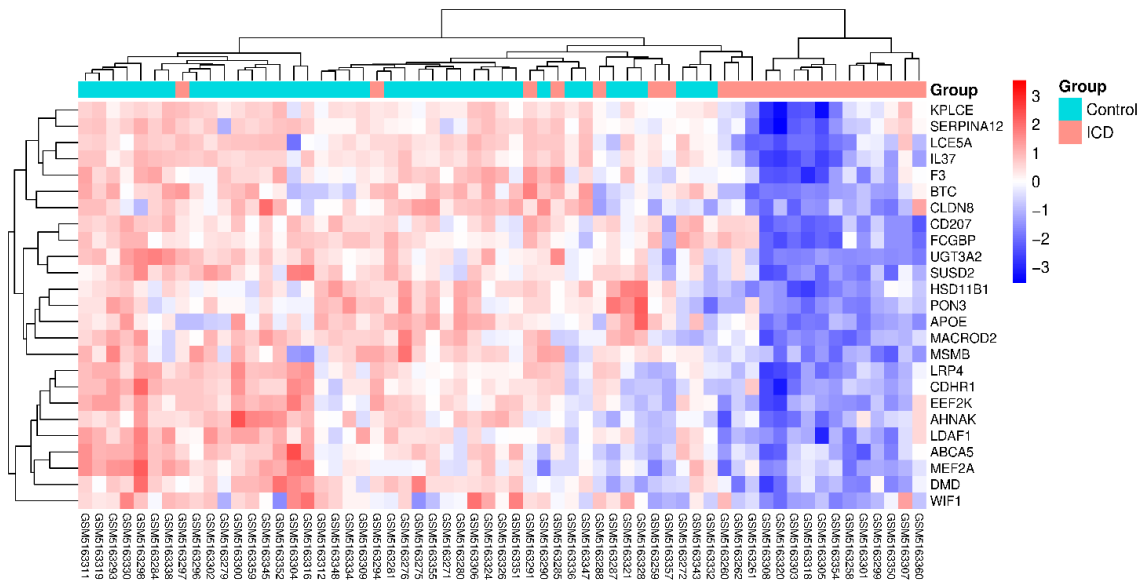


Figure S4. Hierarchical clustering heatmaps of the A. top 25 prioritized upregulated and B. top 25 prioritized downregulated genes in ICD and control samples from the GSE168735 dataset. Rows represent genes and columns represent samples. Expression values are displayed as row-wise z-scores, with red indicating relatively higher expression and blue indicating relatively lower expression. GSE, Gene Expression Omnibus dataset accession number; GSM, Gene Expression Omnibus sample accession number; ICD, irritant contact dermatitis.

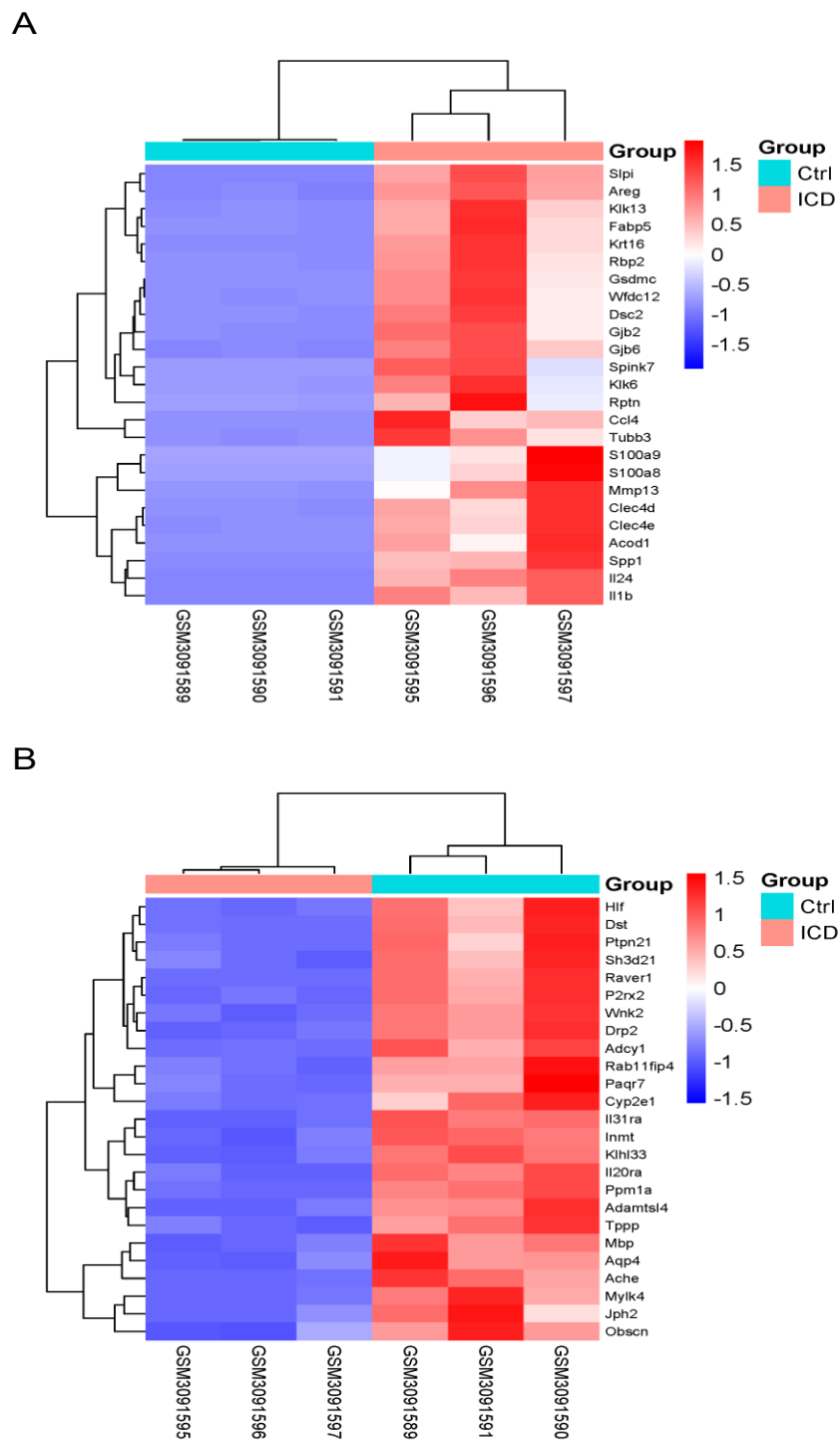


Figure S5. Hierarchical clustering heatmaps of the A. top 25 prioritized upregulated and B. top 25 prioritized downregulated genes in ICD and control samples from the GSE95317 dataset. Rows represent genes and columns represent samples. Expression values are displayed as row-wise z-scores, with red indicating relatively higher expression and blue indicating relatively lower expression.

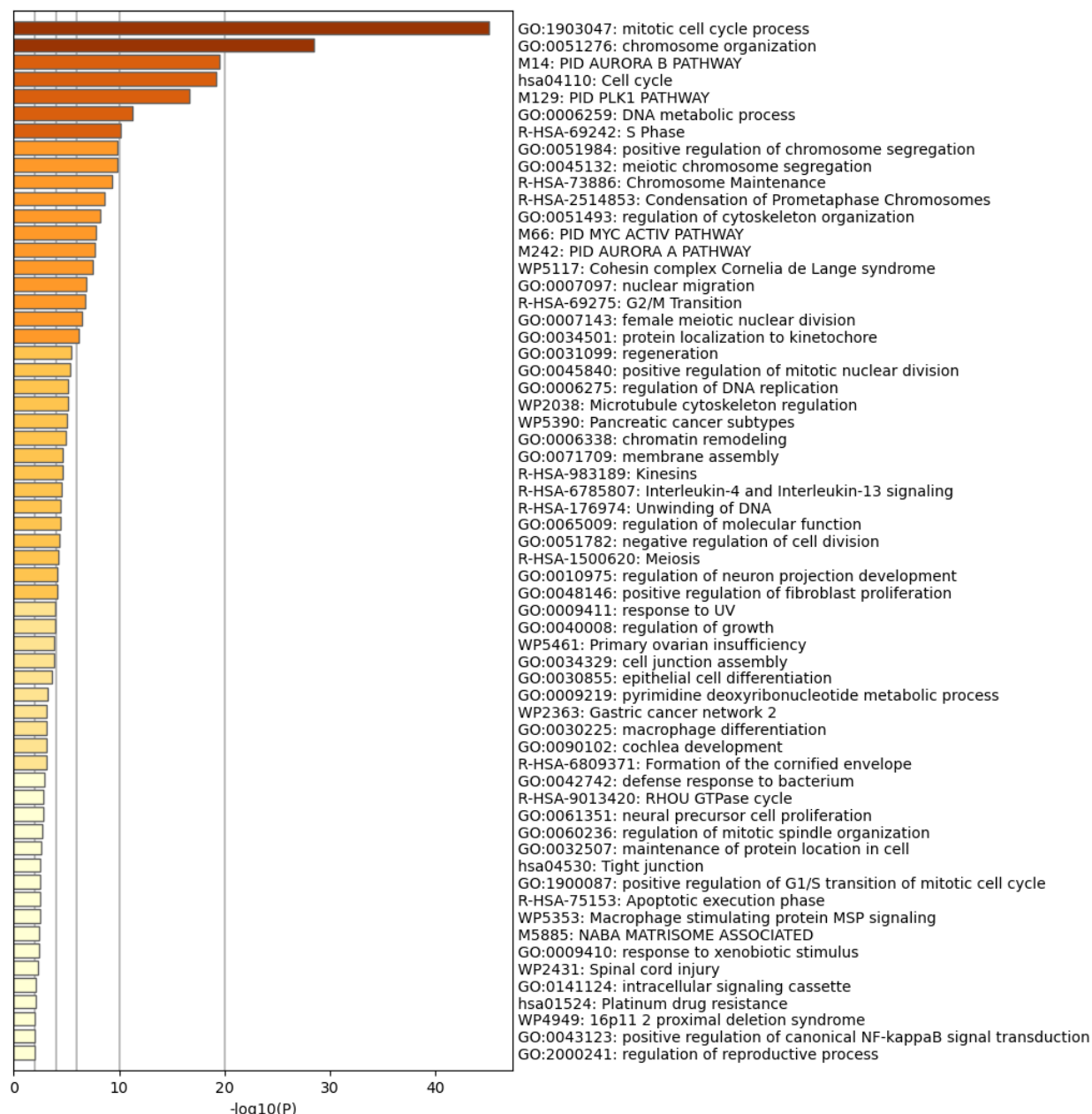


Figure S6. Integrated enrichment analysis of the 174 shared prioritized genes using Metascape. The top non-redundant enrichment clusters are shown, with bars representing the best-scoring term per cluster and colored by statistical significance ($-\log_{10}(P)$).

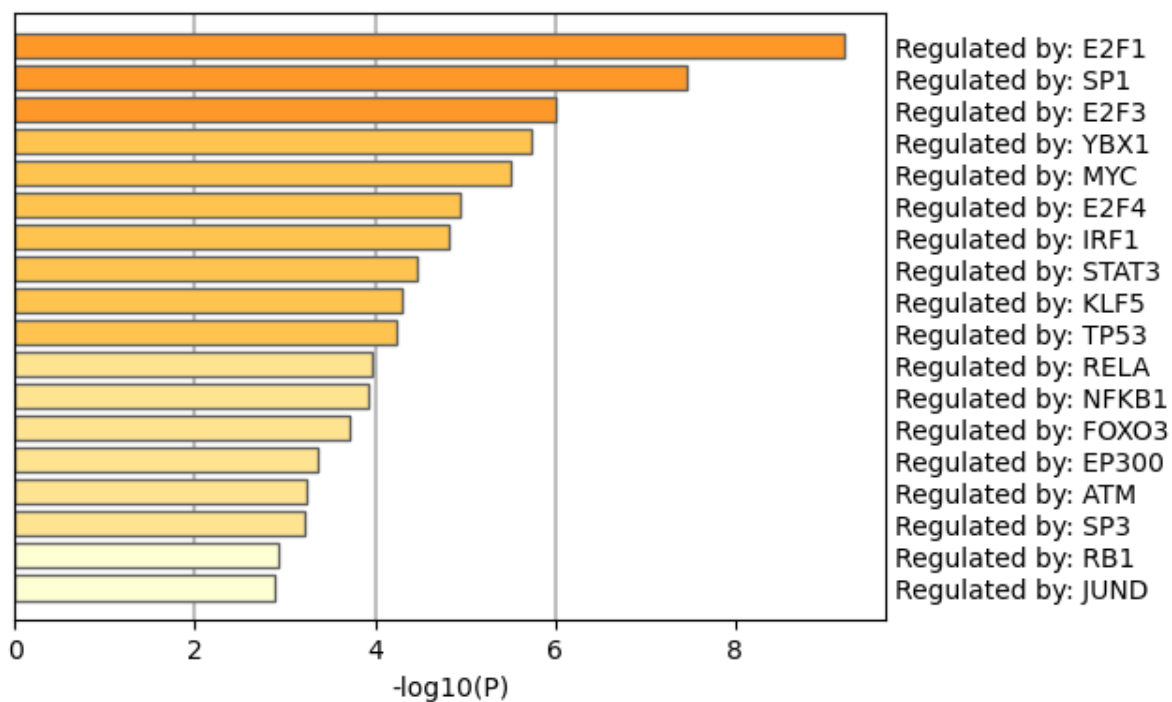
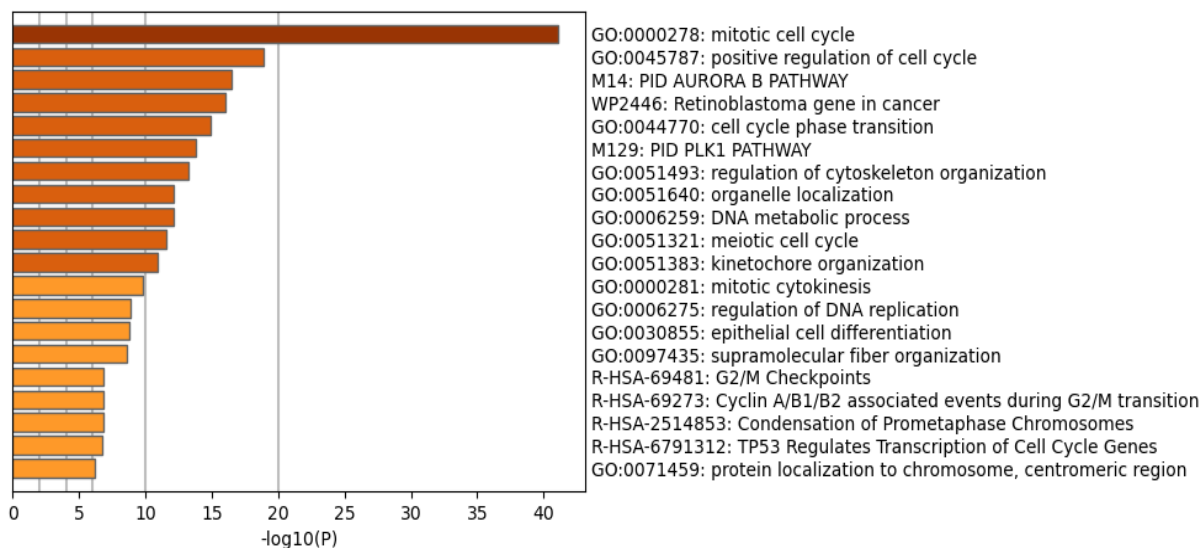


Figure S7. Transcriptional-regulator enrichment of the 174 shared prioritized genes using the TRRUST database in Metascape. The bar chart shows enriched transcription factors predicted to regulate the shared genes, colored by statistical significance ($-\log_{10} P$).

A



B

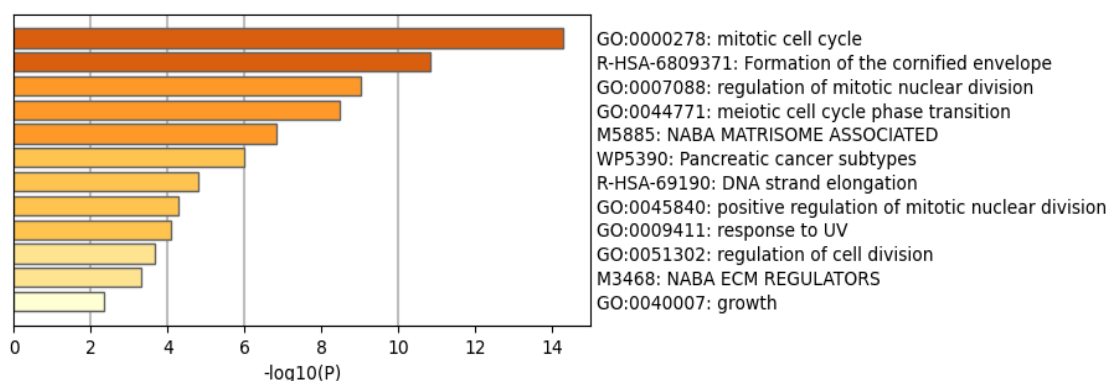


Figure S8. Sensitivity analysis of the π -value prioritization threshold. Metascape enrichment of the genes shared across all three datasets at the A. 85th-percentile (397 genes) and B. 95th-percentile (62 genes) cutoffs, with bars representing the top non-redundant enrichment clusters colored by statistical significance ($-\log_{10} P$).