Table S1 ARGs from the GeneCards website and Harmonizome portal

Gene symbol	Description
BMF	Bcl2 modifying factor
DAPK2	Death-associated protein kinase 2
E2F1	E2F transcription factor 1
STK11	Serine/threonine kinase 11
TFDP1	Transcription factor Dp-1
ABHD4	Abhydrolase domain containing 4
AFAP1L1	Actin filament associated protein 1-like 1
AKT1	v-akt murine thymoma viral oncogene homolog 1
AKT2	v-akt murine thymoma viral oncogene homolog 2
ANGPTL4	Angiopoietin-like 4
BAX	BCL2-associated X protein
BCAR1	Breast cancer anti-estrogen resistance 1
BCL2	B-cell CLL/lymphoma 2
BCL2L11	BCL2-like 11 (apoptosis facilitator)
BIRC3	Baculoviral IAP repeat containing 3
BMF	Bcl2 modifying factor
BRAF	B-Raf proto-oncogene, serine/threonine kinase
BRCA2	Breast cancer 2, early onset
BSG	Basigin (Ok blood group)
CALR	Calreticulin
CASP2	Caspase 2, apoptosis-related cysteine peptidase
CASP3	Caspase 3, apoptosis-related cysteine peptidase
CASP8	Caspase 8, apoptosis-related cysteine peptidase
CAV1	Caveolin 1, caveolae protein, 22kDa
CCAR2	Cell cycle and apoptosis regulator 2
CD63	CD63 molecule
CDCP1	CUB domain containing protein 1
CDH1	Cadherin 1, type 1, E-cadherin (epithelial)
CDH2	Cadherin 2, type 1, N-cadherin (neuronal)
CDKN2A	Cyclin-dependent kinase inhibitor 2A
CEACAM6	Carcinoembryonic antigen-related cell adhesion molecule 6 (non-specific cross reacting antigen)
CEBPB	CCAAT/enhancer binding protein (C/EBP), beta
CHUK	Conserved helix-loop-helix ubiquitous kinase
CLDN1	Claudin 1
CLU	Clusterin
CMA1	Chymase 1, mast cell
COPS5	COP9 signalosome subunit 5
CSNK2A1	Casein kinase 2, alpha 1 polypeptide
CSPG4	Chondroitin sulfate proteoglycan 4
CTNND1	Catenin (cadherin-associated protein), delta 1
CTTN	Cortactin
CXCL12	Chemokine (C-X-C motif) ligand 12
DAP3	Death associated protein 3
DAPK1	Death-associated protein kinase 1
DLG1	Discs, large homolog 1 (Drosophila)
EDA2R	Ectodysplasin A2 receptor
EEF1A1	Eukaryotic translation elongation factor 1 alpha 1
EEF2K	Eukaryotic elongation factor 2 kinase
EGFR	Epidermal growth factor receptor
EIF2AK3	Eukaryotic translation initiation factor 2-alpha kinase 3
ERBB4	erb-b2 receptor tyrosine kinase 4
FER	fer (fps/fes related) tyrosine kinase

Table S1 *(continued)*

https://dx.doi.org/10.21037/jtd-24-1123

Table S1 *(continued)*

Gene symbol	Description
FGF2	Fibroblast growth factor 2 (basic)
FN1	Fibronectin 1
HGF	Hepatocyte growth factor (hepapoietin A; scatter factor)
HK2	Hexokinase 2
HMCN1	Hemicentin 1
HMGA1	High mobility group AT-hook 1
HOXA10	Homeobox A10
HTRA1	HtrA serine peptidase 1
IGF1R	Insulin-like growth factor 1 receptor
IKZF3	IKAROS family zinc finger 3 (Aiolos)
ITGA2	Integrin, alpha 2 (CD49B, alpha 2 subunit of VLA-2 receptor)
ITGA3	Integrin, alpha 3 (antigen CD49C, alpha 3 subunit of VLA-3 receptor)
ITGA4	Integrin, alpha 4 (antigen CD49D, alpha 4 subunit of VLA-4 receptor)
ITGA5	Integrin, alpha 5 (fibronectin receptor, alpha polypeptide)
ITGA6	Integrin, alpha 6
ITGA8	Integrin, alpha 8
ITGAV	Integrin, alpha V
ITGB1	Integrin, beta 1 (fibronectin receptor, beta polypeptide, antigen CD29 includes MDF2, MSK12)
KDR	Kinase insert domain receptor
KL	Klotho
KRAS	Kirsten rat sarcoma viral oncogene homolog
LGALS1	Lectin, galactoside-binding, soluble, 1
LRP1	Low density lipoprotein receptor-related protein 1
LTB4R2	Leukotriene B4 receptor 2
MAPK1	Mitogen-activated protein kinase 1
MAPK3	Mitogen-activated protein kinase 3
MAVS	Mitochondrial antiviral signaling protein
MCL1	Myeloid cell leukemia 1
MDM2	MDM2 proto-oncogene, E3 ubiquitin protein ligase
MET	MET proto-oncogene, receptor tyrosine kinase
MGAT5	Mannosyl (alpha-1,6-)-glycoprotein beta-1,6-N-acetyl-glucosaminyltransferase
MIR200C	MicroRNA 200c
MMP11	Matrix metallopeptidase 11
MMP13	Matrix metallopeptidase 13
MMP2	Matrix metallopeptidase 2
MTA1	Metastasis associated 1
MTOR	Mechanistic target of rapamycin (serine/threonine kinase)
MYBBP1A	MYB binding protein (P160) 1a
NRP1	Neuropilin 1
NTF3	Neurotrophin 3
NTRK2	Neurotrophic tyrosine kinase, receptor, type 2
OLFM3	Olfactomedin 3
PAK1	p21 protein (Cdc42/Rac)-activated kinase 1
PAK4	p21 protein (Cdc42/Rac)-activated kinase 4
PECAM1	Platelet/endothelial cell adhesion molecule 1
PIK3CA	Phosphatidylinositol-4,5-bisphosphate 3-kinase, catalytic subunit alpha
PIK3CG	Phosphatidylinositol-4,5-bisphosphate 3-kinase, catalytic subunit gamma
PLK1	Polo-like kinase 1
PRKCA	Protein kinase C, alpha
PRKD1	Protein kinase D1
PTEN	Phosphatase and tensin homolog

Table S1 *(continued)*

https://dx.doi.org/10.21037/jtd-24-1123

Table S1 *(continued)*

Gene symbol	Description
PTHLH	Parathyroid hormone-like hormone
PTK2	Protein tyrosine kinase 2
PTK2B	Protein tyrosine kinase 2 beta
PTK6	Protein tyrosine kinase 6
PTPN11	Protein tyrosine phosphatase, non-receptor type 11
PTRH2	Peptidyl-tRNA hydrolase 2
RAD9A	RAD9 homolog A (S. pombe)
RHOA	ras homolog family member A
RHOC	ras homolog family member C
RIPK1	receptor (TNFRSF)-interacting serine-threonine kinase 1
ROCK1	Rho-associated, coiled-coil containing protein kinase 1
S100A4	S100 calcium binding protein A4
SCRIB	Scribbled planar cell polarity protein
SH3GLB1	SH3-domain GRB2-like endophilin B1
SIK1	Salt-inducible kinase 1
SIRPA	Signal-regulatory protein alpha
SIRT3	Sirtuin 3
SKP2	S-phase kinase-associated protein 2, E3 ubiquitin protein ligase
SLCO1B3	Solute carrier organic anion transporter family, member 1B3
SMAD4	SMAD family member 4
SNAI2	Snail family zinc finger 2
SRC	SRC proto-oncogene, non-receptor tyrosine kinase
STAT3	Signal transducer and activator of transcription 3 (acute-phase response factor)
STK11	Serine/threonine kinase 11
TAGLN	Transgelin
TGFB1	Transforming growth factor, beta 1
THBS1	Thrombospondin 1
TIMP1	TIMP metallopeptidase inhibitor 1
TP53	Tumor protein p53
TPM1	Tropomyosin 1 (alpha)
UCHL1	Ubiquitin carboxyl-terminal esterase L1 (ubiquitin thiolesterase)
USP9X	Ubiquitin specific peptidase 9, X-linked
WISP3	WNT1 inducible signaling pathway protein 3
WNT2	Wingless-type MMTV integration site family member 2
XIAP	X-linked inhibitor of apoptosis, E3 ubiquitin protein ligase
YWHAZ	Tyrosine 3-monooxygenase/tryptophan 5-monooxygenase activation protein, zeta

ARGs, anoikis-related genes.

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Table S2 Differentially expressed genes between the LUAD and normal lung tissues

Gene	conMean	treatMean	LogFC	P value	FDR
NTRK2	1.459345	0.424237	−1.78238	3.37E−21	1.73E−20
CEACAM6	208.0287	600.2231	1.528716	8.49E−08	1.50E−07
CAV1	344.7297	34.83055	−3.30704	1.09E−35	2.30E−33
CEACAM5	7.57202	232.7926	4.942223	3.91E−16	1.34E−15
PTRH2	2.439905	5.364446	1.136604	2.59E−30	4.53E−29
DAPK2	5.475327	1.577199	−1.79558	4.53E−30	6.80E−29
BMF	4.402678	9.359989	1.088126	6.90E−15	2.08E−14
CDH1	35.97208	79.27525	1.139993	3.24E−21	1.68E−20
PAK1	5.985777	14.75736	1.301824	1.99E−31	5.21E−30
ITGAV	12.86877	27.55803	1.098598	2.63E−14	7.52E−14
ERBB2	16.55201	37.24483	1.170033	7.02E−16	2.32E−15
ANGPTL4	7.903415	23.79498	1.590109	3.12E−08	5.70E−08
PDK4	53.4055	11.53916	−2.21045	1.54E−27	1.51E−26
ITGA2	4.838763	15.83726	1.710613	3.82E−10	7.98E−10
BIRC5	0.806704	11.4556	3.82787	2.17E−32	6.51E−31
TIMP1	104.2625	331.3464	1.66812	5.03E−24	3.20E−23
BDNF	1.412052	0.308034	−2.19663	4.34E−28	4.68E−27
DAP3	13.30665	27.13381	1.027945	1.44E−32	4.65E−31
CDCP1	5.997691	12.93023	1.108269	1.45E−10	3.19E−10
SKP2	2.257473	5.941725	1.396173	2.45E−19	9.81E−19
CHEK2	1.240853	3.807431	1.617485	7.44E−28	7.44E−27
E2F1	3.16123	9.782405	1.629703	1.38E−17	5.17E−17
EGF	0.341358	1.796843	2.396107	1.41E−13	3.84E−13
ITGB4	11.01898	37.56465	1.769385	8.66E−12	2.03E−11
CXCL12	14.45391	6.667421	−1.11626	1.11E−20	5.42E−20
PHLDA2	5.903152	32.97805	2.481949	2.98E−25	2.08E−24
CEMIP	2.207179	10.13753	2.19943	1.47E−11	3.37E−11
CDKN3	0.655207	5.414103	3.0467	1.11E−29	1.56E−28
SFN	66.35901	141.2371	1.089755	1.43E−12	3.57E−12
CDKN2A	0.498778	6.306165	3.660292	1.45E−14	4.22E−14
CLDN1	13.05098	27.14506	1.056531	9.13E−05	0.000131
PLAU	10.13356	67.75672	2.741223	1.24E−20	5.93E−20
PLK1	0.577681	5.911287	3.355128	2.65E−34	3.02E−32
PPARG	12.49131	4.583032	−1.44655	1.03E−25	7.47E−25
IL6	26.9944	4.258953	−2.66409	2.68E−14	7.61E−14
NQO1	11.45179	99.72122	3.122328	2.77E−23	1.66E−22
MMP13	0.172913	12.74526	6.203768	4.26E−26	3.44E−25
MMP9	8.445666	37.58517	2.15388	7.65E−16	2.47E−15
PTHLH	0.302626	2.21365	2.870819	1.08E−10	2.41E−10
PDGFB	16.21705	6.406811	−1.33983	2.92E−21	1.53E−20
EZH2	0.781974	5.121606	2.711404	3.59E−34	3.02E−32
HMGA1	22.9883	122.422	2.412891	2.54E−30	4.53E−29
ETV4	0.921363	14.53647	3.979764	1.28E−33	8.94E−32
LAMB3	42.63496	95.72951	1.166927	6.45E−08	1.15E−07
CDH2	0.419067	1.841415	2.135562	0.01477	0.017524
ZEB2	5.386688	2.468137	−1.12598	3.08E−27	2.81E−26
SPINK1	1.319622	146.1993	6.791668	1.77E−21	9.53E−21
AFP	0.003682	1.60566	8.768385	3.52E−07	5.92E−07
ITGA8	9.324436	2.461639	−1.9214	4.25E−30	6.61E−29
NOX4	0.344121	0.952887	1.469389	2.16E−12	5.30E−12
PBK	0.412442	4.809441	3.543607	6.04E−31	1.27E−29
MET	17.25154	46.3165	1.424801	0.00013	0.000183

Table S2 *(continued)*

https://dx.doi.org/10.21037/jtd-24-1123

Table S2 *(continued)*

Gene	conMean	treatMean	LogFC	P value	FDR
PARP1	13.51054	28.90555	1.097261	5.56E–28	5.84E–27
PRKCQ	4.268511	1.602126	–1.41374	3.24E–27	2.90E–26
BRCA2	0.339542	0.843169	1.312233	3.66E–16	1.26E–15
INHBB	4.473434	10.35193	1.210446	0.00024	0.000329
SESN1	11.429	4.071707	–1.48899	1.29E–30	2.59E–29
CD24	34.2443	101.4381	1.566664	1.47E–12	3.65E–12
ZEB1	6.721329	2.969283	–1.17863	1.77E–23	1.08E–22
KL	3.741415	0.827148	–2.17737	4.92E–31	1.09E–29
CRYAB	13.23142	3.801814	–1.79921	8.20E–29	9.48E–28
FGF2	2.567315	0.721668	–1.83085	1.29E–28	1.43E–27
LTF	11.62666	31.51266	1.438495	0.028511	0.032718
SPIB	0.678391	1.399431	1.044652	3.50E–05	5.09E–05
TRIM31	0.181827	3.289068	4.177039	1.59E–19	6.56E–19
PLAT	7.54567	26.14058	1.79257	0.010244	0.012329
UBE2C	1.60742	32.38577	4.332541	3.93E–33	2.02E–31
TWIST1	0.253824	1.521217	2.583325	4.50E–12	1.09E–11
PRDX4	23.96977	68.97368	1.52483	7.79E–27	6.82E–26
BNIP3	7.395377	17.84547	1.270862	1.19E–20	5.73E–20
TUBB3	0.068728	2.033853	4.887168	4.81E–33	2.02E–31
HSP90B1	115.4289	243.8431	1.078948	2.82E–27	2.63E–26
SLC2A1	3.128873	38.73479	3.629915	3.56E–32	9.96E–31
HMOX1	77.18324	27.76545	–1.475	4.41E–07	7.30E–07
CD36	19.92681	2.925336	–2.76804	5.72E–33	2.04E–31
CASP6	6.62428	13.99302	1.078872	3.68E–29	4.68E–28
CDH3	2.824993	21.18021	2.906398	1.68E–20	7.66E–20
PTK6	3.042013	10.78901	1.826464	6.09E–17	2.19E–16
CEACAM1	2.451078	11.42692	2.220948	4.75E–25	3.27E–24
GDF2	0.039181	0.001975	–4.31052	9.82E–36	2.30E–33
IL17A	0.00785	0.039486	2.330641	9.31E–05	0.000133
SIRPA	25.99414	12.09253	–1.10407	2.88E–24	1.86E–23
TRAF2	4.225668	9.311616	1.139852	9.70E–23	5.43E–22
ADCY10	0.019169	0.047658	1.313909	2.46E–06	3.89E–06
COL13A1	2.605212	1.174428	–1.14944	7.38E–18	2.84E–17
MNX1	0.031243	0.68558	4.455721	4.72E–26	3.61E–25
ITPRIP	14.52811	5.168806	–1.49094	1.22E–26	1.05E–25
BCL2L15	0.29178	3.668002	3.65204	1.59E–26	1.34E–25
MMP11	0.515533	21.32976	5.37066	4.33E–33	2.02E–31
SEMA7A	2.368737	5.125549	1.113588	5.99E–06	9.19E–06
CCDC178	0.199377	0.050053	–1.99397	2.65E–13	7.05E–13
BUB1	0.62834	4.43815	2.82034	7.17E–30	1.04E–28
CDC25C	0.113315	1.603509	3.822824	2.95E–34	3.02E–32
CDK1	1.559918	9.505669	2.607318	3.27E–29	4.29E–28
SLCO1B3	0.006367	1.009586	7.30893	9.34E–12	2.18E–11
MAD2L1	0.576884	3.733171	2.694049	2.56E–31	6.32E–30
SCRIB	9.058831	20.81375	1.20014	2.30E–19	9.27E–19
F10	3.916651	1.537651	–1.34889	2.33E–26	1.91E–25
NTRK3	0.227412	0.071928	–1.66069	4.57E–26	3.55E–25
TNC	11.52425	38.07029	1.723992	6.61E–06	1.01E–05
HOTAIR	0.002517	0.433452	7.428268	4.27E–12	1.04E–11
LDHA	51.09425	141.9697	1.47435	3.71E–30	5.99E–29
SPP1	9.26432	288.484	4.960662	2.02E–30	3.85E–29

Table S2 *(continued)*

https://dx.doi.org/10.21037/jtd-24-1123

Table S2 *(continued)*

Gene	conMean	treatMean	LogFC	P value	FDR
CRABP2	3.403524	179.2632	5.718907	4.06E–29	5.02E–28
CEACAM8	0.94575	0.244336	–1.95259	6.81E–14	1.88E–13
AFAP1L1	8.413644	2.851212	–1.56116	6.94E–28	7.11E–27
PCNA	26.99732	64.25891	1.251081	1.43E–25	1.02E–24
KRT14	0.348281	5.629812	4.014764	1.21E–05	1.82E–05
RAC3	1.863929	10.1597	2.446439	7.45E–25	5.05E–24
FOXA1	7.609689	22.00473	1.531904	7.50E–16	2.46E–15
ONECUT1	0.001762	0.283572	7.33047	7.16E–29	8.59E–28
S100A7	0.157863	6.745972	5.41728	0.000119	0.000169
MUC4	1.229496	7.08529	2.526759	9.91E–10	2.00E–09
UCHL1	2.681411	33.20264	3.630234	4.38E–11	9.90E–11
MMP3	0.074374	1.225321	4.042214	3.35E–18	1.30E–17
BRCA1	0.689916	2.127065	1.624371	9.06E–20	3.85E–19
ROR1	4.818184	1.543071	–1.64269	1.30E–29	1.76E–28
C5AR1	32.14265	9.266557	–1.79438	3.00E–30	5.04E–29
LATS2	10.73049	5.19765	–1.04578	8.34E–26	6.15E–25
CLDN18	276.8218	25.7074	–3.4287	5.84E–33	2.04E–31
THY1	5.818969	16.1184	1.469873	5.03E–16	1.68E–15
CDX2	0.005351	0.293834	5.778939	2.65E–09	5.23E–09
CENPF	0.40657	5.128707	3.65702	1.71E–33	1.03E–31
DOK2	25.69146	7.833581	–1.71355	4.74E–31	1.09E–29
SERPINB5	0.199115	4.366976	4.454963	3.85E–07	6.45E–07
HOXA10	0.048234	1.014478	4.394552	2.11E–10	4.50E–10
SRPX2	2.450677	13.50254	2.461979	1.58E–20	7.37E–20
SLPI	1398.957	679.0781	–1.0427	4.94E–22	2.73E–21
HTRA3	9.518907	22.18602	1.220783	1.56E–05	2.30E–05
IRX1	3.222207	1.341154	–1.26457	4.71E–21	2.36E–20
CXCL14	4.0955	87.22683	4.412661	9.19E–13	2.33E–12
KIF18A	0.589381	1.704394	1.531986	1.45E–20	6.86E–20
ZG16B	0.486258	2.9585	2.605072	2.61E–06	4.12E–06
SBSN	0.052878	1.083179	4.356451	6.59E–10	1.34E–09
SNORA80E	0.155159	1.686824	3.442495	3.45E–10	7.29E–10

LUAD, lung adenocarcinoma; FC, fold change; FDR, false discovery rate.

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