Table S6. Biofunctions identified by IPA for genes affected in summer cumulus cells

Category	Functions	Functions Annotation	Num. of Molecules	Predicted Activation State	Activation z-score	p-Value	Molecules
Cell Morphology	sprouting	sprouting	10	Decreased	-2.930	7.15×10^{-3}	↑↑ADAMTS1, ↓↓ANGPT2, ↓CAV1, ↓↓CRIP1, ↓↓CYP19A1, ↑↑DCN, ↓HMGB1, ↑↑RGS4, ↓SEPT11, ↓VEGFC
Cancer | Tumor Morphology	invasion	invasion of tumor	8	Decreased	-2.630	8.33×10^{-6}	↑↑ALCAM, ↓CAV1, ↓↓CTSV, ↓HMGB1, ↓↓LHCGR, ↓↓MMP1, ↓POSTN, ↓ZEB1
Cardiovascular System Development and Function	angiogenesis	angiogenesis	21	Decreased	-2.509	1.00×10^{-4}	↑↑ADAMTS1, ↑↑ALCAM, ↓↓ANGPT2, ↑↑ANGPTL1, ↑↑BTC, ↓CAV1, ↑COL4A2, ↑↑COL4A3, ↑↑DCN, ↓EGLN1, ↓ELK3, ↑↑FOXO1, ↓HMGB1, ↑↑KAT6A, ↓mir-210, ↓↓MMP1, ↑↑RGS4, ↓SMAD7, ↑↑TFPI, ↓VEGFC, ↓ZEB1
Lipid Metabolism | Small Molecule Biochemistry	synthesis	synthesis of lipid	21	Decreased	-2.493	2.82×10^{-4}	↓↓ABCA8, ↑↑AKR1C1/AKR1C2, ↓↓ANGPT2, ↓ARV1, ↓BHMT, ↓↓BNIP3, ↓CAV1, ↓CAV2, ↓CES1, ↓↓CYP19A1, ↑↑FOXO1, ↓GGPS1, ↑↑HPGD, ↓INSIG2, ↓↓LHCGR, ↓PON2, ↓↓PTGIS, ↑↑RHOQ, ↓↓SGMS2, ↓↓ST3GAL5, ↑↑VWF
Cellular Movement | Skeletal and Muscular System Development and Function	migration	migration of vascular smooth muscle cells	6	Decreased	-2.414	7.23×10^{-4}	↓↓ANGPT2, ↓CKLF, ↓HMGB1, ↑↑NOV, ↓POSTN, ↑↑TFPI
Cellular Movement | Skeletal and Muscular System Development and Function	migration	migration of smooth muscle cells	7	Decreased	-2.361	9.15×10^{-4}	↓↓ANGPT2, ↓CKLF, ↓↓CTSV, ↓HMGB1, ↑↑NOV, ↓POSTN, ↑↑TFPI
Cellular Development | Cellular Growth and Proliferation | Skeletal and Muscular System Development and Function	proliferation	proliferation of vascular smooth muscle cells	6	Decreased	-2.236	7.01×10^{-3}	↓↓ANGPT2, ↓CKLF, ↑↑NOV, ↓POSTN, ↓SKP2, ↑↑TFPI
Cardiovascular System Development and Function | Cellular Movement	migration	migration of endothelial cells	13	Decreased	-2.223	6.62×10^{-5}	↑↑ADAMTS1, ↓↓ANGPT2, ↑↑ANGPTL1, ↑↑BTC, ↓CAV1, ↑COL4A2, ↑↑DCN, ↑↑FOXO1, ↓HMGB1, ↓MAP2K6, ↓mir-210, ↑↑TFPI, ↓VEGFC

Cardiovascular System Development and Function | Cell Morphology | Cellular Development | Organismal Development	branching	branching of endothelial cells	5	Decreased	-2.173	7.55×10^{-4}	↓↓ANGPT2, ↑↑DCN, ↓HMGB1, ↑↑RGS4, ↓VEGFC
Cardiovascular System Development and Function | Cellular Development | Cellular Growth and Proliferation | Organismal Development | Tissue Development	proliferation	proliferation of endothelial cells	14	Decreased	-2.159	8.05×10^{-6}	↑↑ADAMTS1, ↓↓ANGPT2, ↑↑ANGPTL1, ↓CAV1, ↓CAV2, ↑COL4A2, ↑↑COL4A3, ↑↑FOXO1, ↓HMGB1, ↓↓MMP1, ↓SKP2, ↑↑TFPI, ↑↑TNFRSF11A, ↓VEGFC
Cellular Development | Cellular Growth and Proliferation | Skeletal and Muscular System Development and Function	proliferation	proliferation of muscle cells	11	Decreased	-2.137	3.50×10^{-3}	↓↓ANGPT2, ↓CAV1, ↓CKLF, ↑↑FOXO1, ↓HMGB1, ↓↓MMP1, ↑↑NOV, ↓POSTN, ↑↑RGS4, ↓SKP2, ↑↑TFPI
Nervous System Development and Function | Skeletal and Muscular System Development and Function	motor function	motor function	5	Decreased	-1.982	5.42×10^{-3}	↓↓ANGPT2, ↓CANX, ↓HMGB1, ↓RIMS2, ↓SLC12A2
Carbohydrate Metabolism	glycolysis	glycolysis of cells	5	Decreased	-1.963	1.32×10^{-3}	↓CAV1, ↓↓ENO2, ↓mir-210, ↓SKP2, ↓↓SLC2A1
Cardiovascular System Development and Function | Tissue Development	development	development of cardiovascular tissue	17		-1.930	5.53×10^{-6}	↑↑ADAMTS1, ↓↓ANGPT2, ↑↑ANGPTL1, ↓CAV1, ↓CAV2, ↑COL4A2, ↑↑COL4A3, ↓EGLN1, ↑↑FOXO1, ↓HMGB1, ↓MAP2K6, ↓↓MMP1, ↓SKP2, ↓SMAD7, ↑↑TFPI, ↑↑TNFRSF11A, ↓VEGFC
Cardiovascular System Development and Function | Cellular Development | Organismal Development | Tissue Development	development	endothelial cell development	15		-1.928	1.22×10^{-5}	↑↑ADAMTS1, ↓↓ANGPT2, ↑↑ANGPTL1, ↓CAV1, ↓CAV2, ↑COL4A2, ↑↑COL4A3, ↑↑FOXO1, ↓HMGB1, ↓MAP2K6, ↓↓MMP1, ↓SKP2, ↑↑TFPI, ↑↑TNFRSF11A, ↓VEGFC
Cellular Movement	cell movement	cell movement of muscle cells	9		-1.905	1.34×10^{-4}	↓↓ANGPT2, ↓CKLF, ↑↑COL4A3, ↓↓CTSV, ↑↑FOXO1, ↓HMGB1, ↑↑NOV, ↓POSTN, ↑↑TFPI

Cellular Movement | Skeletal and Muscular System Development and Function	migration	migration of muscle cells	8	-1.905	3.23×10^{-4}	↓↓ANGPT2, ↓CKLF, ↓↓CTSV, ↑↑FOXO1, ↓HMGB1, ↑↑NOV, ↓POSTN, ↑↑TFPI
Cardiovascular Disease	vascular disease	vascular disease	24	-1.846	1.21×10^{-3}	↓↓ANGPT2, ↑↑BMPR1B, ↑↑BTC, ↓CAV1, ↓↓CTSV, ↓↓CYP19A1, ↑↑FOXO1, ↓GUCY1B3, ↓HMGB1, ↑↑HPGD, ↑↑KAT6A, ↑↑KCTD12, ↑↑MAP4K4, ↓mir-210, ↓↓MMP1, ↑↑NOV, ↓PDE7B, ↓↓PELP1, ↓↓PYGL, ↑RBFOX1, ↑↑TFPI, ↓↓UST, ↓VEGFC, ↑↑VWF
Cardiovascular System Development and Function | Organismal Development	development	development of blood vessel	26	-1.813	6.89×10^{-6}	↑↑ADAMTS1, ↑↑ALCAM, ↓↓ANGPT2, ↑↑ANGPTL1, ↑↑BTC, ↓CAV1, ↓CAV2, ↑COL4A2, ↑↑COL4A3, ↓↓COL5A1, ↑↑DCN, ↓EGLN1, ↑↑FOXO1, ↓↓GUCY1A3, ↓HMGB1, ↑↑KAT6A, ↓MAP2K6, ↓mir-210, ↓↓MMP1, ↑↑RGS4, ↓SKP2, ↓SMAD7, ↑↑TFPI, ↑↑TNFRSF11A, ↓VEGFC, ↓ZEB1
Cardiovascular System Development and Function	development	development of cardiovascular system	28	-1.813	1.01×10^{-4}	↑↑ADAMTS1, ↑↑ALCAM, ↓↓ANGPT2, ↑↑ANGPTL1, ↑↑BTC, ↓CAV1, ↓CAV2, ↑COL4A2, ↑↑COL4A3, ↓↓COL5A1, ↓↓CRIP1, ↑↑DCN, ↓EGLN1, ↑↑FOXO1, ↓↓GUCY1A3, ↓HMGB1, ↑↑KAT6A, ↑↑KCNJ8, ↓MAP2K6, ↓mir-210, ↓↓MMP1, ↑↑RGS4, ↓SKP2, ↓SMAD7, ↑↑TFPI, ↑↑TNFRSF11A, ↓VEGFC, ↓ZEB1
Cardiovascular System Development and Function | Organismal Development	vasculogenesis	vasculogenesis	25	-1.801	2.49×10^{-6}	↑↑ADAMTS1, ↑↑ALCAM, ↓↓ANGPT2, ↑↑ANGPTL1, ↑↑BTC, ↓CAV1, ↓CAV2, ↑COL4A2, ↑↑COL4A3, ↑↑DCN, ↓EGLN1, ↑↑FOXO1, ↓↓GUCY1A3, ↓HMGB1, ↑↑KAT6A, ↓MAP2K6, ↓mir-210, ↓↓MMP1, ↑↑RGS4, ↓SKP2, ↓SMAD7, ↑↑TFPI, ↑↑TNFRSF11A, ↓VEGFC, ↓ZEB1

Cancer | Cellular Development | Cellular Growth and Proliferation | Tumor Morphology	proliferation	proliferation of tumor cells	20	-1.800	3.07×10^{-3}	↑↑ANGPTL1, ↑↑ANK3, ↓BHMT, ↑↑BTC, ↓CAV1, ↓CDCA7L, ↑↑COL4A3, ↓↓CTSV, ↓↓CYP19A1, ↑↑DCN, ↓HMGB1, ↓MAP2K6, ↓↓MMP1, ↑↑NOV, ↑↑RGS4, ↓↓RYR2, ↓SKP2, ↓TES, ↓VEGFC, ↓ZEB1
Developmental Disorder | Skeletal and Muscular Disorders	muscular hypertrophy	muscular hypertrophy	8	-1.794	1.19×10^{-3}	↓↓ANGPT2, ↓CAV1, ↓HMGB1, ↓MAP2K6, ↓↓MMP1, ↑↑RGS4, ↓↓RYR2, ↓SMAD7
Cardiovascular Disease	disorder of artery	disorder of artery	19	-1.741	3.07×10^{-3}	↓↓ANGPT2, ↑↑BMPR1B, ↓CAV1, ↓↓CTSV, ↓↓CYP19A1, ↑↑FOXO1, ↓GUCY1B3, ↓HMGB1, ↑↑HPGD, ↑↑KAT6A, ↑↑KCTD12, ↑↑MAP4K4, ↓↓MMP1, ↓PDE7B, ↓↓PELP1, ↑RBFOX1, ↑↑TFPI, ↓↓UST, ↑↑VWF
Organismal Injury and Abnormalities	interstitial fibrosis	interstitial fibrosis	6	-1.698	3.12×10^{-4}	↓↓ANGPT2, ↓CAV1, ↑↑COL4A3, ↑↑DCN, ↓POSTN, ↓SKP2
Cell Death and Survival	cell death	cell death of kidney cells	11	-1.553	3.25×10^{-3}	↓↓BNIP3, ↓CCBL1, ↑↑DCN, ↑↑FOXO1, ↓MAP2K6, ↑↑PKN2, ↓↓PTGIS, ↑↑RGS4, ↓SMAD7, ↓TMX1, ↓ZEB1
Developmental Disorder	hypertrophy	hypertrophy of cells	11	-1.518	3.81×10^{-4}	↓↓ANGPT2, ↓CAV1, ↓↓CYP19A1, ↓HMGB1, ↓↓LHCGR, ↓MAP2K6, ↓↓MMP1, ↑↑RGS4, ↓↓RYR2, ↓SKP2, ↓SMAD7
Cancer	development	development of tumor	12	-1.510	5.22×10^{-4}	↑↑ADAMTS1, ↑↑ALCAM, ↑↑ANGPTL1, ↓CAV1, ↑↑COL4A3, ↓HMGB1, ↓↓MMP1, ↑↑NOV, ↓POSTN, ↓↓PTGIS, ↓SKP2, ↓VEGFC
Cell Morphology | Skeletal and Muscular System Development and Function	size	size of muscle cells	5	-1.471	8.97×10^{-3}	↓↓ANGPT2, ↓CAV2, ↑↑FOXO1, ↓MAP2K6, ↑↑RGS4

Cell Death and Survival	apoptosis	apoptosis	50	1.470	5.27×10^{-3}	↑↑ADAMTS1, ↑↑ALCAM, ↓↓ANGPT2, ↑↑ANGPTL1, ↑↑ANXA4, ↑↑BMPR1B, ↓↓BNIP3, ↑↑BTC, ↓CANX, ↓CAV1, ↓CDK8, ↑COL4A2, ↑↑COL4A3, ↓↓CTSV, ↓↓CYP19A1, ↓↓DAPK1, ↑↑DCN, ↓↓DDIT4, ↓FANK1, ↑↑FOXO1, ↓HMGB1, ↓IKBIP, ↑↑INPP4A, ↓↓LHCGR, ↓MAP2K6, ↓mir-210, ↓↓MMP1, ↓NME5, ↓↓PELP1, ↑↑PKN2, ↓PON2, ↓↓PTGIS, ↓RASD1, ↑↑RGS4, ↓↓RYR2, ↓↓SGMS2, ↓SKP2, ↑↑SLC20A1, ↓↓SLC2A1, ↓SMAD7, ↑↑SND1, ↓↓SORBS2, ↓STYXL1, ↑↑SYNE1, ↑↑TFPI, ↓TMX1, ↑↑TNFRSF11A, ↓TYMS, ↓VEGFC, ↓ZEB1
Cell Death and Survival	cell death	cell death	65	1.464	5.78×10^{-4}	↑↑ADAMTS1, ↑↑ALCAM, ↓↓ANGPT2, ↑↑ANGPTL1, ↑↑ANXA4, ↓↓ATP2B1, ↑↑BMPR1B, ↓↓BNIP3, ↑↑BTC, ↓CANX, ↓CAV1, ↓CCBL1, ↓CDK8, ↓CES1, ↑COL4A2, ↑↑COL4A3, ↓↓CTSV, ↓↓CYP19A1, ↑CYP2B6, ↓↓DAPK1, ↑↑DCN, ↓↓DDIT4, ↑↑DPP8, ↑↑DST, ↓↓DYNC1I1, ↓EGLN1, ↓FANK1, ↑↑FOXO1, ↓GGPS1, ↓GUCY1B3, ↓HMGB1, ↓IKBIP, ↑↑INPP4A, ↓↓LHCGR, ↑↑MAML2, ↓MAP2K6, ↓mir-210, ↓↓MMP1, ↑MT1X, ↓NME5, ↓↓PELP1, ↑↑PKN2, ↓PON2, ↓POSTN, ↓↓PTGIS, ↓RASD1, ↑↑RGS4, ↓↓RYR2, ↓↓SGMS2, ↓SKP2, ↓SLC12A2, ↑↑SLC20A1, ↓↓SLC2A1, ↓SMAD7, ↑↑SND1, ↓↓SORBS2, ↓STYXL1, ↑↑SYNE1, ↑↑TFPI, ↓TMX1, ↑↑TNFRSF11A, ↑TOX, ↓TYMS, ↓VEGFC, ↓ZEB1

Cellular Movement	invasion	invasion of cells	27	-1.436	1.72×10^{-6}	↑↑ADAMTS1, ↑↑ALCAM, ↓↓ANGPT2, ↓ASAP1, ↓BCAT1, ↑↑BTC, ↓CAV1, ↓↓CTSV, ↑↑DCN, ↓HMGB1, ↓MAP2K6, ↑↑MAP4K4, ↓mir-210, ↓↓MMP1, ↑↑NOV, ↓POSTN, ↑↑RGS4, ↓RNF144A, ↑↑RORA, ↓SEPT11, ↓SKP2, ↓SLC12A2, ↓↓SLC2A1, ↓SMAD7, ↓VEGFC, ↓ZEB1, ↓ZNF350
Cancer | Cardiovascular System Development and Function	angiogenesis	angiogenesis of tumor	5	-1.387	2.73×10^{-3}	↑↑ADAMTS1, ↑↑ANGPTL1, ↑↑COL4A3, ↓↓MMP1, ↓VEGFC

Cancer	epithelial neoplasia	epithelial neoplasia	107	-1.385	3.13×10^{-5}	↓↓ABCA8, ↑ACPP, ↓↓ACTN2, ↑↑ADAMTS1, ↓AJUBA, ↑↑AKR1C1/AKR1C2, ↑↑ALCAM, ↑↑ALG6, ↓ALG9, ↓↓ANGPT2, ↑↑ANGPTL1, ↑↑ANK3, ↑↑ANKRD28, ↑↑ANXA4, ↓ARV1, ↓ASAP1, ↓↓ATP2B1, ↓BCAT1, ↓BHMT, ↑↑BMPR1B, ↓↓BNIP3, ↓CANX, ↓CAV1, ↓↓CBWD3/CBWD6, ↓CDK8, ↓CES1, ↓CHST7, ↓CKLF, ↓↓COL12A1, ↑↑COL14A1, ↑COL4A2, ↓↓COX4I1, ↓↓CTSV, ↓↓CYP19A1, ↓↓DAPK1, ↓DCAF13, ↓↓DCLK1, ↑↑DCN, ↑↑DST, ↓↓ELAVL2, ↓↓ENO2, ↓ETAA1, ↑↑FAM13A, ↓FANK1, ↑↑FOXO1, ↓GGPS1, ↑↑GPR116, ↓↓GUCY1A3, ↓H3F3A/H3F3B, ↓HMCN1, ↓HMGB1, ↑↑HPGD, ↓IFT81, ↓↓JAKMIP2, ↑↑KAT6A, ↓↓KCNAB1, ↓KCTD1, ↓↓LHCGR, ↑↑MAML2, ↑↑MAP4K4, ↓↓MCC, ↓mir-210, ↓↓MMP1, ↓↓MT-ND2, ↓↓MT-ND4L, ↑MT1X, ↓NIN, ↑↑NOV, ↓↓OLFM4, ↑↑PABPC1, ↓PARP11, ↓↓PDZRN3, ↓↓PELP1, ↓↓PID1, ↑↑PKN2, ↓PON2, ↓POSTN, ↑↑PRICKLE1, ↓PROSC, ↓↓PTGIS, ↓RARS2, ↓↓RGS7, ↑↑RHOQ, ↓↓RHPN2, ↓↓RIF1, ↓RIMS2, ↓↓RIN2, ↑↑RORA, ↓↓RYR2, ↑SHC4, ↓↓SHISA2, ↓SKP2, ↓SLC12A2, ↓↓SLC2A1, ↓SMAD7, ↑↑SND1, ↑↑SYNE1, ↓TES, ↑↑TFPI, ↓↓TNFAIP6, ↑TOX, ↓TYMS, ↓↓UGT1A9 (includes others), ↓↓UST, ↓VEGFC, ↑↑VWF, ↓ZEB1
Cardiovascular Disease | Developmental Disorder | Skeletal and Muscular Disorders	hypertrophy	hypertrophy of cardiomyocytes	6	-1.380	2.22×10^{-3}	↓↓ANGPT2, ↓CAV1, ↓HMGB1, ↓MAP2K6, ↑↑RGS4, ↓SMAD7
Molecular Transport | Nucleic Acid Metabolism | Small Molecule Biochemistry	quantity	quantity of cyclic nucleotides	7	-1.380	7.70×10^{-3}	↓CAV1, ↓CAV2, ↑↑COL4A3, ↓EGLN1, ↓↓GUCY1A3, ↓GUCY1B3, ↓↓LHCGR

Cellular Growth and Proliferation	proliferation	proliferation of cells	70	-1.358	2.95×10^{-4}	↑ACPP, ↑↑ADAMTS1, ↓AJUBA, ↑↑AKR1C1/AKR1C2, ↑↑ALCAM, ↓↓ANGPT2, ↑↑ANGPTL1, ↑↑ANK3, ↓ARV1, ↓BCAT1, ↓BHMT, ↑↑BMPR1B, ↓↓BNIP3, ↑↑BTC, ↓CAV1, ↓CAV2, ↓CDCA7L, ↓CDK8, ↓CKLF, ↑↑COL14A1, ↑COL4A2, ↑↑COL4A3, ↓↓CRIP1, ↓↓CTSV, ↓↓CYP19A1, ↑CYP2B6, ↓↓DAPK1, ↑↑DCN, ↓EGLN1, ↑↑FOXO1, ↓GLCE, ↓HMGB1, ↑↑HNRNPD, ↑↑HPGD, ↑↑INPP4A, ↓IRX3, ↓↓LHCGR, ↓MAP2K6, ↑↑MAP4K4, ↓↓MCC, ↓↓MMP1, ↓↓MT-ND2, ↑↑NOV, ↓↓PELP1, ↓POSTN, ↓RABEP1, ↓RASD1, ↑↑RGS4, ↑↑RORA, ↓↓RYR2, ↑SEPT6, ↓SKP2, ↓SLC12A2, ↑↑SLC20A1, ↓↓SLC26A2, ↓↓SLC2A1, ↓SMAD7, ↓SMYD3, ↑↑SND1, ↓↓STC2, ↓TES, ↑↑TFPI, ↓↓TNFAIP6, ↑↑TNFRSF11A, ↑TOX, ↓TYMS, ↓VEGFC, ↑↑VWF, ↓ZEB1, ↓ZNF350
Cellular Movement	migration	migration of tumor cell lines	17	-1.357	1.79×10^{-3}	↓↓ANGPT2, ↑↑ANKRD28, ↓CAV1, ↓CKLF, ↑↑COL4A3, ↑↑DCN, ↑↑HPGD, ↑↑MAP4K4, ↓mir-210, ↓↓MMP1, ↑↑NOV, ↓POSTN, ↓RNF144A, ↑SHC4, ↓SLC12A2, ↓↓SLC2A1, ↓VEGFC
Cellular Movement | Hematological System Development and Function | Immune Cell Trafficking | Inflammatory Response	infiltration	infiltration of macrophages	6	1.342	5.51×10^{-3}	↓↓ANGPT2, ↓CAV1, ↓CES1, ↑↑COL4A3, ↓EGLN1, ↓SMAD7
Cell Death and Survival	cell death	cell death of kidney cell lines	10	-1.289	3.09×10^{-3}	↓↓BNIP3, ↓CCBL1, ↑↑FOXO1, ↓MAP2K6, ↑↑PKN2, ↓↓PTGIS, ↑↑RGS4, ↓SMAD7, ↓TMX1, ↓ZEB1
Cellular Development | Cellular Growth and Proliferation | Skeletal and Muscular System Development and Function	proliferation	proliferation of smooth muscle cells	10	-1.265	1.21×10^{-3}	↓↓ANGPT2, ↓CAV1, ↓CKLF, ↑↑FOXO1, ↓HMGB1, ↓↓MMP1, ↑↑NOV, ↓POSTN, ↓SKP2, ↑↑TFPI

Cell Signaling | Molecular Transport | Small Molecule Biochemistry	release	release of nitric oxide	6	-1.195	2.75×10^{-4}	↓↓ANGPT2, ↓CAV1, ↓HMGB1, ↓SMAD7, ↑↑TFPI, ↓VEGFC
Cellular Movement | Hematological System Development and Function | Immune Cell Trafficking | Inflammatory Response	cell movement	cell movement of macrophages	8	1.180	8.57×10^{-3}	↓↓ANGPT2, ↓CAV1, ↓CES1, ↓CKLF, ↑↑COL4A3, ↓EGLN1, ↓HMGB1, ↓SMAD7
Cell-To-Cell Signaling and Interaction | Connective Tissue Development and Function	binding	binding of fibroblast cell lines	4	1.154	1.21×10^{-3}	↑↑ALCAM, ↓↓DAPK1, ↓↓LHCGR, ↑↑TFPI
Cancer | Organ Development | Respiratory Disease	metastasis	metastasis of lung	4	1.154	2.91×10^{-3}	↑↑ADAMTS1, ↑↑SND1, ↑↑TNFRSF11A, ↓VEGFC

Cancer	carcinoma	carcinoma	103	-1.153	4.09×10^{-5}	↓↓ABCA8, ↑ACPP, ↓↓ACTN2, ↑↑ADAMTS1, ↓AJUBA, ↑↑AKR1C1/AKR1C2, ↑↑ALCAM, ↑↑ALG6, ↓ALG9, ↓↓ANGPT2, ↑↑ANGPTL1, ↑↑ANK3, ↑↑ANKRD28, ↑↑ANXA4, ↓ARV1, ↓ASAP1, ↓↓ATP2B1, ↓BCAT1, ↓BHMT, ↑↑BMPR1B, ↓↓BNIP3, ↓CANX, ↓CAV1, ↓↓CBWD3/CBWD6, ↓CES1, ↓CHST7, ↓CKLF, ↓↓COL12A1, ↑↑COL14A1, ↑COL4A2, ↓↓COX4I1, ↓↓CTSV, ↓↓CYP19A1, ↓↓DAPK1, ↓DCAF13, ↓↓DCLK1, ↑↑DCN, ↑↑DST, ↓↓ELAVL2, ↓↓ENO2, ↓ETAA1, ↑↑FAM13A, ↓FANK1, ↑↑FOXO1, ↓GGPS1, ↑↑GPR116, ↓↓GUCY1A3, ↓HMCN1, ↓HMGB1, ↑↑HPGD, ↓IFT81, ↓↓JAKMIP2, ↑↑KAT6A, ↓KCTD1, ↓↓LHCGR, ↑↑MAML2, ↑↑MAP4K4, ↓↓MCC, ↓mir-210, ↓↓MMP1, ↓↓MT-ND2, ↓↓MT-ND4L, ↑MT1X, ↓NIN, ↑↑NOV, ↓↓OLFM4, ↑↑PABPC1, ↓PARP11, ↓↓PDZRN3, ↓↓PELP1, ↓↓PID1, ↑↑PKN2, ↓PON2, ↓POSTN, ↑↑PRICKLE1, ↓PROSC, ↓RARS2, ↓↓RGS7, ↑↑RHOQ, ↓↓RHPN2, ↓↓RIF1, ↓RIMS2, ↓↓RIN2, ↑↑RORA, ↓↓RYR2, ↑SHC4, ↓↓SHISA2, ↓SKP2, ↓SLC12A2, ↓↓SLC2A1, ↓SMAD7, ↑↑SND1, ↑↑SYNE1, ↓TES, ↑↑TFPI, ↓↓TNFAIP6, ↑TOX, ↓TYMS, ↓↓UGT1A9 (includes others), ↓↓UST, ↓VEGFC, ↑↑VWF, ↓ZEB1
Cancer	neoplasia	neoplasia of cells	11	1.081	3.56×10^{-3}	↑↑ADAMTS1, ↓↓ANGPT2, ↑↑ANGPTL1, ↓CAV1, ↑COL4A2, ↓↓DAPK1, ↓SKP2, ↑↑SND1, ↑↑TNFRSF11A, ↓ZEB1, ↓ZNF350

Cellular Development | Cellular Growth and Proliferation	proliferation	proliferation of tumor cell lines	40	-1.073	9.57×10^{-6}	↑ACPP, ↑↑ADAMTS1, ↓AJUBA, ↓↓ANGPT2, ↑↑ANGPTL1, ↑↑BMPR1B, ↓↓BNIP3, ↑↑BTC, ↓CAV1, ↓CDK8, ↑↑COL14A1, ↑COL4A2, ↑↑COL4A3, ↓↓CYP19A1, ↑CYP2B6, ↓↓DAPK1, ↑↑DCN, ↑↑FOXO1, ↓HMGB1, ↑↑HPGD, ↓MAP2K6, ↑↑MAP4K4, ↓↓MMP1, ↓↓MT-ND2, ↑↑NOV, ↓↓PELP1, ↓POSTN, ↓RASD1, ↑↑RORA, ↓SKP2, ↓↓SLC26A2, ↓↓SLC2A1, ↓SMAD7, ↑↑SND1, ↓TES, ↑↑TNFRSF11A, ↓TYMS, ↓VEGFC, ↓ZEB1, ↓ZNF350
Cancer	benign neoplasia	benign neoplasia	19	-1.067	2.53×10^{-3}	↓↓ABCA8, ↑↑ALCAM, ↓↓ANGPT2, ↑↑ANGPTL1, ↓BHMT, ↓↓CYP19A1, ↓↓DAPK1, ↓↓DCLK1, ↑↑DCN, ↑↑DST, ↑↑FOXO1, ↓↓LHCGR, ↓↓MMP1, ↑↑NOV, ↓↓PTGIS, ↑↑RORA, ↓↓SLC2A1, ↓↓SORBS2, ↓ZEB1
Cancer | Cellular Development | Cellular Growth and Proliferation | Reproductive System Disease	neoplasia	neoplasia of breast cancer cell lines	4	1.067	4.94×10^{-3}	↑↑ADAMTS1, ↑↑ANGPTL1, ↑↑SND1, ↑↑TNFRSF11A
Energy Production | Lipid Metabolism | Small Molecule Biochemistry	oxidation	oxidation of lipid	8	1.034	1.99×10^{-3}	↑↑AKR1C1/AKR1C2, ↓BDH2, ↓↓CYP19A1, ↑CYP2B6, ↑↑FOXO1, ↑↑HPGD, ↓PON2, ↓↓SLC2A1
Cancer | Cellular Development | Cellular Growth and Proliferation	neoplasia	neoplasia of tumor cell lines	10	1.019	3.68×10^{-4}	↑↑ADAMTS1, ↓↓ANGPT2, ↑↑ANGPTL1, ↓CAV1, ↑COL4A2, ↓↓DAPK1, ↓SKP2, ↑↑SND1, ↑↑TNFRSF11A, ↓ZNF350
Organismal Development	formation	formation of vessel	6	-1.000	1.60×10^{-3}	↑↑ADAMTS1, ↓↓ANGPT2, ↑COL4A2, ↓HMGB1, ↓mir-210, ↓VEGFC
Cancer | Dermatological Diseases and Conditions	hyperplasia	hyperplasia of skin	4	1.000	7.75×10^{-3}	↓CAV1, ↓↓CTSV, ↓SMAD7, ↓VEGFC
Connective Tissue Development and Function | Skeletal and Muscular System Development and Function	bone mineral density	bone mineral density	6	-0.970	1.03×10^{-2}	↓↓CYP19A1, ↑↑DCN, ↑↑FOXO1, ↓↓LHCGR, ↓POSTN, ↑↑TNFRSF11A

Lipid Metabolism | Molecular Transport | Small Molecule Biochemistry	concentration	concentration of lipid	20	-0.968	3.98×10^{-3}	↑ACPP, ↓↓ANGPT2, ↓BHMT, ↓CAV1, ↓CES1, ↑↑COL4A3, ↓↓CYP19A1, ↑↑FOXO1, ↑↑GPR116, ↑↑HPGD, ↑↑INPP4A, ↓↓LHCGR, ↓PON2, ↓↓PTGIS, ↑↑RGS4, ↑↑RORA, ↓↓SGMS2, ↓SLC12A2, ↓↓ST3GAL5, ↑↑TFPI
Cell Morphology	size	size of cells	11	-0.913	5.64×10^{-3}	↓↓ANGPT2, ↓BHMT, ↓CAV2, ↓↓CYP19A1, ↑↑FOXO1, ↓↓LHCGR, ↓MAP2K6, ↓PON2, ↑↑RGS4, ↓SEPT11, ↓SLC12A2
Organismal Survival	organismal death	organismal death	45	0.866	8.86×10^{-3}	↑↑ADAMTS1, ↓↓ANGPT2, ↑↑ANK3, ↓↓ATP2B1, ↑↑BTC, ↓CANX, ↓CAV1, ↓↓COL12A1, ↑COL4A2, ↑↑COL4A3, ↓↓COL5A1, ↓↓CTSV, ↑↑DCN, ↓EGLN1, ↓ELK3, ↑↑FOXO1, ↓GLCE, ↑↑GPR116, ↓↓GUCY1A3, ↓GUCY1B3, ↓H3F3A/H3F3B, ↓HMGB1, ↑↑HNRNPD, ↑↑HPGD, ↓INSIG2, ↑↑KAT6A, ↓↓KCNAB1, ↑↑KCNJ8, ↑↑NOV, ↓POSTN, ↑↑RGS4, ↓↓RIF1, ↓RIMS2, ↑↑RORA, ↓↓RYR2, ↓↓SHISA2, ↓SLC12A2, ↑↑SLC20A1, ↓↓SLC2A1, ↓SMAD7, ↑↑SYNE1, ↑↑TFPI, ↓VEGFC, ↑↑VWF, ↓ZEB1
Lipid Metabolism | Molecular Transport | Small Molecule Biochemistry	quantity	quantity of steroid	14	-0.860	1.75×10^{-3}	↓↓ANGPT2, ↓BHMT, ↓CAV1, ↓CES1, ↑↑COL4A3, ↓↓CYP19A1, ↑↑FOXO1, ↑↑GPR116, ↑↑HPGD, ↓↓LHCGR, ↑↑RORA, ↓SLC12A2, ↓↓ST3GAL5, ↑↑TFPI
Cellular Movement	cell movement	cell movement of tumor cell lines	18	-0.826	8.71×10^{-3}	↓↓ANGPT2, ↑↑ANKRD28, ↓CAV1, ↓CKLF, ↑↑COL4A3, ↑↑DCN, ↑↑HPGD, ↑↑MAP4K4, ↓mir-210, ↓↓MMP1, ↑↑NOV, ↓POSTN, ↓RNF144A, ↑SHC4, ↓SLC12A2, ↓↓SLC2A1, ↓↓ST3GAL5, ↓VEGFC
Cellular Movement	migration	migration of carcinoma cell lines	6	-0.816	5.87×10^{-4}	↓CAV1, ↓mir-210, ↓↓MMP1, ↑↑NOV, ↓POSTN, ↓VEGFC

Cellular Movement	migration	migration of tumor cells	8	-0.816	2.85×10^{-3}	↑↑ALCAM, ↓↓ANGPT2, ↓CAV1, ↓HMGB1, ↑↑NOV, ↓POSTN, ↑↑TFPI, ↓ZEB1
Cellular Movement	invasion	invasion of brain cancer cell lines	4	-0.775	6.72×10^{-3}	↓ASAP1, ↓HMGB1, ↓SLC12A2, ↓↓SLC2A1
Gastrointestinal Disease | Hepatic System Disease	hepatic steatosis	hepatic steatosis	8	0.775	8.05×10^{-3}	↓BHMT, ↓CAV1, ↓↓CYP19A1, ↓EGLN1, ↑↑FOXO1, ↓INSIG2, ↓PDE7B, ↑↑RORA
Cardiovascular System Development and Function	heart rate	heart rate	11	0.747	3.32×10^{-4}	↓↓ANGPT2, ↑↑ANK3, ↓↓CTSV, ↓↓CYP19A1, ↑↑KCNJ8, ↓MAP2K6, ↓↓MMP1, ↑↑RGS4, ↓↓RYR2, ↓SMAD7, ↑↑SYNE1
DNA Replication, Recombination, and Repair	synthesis	synthesis of DNA	13	-0.747	1.55×10^{-3}	↓↓ANGPT2, ↑↑BMPR1B, ↑↑BTC, ↓CAV1, ↑↑COL14A1, ↑↑FOXO1, ↓↓GUCY1A3, ↓GUCY1B3, ↑↑NOV, ↑↑RGS4, ↓SKP2, ↓SMAD7, ↓TYMS

Cancer	cancer	Cancer	128	-0.740	4.48×10^{-6}	↓↓ABCA8, ↑ACPP, ↓↓ACTN2, ↑↑ADAMTS1, ↓AJUBA, ↑↑AKR1C1/AKR1C2, ↑↑ALCAM, ↑↑ALG6, ↓ALG9, ↓↓ANGPT2, ↑↑ANGPTL1, ↑↑ANK3, ↑↑ANKRD28, ↑↑ANXA4, ↓ARV1, ↓ASAP1, ↓↓ATP2B1, ↓BCAT1, ↓BHMT, ↑↑BMPR1B, ↓↓BNIP3, ↓C9orf91, ↓CANX, ↓CAV1, ↓↓CBWD3/CBWD6, ↓CDCA7L, ↓CES1, ↓CHST7, ↓CKLF, ↓↓COL12A1, ↑↑COL14A1, ↑COL4A2, ↓↓COX4I1, ↑↑CPEB4, ↓↓CRIP1, ↓↓CTSV, ↓↓CYP19A1, ↑CYP2B6, ↓↓DAPK1, ↓DCAF13, ↓↓DCLK1, ↑↑DCN, ↓↓DDIT4, ↑↑DST, ↓↓DYNC1I1, ↓EGLN1, ↓↓ELAVL2, ↓↓ENO2, ↓ETAA1, ↑↑FAM13A, ↓FANK1, ↑↑FOXO1, ↓GGPS1, ↑↑GPR116, ↓↓GUCY1A3, ↓H3F3A/H3F3B, ↓HMCN1, ↓HMGB1, ↑↑HPGD, ↓IFT81, ↓↓JAKMIP2, ↑↑KAT6A, ↓↓KCNAB1, ↑↑KCNJ8, ↓KCTD1, ↓↓LHCGR, ↓↓LRRC49, ↑↑MAML2, ↓MAP2K6, ↑↑MAP4K4, ↓↓MCC, ↓mir-210, ↓↓MMP1, ↓↓MT-ND2, ↓↓MT-ND4L, ↑MT1X, ↓NIN, ↑↑NOV, ↓↓OLFM4, ↑↑PABPC1, ↓PARP11, ↓PDE7B, ↓↓PDZRN3, ↓↓PELP1, ↓↓PID1, ↑↑PKN2, ↓PON2, ↓POSTN, ↑↑PRICKLE1, ↓PROSC, ↓↓PTGIS, ↓RARS2, ↑RBFOX1, ↑↑RGS4, ↓↓RGS7, ↑↑RHOQ, ↓↓RHPN2, ↓↓RIF1, ↓RIMS2, ↓↓RIN2, ↓RNF144A, ↑↑RORA, ↓↓RYR2, ↑SEPT6, ↑SHC4, ↓↓SHISA2, ↓SKP2, ↓SLC12A2, ↓↓SLC26A2, ↓↓SLC2A1, ↓SMAD7, ↑↑SND1, ↓STON1, ↓STYXL1, ↑↑SYNE1,
Cell Death and Survival	apoptosis	apoptosis of kidney cell lines	8	-0.726	5.81×10^{-3}	↑↑FOXO1, ↓MAP2K6, ↑↑PKN2, ↓↓PTGIS, ↑↑RGS4, ↓SMAD7, ↓TMX1, ↓ZEB1
Tissue Development	tubulation	tubulation of epithelial tissue	6	-0.689	8.01×10^{-4}	↑↑BTC, ↓CAV1, ↑↑COL4A3, ↑↑FOXO1, ↓MAP2K6, ↑↑RGS4
Cardiovascular System Development and Function | Cellular Movement	cell movement	cell movement of endothelial cell lines	5	-0.687	3.14×10^{-3}	↑↑ALCAM, ↓↓ANGPT2, ↓HMGB1, ↑↑RGS4, ↓VEGFC

Neurological Disease	movement disorder	Movement Disorders	25	0.685	4.33×10^{-3}	↓↓ACTN2, ↑↑ANK3, ↓↓ATP2B1, ↓CANX, ↓CAV1, ↑↑COL4A3, ↓↓CTSV, ↓↓CYP19A1, ↑↑DNAJC1, ↓↓DYNC1I1, ↓EGLN1, ↓↓ELAVL2, ↓↓ENO2, ↓GUCY1B3, ↓H3F3A/H3F3B, ↓↓KCNAB1, ↑MT1X, ↑RBFOX1, ↑↑RGS4, ↑↑RORA, ↑SEPT6, ↓SLC12A2, ↓↓SLC2A1, ↓↓ST3GAL5, ↑↑SYNE1
Cancer | Cellular Development | Cellular Growth and Proliferation	metastasis	metastasis of tumor cell lines	8	0.684	3.05×10^{-5}	↑↑ADAMTS1, ↓↓ANGPT2, ↑↑ANGPTL1, ↓CAV1, ↑COL4A2, ↓↓DAPK1, ↑↑SND1, ↓ZNF350
Cellular Movement	invasion	invasion of tumor cell lines	20	-0.677	2.52×10^{-5}	↑↑ADAMTS1, ↓ASAP1, ↑↑BTC, ↓CAV1, ↑↑DCN, ↓HMGB1, ↓MAP2K6, ↑↑MAP4K4, ↓mir-210, ↓↓MMP1, ↑↑NOV, ↓POSTN, ↓RNF144A, ↑↑RORA, ↓SKP2, ↓SLC12A2, ↓↓SLC2A1, ↓SMAD7, ↓ZEB1, ↓ZNF350
Organismal Development	size	size of body	21	-0.660	4.26×10^{-3}	↑↑ADAMTS1, ↑↑BTC, ↓CANX, ↓CAV1, ↓↓COL12A1, ↑↑COL4A3, ↑↑DCN, ↓GLCE, ↑↑GPR116, ↓GUCY1B3, ↑↑HNRNPD, ↓↓LHCGR, ↓POSTN, ↓↓RGS7, ↓RIMS2, ↓SKP2, ↓SLC12A2, ↓SMAD7, ↓↓STC2, ↑↑SYNE1, ↑↑TNFRSF11A
Cellular Movement	migration	migration of cells	47	-0.655	2.65×10^{-6}	↑↑ADAMTS1, ↓AJUBA, ↑↑ALCAM, ↓↓ANGPT2, ↑↑ANGPTL1, ↑↑ANKRD28, ↓ASAP1, ↓ASAP2, ↓BCAT1, ↑↑BTC, ↓CAV1, ↓CES1, ↓CKLF, ↑COL4A2, ↑↑COL4A3, ↓↓CTSV, ↓↓CYP19A1, ↓↓DCLK1, ↑↑DCN, ↓EGLN1, ↓ELK3, ↑↑FOXO1, ↓↓GUCY1A3, ↓GUCY1B3, ↓HMGB1, ↑↑HPGD, ↓MAP2K6, ↑↑MAP4K4, ↓mir-210, ↓↓MMP1, ↑↑NOV, ↓↓OLFM4, ↓PON2, ↓POSTN, ↓RABEP1, ↑↑RGS4, ↓RNF144A, ↑SHC4, ↓SKP2, ↓SLC12A2, ↓↓SLC2A1, ↓SMAD7, ↑↑TFPI, ↑↑TNFRSF11A, ↓VEGFC, ↑↑VWF, ↓ZEB1

Cell Death and Survival	apoptosis	apoptosis of epithelial cell lines	8	-0.647	3.60×10^{-3}	↓↓BNIP3, ↑↑FOXO1, ↓MAP2K6, ↑↑PKN2, ↓↓PTGIS, ↑↑RGS4, ↓TMX1, ↓ZEB1
Cancer | Cellular Movement | Tumor Morphology	invasion	invasion of tumor cells	7	-0.640	3.17×10^{-3}	↑↑ALCAM, ↓ASAP1, ↑↑BTC, ↓↓MMP1, ↑↑NOV, ↓POSTN, ↓VEGFC
Cancer	metastasis	metastasis of cells	9	0.602	1.04×10^{-4}	↑↑ADAMTS1, ↓↓ANGPT2, ↑↑ANGPTL1, ↓CAV1, ↑COL4A2, ↓↓DAPK1, ↑↑SND1, ↓ZEB1, ↓ZNF350
Cardiovascular System Development and Function | Hematological System Development and Function	blood pressure	blood pressure	10	0.593	3.09×10^{-3}	↓↓ANGPT2, ↓CAV1, ↑↑COL4A3, ↓↓CYP19A1, ↓↓GUCY1A3, ↓GUCY1B3, ↓↓PTGIS, ↑↑RORA, ↓SLC12A2, ↓VEGFC
Cell Morphology	tubulation	tubulation of cells	7	-0.481	3.50×10^{-4}	↑↑ALCAM, ↑↑BTC, ↓CAV1, ↑↑COL4A3, ↑↑FOXO1, ↓MAP2K6, ↑↑RGS4
Cardiovascular Disease | Developmental Disorder	hypertrophy	hypertrophy of heart	8	0.417	7.56×10^{-3}	↓↓ANGPT2, ↓CAV1, ↓↓CYP19A1, ↓↓GUCY1A3, ↓MAP2K6, ↓mir-210, ↓↓MMP1, ↓POSTN
Developmental Disorder	hypertrophy	Hypertrophy	15	-0.397	6.62×10^{-4}	↓↓ANGPT2, ↓CAV1, ↓↓CYP19A1, ↓↓GUCY1A3, ↓HMGB1, ↓↓LHCGR, ↓MAP2K6, ↓mir-210, ↓↓MMP1, ↓POSTN, ↓↓PTGIS, ↑↑RGS4, ↓↓RYR2, ↓SKP2, ↓SMAD7
Cell Death and Survival	necrosis	necrosis	52	0.376	9.35×10^{-4}	↑↑ADAMTS1, ↓↓ANGPT2, ↑↑ANGPTL1, ↓↓ATP2B1, ↑↑BMPR1B, ↓↓BNIP3, ↑↑BTC, ↓CAV1, ↓CCBL1, ↓CDK8, ↓CES1, ↑COL4A2, ↑↑COL4A3, ↓↓CTSV, ↓↓CYP19A1, ↓↓DAPK1, ↑↑DCN, ↓↓DDIT4, ↑↑DPP8, ↑↑DST, ↓↓DYNC1I1, ↓EGLN1, ↑↑FOXO1, ↓GGPS1, ↓GUCY1B3, ↓HMGB1, ↑↑MAML2, ↓MAP2K6, ↓mir-210, ↓↓MMP1, ↑MT1X, ↓↓PELP1, ↑↑PKN2, ↓PON2, ↓POSTN, ↓↓PTGIS, ↓RASD1, ↑↑RGS4, ↓↓RYR2, ↓↓SGMS2, ↓SKP2, ↑↑SLC20A1, ↓↓SLC2A1, ↓SMAD7, ↑↑SND1, ↓STYXL1, ↑↑SYNE1, ↓TMX1, ↑↑TNFRSF11A, ↓TYMS, ↓VEGFC, ↓ZEB1

Organismal Injury and Abnormalities | Tissue Morphology	size	size of lesion	9	0.373	2.11×10^{-3}	↑↑BMPR1B, ↓↓BNIP3, ↓CAV1, ↓CES1, ↓↓CTSV, ↓EGLN1, ↑↑FOXO1, ↓HMGB1, ↑↑VWF
Cancer	hyperplasia	hyperplasia	14	0.365	8.23×10^{-3}	↑↑BTC, ↓CAV1, ↑↑COL4A3, ↓↓CTSV, ↓↓CYP19A1, ↑↑DCN, ↓↓MMP1, ↓POSTN, ↓RIMS2, ↑↑RORA, ↓SKP2, ↓SMAD7, ↑↑TNFRSF11A, ↓VEGFC
Organismal Development	morphology	morphology of body cavity	28	0.341	4.88×10^{-4}	↑↑ADAMTS1, ↓BHMT, ↑↑BMPR1B, ↑↑BTC, ↓CAV1, ↓CAV2, ↓↓CYP19A1, ↑↑DCN, ↓EGLN1, ↓ELK3, ↓GLCE, ↑↑GPR116, ↓GUCY1B3, ↑↑HPGD, ↑↑KAT6A, ↓↓LHCGR, ↓MAP2K6, ↑↑NOV, ↓POSTN, ↓↓RYR2, ↓SKP2, ↑↑SLC20A1, ↓SMAD7, ↑↑SYNE1, ↓TES, ↑↑TNFRSF11A, ↑TOX, ↓ZEB1
Cancer	hyperplasia	hyperplasia of tissue	5	0.339	1.04×10^{-3}	↑↑BTC, ↓CAV1, ↓↓CYP19A1, ↑↑DCN, ↓↓MMP1
Cellular Development | Cellular Growth and Proliferation	proliferation	proliferation of breast cancer cell lines	15	-0.313	9.44×10^{-5}	↑↑ADAMTS1, ↑↑BTC, ↓CAV1, ↓↓CYP19A1, ↑↑DCN, ↑↑FOXO1, ↑↑HPGD, ↓MAP2K6, ↓↓PELP1, ↑↑RORA, ↓SKP2, ↑↑SND1, ↓TES, ↓TYMS, ↓ZEB1
Lipid Metabolism | Molecular Transport | Small Molecule Biochemistry	accumulation	accumulation of lipid	9	-0.311	6.94×10^{-3}	↓BHMT, ↓CAV1, ↑↑COL14A1, ↑↑FOXO1, ↓HMGB1, ↓INSIG2, ↓PON2, ↑↑RGS4, ↓↓SGMS2
Cellular Growth and Proliferation	proliferation	proliferation of gonadal cells	4	-0.308	1.01×10^{-2}	↑↑BTC, ↑↑FOXO1, ↓↓LHCGR, ↓↓TNFAIP6
Organismal Injury and Abnormalities | Renal and Urological Disease	fibrosis	fibrosis of kidney	5	-0.283	1.24×10^{-3}	↑↑COL4A3, ↑↑DCN, ↓↓PTGIS, ↓SKP2, ↓SMAD7
Cardiovascular System Development and Function | Cellular Movement	migration	migration of endothelial cell lines	4	0.254	8.11×10^{-3}	↑↑ALCAM, ↓HMGB1, ↑↑RGS4, ↓VEGFC
Cancer | Cellular Development | Cellular Growth and Proliferation | Tumor Morphology	proliferation	proliferation of malignant tumor	11	-0.243	3.37×10^{-3}	↑↑ANGPTL1, ↑↑ANK3, ↓BHMT, ↓CDCA7L, ↑↑DCN, ↓HMGB1, ↓↓MMP1, ↓↓RYR2, ↓TES, ↓VEGFC, ↓ZEB1

Cell Death and Survival	survival	cell survival	30	-0.218	3.40×10^{-3}	↑↑ADAMTS1, ↑↑ALCAM, ↓↓ANGPT2, ↑↑ANGPTL1, ↓↓BNIP3, ↑↑BTC, ↓CAV1, ↓CDCA7L, ↓CDK8, ↑↑COL4A3, ↑↑DPP8, ↑↑DST, ↓↓DYNC1I1, ↑↑FOXO1, ↓↓GUCY1A3, ↓HMGB1, ↑↑INPP4A, ↓MAP2K6, ↓mir-210, ↓↓MMP1, ↑↑NOV, ↓↓OPN3, ↓POSTN, ↓↓RYR2, ↓↓SLC2A1, ↓SMAD7, ↑↑SND1, ↑↑TFPI, ↓TYMS, ↓VEGFC
Lipid Metabolism | Molecular Transport | Small Molecule Biochemistry	concentration	concentration of cholesterol	10	-0.185	1.82×10^{-3}	↓BHMT, ↓CAV1, ↓CES1, ↑↑COL4A3, ↓↓CYP19A1, ↑↑FOXO1, ↑↑GPR116, ↑↑RORA, ↓↓ST3GAL5, ↑↑TFPI
Cellular Growth and Proliferation	colony formation	colony formation of tumor cell lines	8	0.173	9.11×10^{-3}	↓CAV1, ↓CDCA7L, ↑↑HPGD, ↑MT1X, ↓RASD1, ↓SMAD7, ↓TES, ↓ZEB1
Cellular Development	epithelial-mesenchymal transition	epithelial-mesenchymal transition	6	-0.172	8.78×10^{-3}	↓CAV1, ↑↑FOXO1, ↓POSTN, ↓SMAD7, ↑↑TNFRSF11A, ↓ZEB1
Cardiovascular System Development and Function | Organ Morphology	contraction	contraction of heart	7	0.152	2.32×10^{-3}	↓↓ANGPT2, ↑↑ANK3, ↓↓CTSV, ↓MAP2K6, ↓↓MMP1, ↓↓RYR2, ↓SMAD7
Cell-To-Cell Signaling and Interaction | Renal and Urological System Development and Function	binding	binding of kidney cell lines	4	0.147	2.39×10^{-3}	↑↑ALCAM, ↓CAV1, ↓↓DAPK1, ↓↓LHCGR
Cardiovascular System Development and Function | Tissue Morphology	permeability	permeability of blood vessel	4	-0.132	6.39×10^{-3}	↓↓ANGPT2, ↓CAV1, ↓VEGFC, ↑↑VWF
Cellular Development | Cellular Growth and Proliferation	proliferation	proliferation of carcinoma cell lines	9	-0.113	9.53×10^{-3}	↓CAV1, ↑↑FOXO1, ↓HMGB1, ↓↓MMP1, ↑↑NOV, ↓RASD1, ↓SKP2, ↓SMAD7, ↓ZEB1
Cancer | Respiratory Disease	lung cancer	lung cancer	19	0.109	8.37×10^{-3}	↓↓ACTN2, ↑↑ADAMTS1, ↑↑ANGPTL1, ↓CAV1, ↓↓CYP19A1, ↓↓ENO2, ↓GGPS1, ↑↑HPGD, ↑↑MAP4K4, ↓↓MMP1, ↓↓OLFM4, ↓↓PTGIS, ↓↓RGS7, ↑↑SND1, ↑↑TNFRSF11A, ↓TYMS, ↓↓UGT1A9 (includes others), ↓VEGFC, ↑↑VWF

Cellular Development	differentiation	differentiation of tumor cell lines	13	0.101	7.34×10^{-4}	↓AJUBA, ↓BDH2, ↑↑BTC, ↓↓ELAVL2, ↓HMGB1, ↑↑KAT6A, ↓MAP2K6, ↓↓MCC, ↑↑NOV, ↓↓PELP1, ↑↑RHOQ, ↓SMAD7, ↑↑TNFRSF11A
Cellular Movement	cell movement	cell movement	50	-0.095	4.66×10^{-6}	↑↑ADAMTS1, ↓AJUBA, ↑↑AKAP4, ↑↑ALCAM, ↓↓ANGPT2, ↑↑ANGPTL1, ↑↑ANKRD28, ↓ASAP1, ↓ASAP2, ↓BCAT1, ↑↑BTC, ↓CAV1, ↓CES1, ↓CKLF, ↑COL4A2, ↑↑COL4A3, ↓↓CTSV, ↓↓CYP19A1, ↓↓DCLK1, ↑↑DCN, ↑↑DST, ↓EGLN1, ↓ELK3, ↑↑FOXO1, ↓↓GUCY1A3, ↓GUCY1B3, ↓HMGB1, ↑↑HPGD, ↓MAP2K6, ↑↑MAP4K4, ↓mir-210, ↓↓MMP1, ↑↑NOV, ↓↓OLFM4, ↓PON2, ↓POSTN, ↓RABEP1, ↑↑RGS4, ↓RNF144A, ↑SHC4, ↓SKP2, ↓SLC12A2, ↓↓SLC2A1, ↓SMAD7, ↓↓ST3GAL5, ↑↑TFPI, ↑↑TNFRSF11A, ↓VEGFC, ↑↑VWF, ↓ZEB1
Cancer	metastasis	metastasis	25	-0.073	4.64×10^{-7}	↑↑ADAMTS1, ↑↑AKR1C1/AKR1C2, ↓↓ANGPT2, ↑↑ANGPTL1, ↑↑ANK3, ↓CAV1, ↓CDCA7L, ↑COL4A2, ↓↓CYP19A1, ↓↓DAPK1, ↓GGPS1, ↓HMGB1, ↓↓LHCGR, ↓↓MMP1, ↓↓PDZRN3, ↑↑RGS4, ↑↑SND1, ↓TES, ↑↑TFPI, ↑↑TNFRSF11A, ↓↓TRIM9, ↓TYMS, ↓VEGFC, ↓ZEB1, ↓ZNF350

Cancer | Gastrointestinal Disease	digestive organ tumor	digestive organ tumor	79	-0.068	1.64×10^{-5}	↑ACPP, ↑↑ADAMTS1, ↑↑AKR1C1/AKR1C2, ↑↑ALCAM, ↓ALG9, ↓↓ANGPT2, ↑↑ANK3, ↑↑ANKRD28, ↑↑ANXA4, ↓ARV1, ↓ASAP1, ↓BHMT, ↑↑BMPR1B, ↓↓BNIP3, ↓CANX, ↓CAV1, ↓↓CBWD3/CBWD6, ↓CES1, ↓CKLF, ↓↓COL12A1, ↑↑COL14A1, ↑COL4A2, ↑↑CPEB4, ↓↓CRIP1, ↓↓CTSV, ↓↓DAPK1, ↓DCAF13, ↓↓DCLK1, ↑↑DCN, ↑↑DST, ↓↓ELAVL2, ↓ETAA1, ↓FANK1, ↑↑GPR116, ↓↓GUCY1A3, ↓HMCN1, ↓HMGB1, ↓IFT81, ↑↑KAT6A, ↑↑KCNJ8, ↓↓LHCGR, ↑↑MAP4K4, ↓↓MCC, ↓mir-210, ↓↓MT-ND4L, ↑MT1X, ↓NIN, ↑↑NOV, ↓↓OLFM4, ↓PARP11, ↓↓PDZRN3, ↓↓PELP1, ↓POSTN, ↓↓PTGIS, ↑↑RGS4, ↑↑RHOQ, ↓↓RHPN2, ↓↓RIF1, ↓RIMS2, ↓↓RIN2, ↑↑RORA, ↓↓RYR2, ↑SHC4, ↓SKP2, ↓SLC12A2, ↓↓SLC26A2, ↓↓SLC2A1, ↓SMAD7, ↑↑SYNE1, ↓TES, ↑↑TFPI, ↓↓TNFAIP6, ↑TOX, ↓↓TRIM9, ↓TYMS, ↓↓UGT1A9 (includes others), ↓↓UST, ↓VEGFC, ↑↑VWF
Lipid Metabolism | Small Molecule Biochemistry	conversion	conversion of lipid	6	-0.059	6.80×10^{-3}	↑↑AKR1C1/AKR1C2, ↓↓CYP19A1, ↑CYP2B6, ↑↑HPGD, ↓↓PTGIS, ↓↓SGMS2
Cardiovascular Disease	heart disease	Heart Disease	29	-0.055	2.53×10^{-5}	↓↓ACTN2, ↓↓ANGPT2, ↑↑BMPR1B, ↑↑BTC, ↓CAV1, ↓↓CYP19A1, ↓EGLN1, ↓↓ENO2, ↑↑FOXO1, ↓↓GUCY1A3, ↓GUCY1B3, ↓HMGB1, ↑↑HPGD, ↑↑KAT6A, ↑↑KCNJ8, ↓MAP2K6, ↓mir-210, ↓↓MMP1, ↑↑NOV, ↓PDE7B, ↓↓PELP1, ↓POSTN, ↑RBFOX1, ↑↑RGS4, ↓↓RYR2, ↑↑SLC20A1, ↓SMAD7, ↑↑TFPI, ↑↑VWF

Cellular Development | Cellular Growth and Proliferation | Nervous System Development and Function	proliferation	proliferation of neuronal cells	7	0.000	4.73×10^{-3}	↑↑ANK3, ↑↑BTC, ↑↑FOXO1, ↓HMGB1, ↓IRX3, ↓SLC12A2, ↓VEGFC
Cardiovascular Disease	infarction	Infarction	9	0	8.70×10^{-3}	↓↓BNIP3, ↓CAV1, ↓EGLN1, ↓↓GUCY1A3, ↓GUCY1B3, ↓HMGB1, ↓POSTN, ↑↑TFPI, ↑↑VWF
Cancer	malignant neoplasm of abdomen	malignant neoplasm of abdomen	94		9.66×10^{-8}	↓↓ABCA8, ↑ACPP, ↑↑ADAMTS1, ↑↑AKR1C1/AKR1C2, ↑↑ALCAM, ↓ALG9, ↓↓ANGPT2, ↑↑ANK3, ↑↑ANKRD28, ↑↑ANXA4, ↓ARV1, ↓ASAP1, ↓↓ATP2B1, ↓BHMT, ↑↑BMPR1B, ↓↓BNIP3, ↓CANX, ↓CAV1, ↓↓CBWD3/CBWD6, ↓CES1, ↓CKLF, ↓↓COL12A1, ↑↑COL14A1, ↑COL4A2, ↑↑CPEB4, ↓↓CRIP1, ↓↓CTSV, ↓↓CYP19A1, ↓↓DAPK1, ↓DCAF13, ↓↓DCLK1, ↑↑DCN, ↑↑DST, ↓↓DYNC1I1, ↓↓ELAVL2, ↓ETAA1, ↑↑FAM13A, ↓FANK1, ↑↑FOXO1, ↓GGPS1, ↑↑GPR116, ↓↓GUCY1A3, ↓HMCN1, ↓HMGB1, ↓IFT81, ↓↓JAKMIP2, ↑↑KAT6A, ↑↑KCNJ8, ↓KCTD1, ↓↓LHCGR, ↓MAP2K6, ↑↑MAP4K4, ↓↓MCC, ↓mir-210, ↓↓MMP1, ↓↓MT-ND4L, ↑MT1X, ↓NIN, ↑↑NOV, ↓↓OLFM4, ↓PARP11, ↓↓PDZRN3, ↓↓PELP1, ↓POSTN, ↓↓PTGIS, ↑↑RGS4, ↑↑RHOQ, ↓↓RHPN2, ↓↓RIF1, ↓RIMS2, ↓↓RIN2, ↓RNF144A, ↑↑RORA, ↓↓RYR2, ↑SHC4, ↓SKP2, ↓SLC12A2, ↓↓SLC26A2, ↓↓SLC2A1, ↓SMAD7, ↑↑SND1, ↓STON1, ↑↑SYNE1, ↑↑TFPI, ↓↓TNFAIP6, ↑TOX, ↓↓TRIM9, ↓TYMS, ↓↓UGT1A9 (includes others), ↓↓UST, ↓VEGFC, ↑↑VWF, ↓ZEB1, ↓ZNF350

Cancer	endometrioid carcinoma	endometrioid carcinoma	60	2.61×10^{-6}	↓↓ABCA8, ↑↑ADAMTS1, ↑↑AKR1C1/AKR1C2, ↓↓ANGPT2, ↑↑ANK3, ↑↑ANKRD28, ↓↓ATP2B1, ↓BCAT1, ↓↓C8orf47, ↓CES1, ↓↓COL12A1, ↑↑COL14A1, ↓↓COL5A1, ↓↓DAPK1, ↓DCAF13, ↓↓DCLK1, ↑↑DCN, ↑↑DST, ↓↓DYNC1I1, ↑↑FOXO1, ↓HMCN1, ↓IKBIP, ↑↑INPP4A, ↓IRX3, ↓↓JAKMIP2, ↑↑KAT6A, ↓↓KCNAB1, ↓LRRC27, ↑↑MAML2, ↓MAP2K6, ↓↓MCC, ↓↓MMP1, ↓MRPL44, ↑↑PABPC1, ↓↓PABPC4L, ↓PARP11, ↓PDE7B, ↓RABEP1, ↓↓RFTN2, ↓↓RIF1, ↓RIMS2, ↓↓RYR2, ↓↓SAP30, ↑SEPT6, ↓SLC12A2, ↑↑SLC20A1, ↑↑SLC7A2, ↓↓SORBS2, ↓SPATA7, ↓↓ST3GAL5, ↑↑SYNE1, ↓↓TNFAIP6, ↑↑TNFRSF11A, ↑TOX, ↓↓TRIM9, ↓↓VAT1L, ↑↑VWF, ↓ZNF12, ↓↓ZNF879, ↓ZSCAN29

Cancer	breast or colorectal cancer	breast or colorectal cancer	85	2.96×10^{-6}	↓↓ABCA8, ↑ACPP, ↓↓ACTN2, ↑↑ADAMTS1, ↑↑AKR1C1/AKR1C2, ↑↑ALCAM, ↓ALG9, ↓↓ANGPT2, ↑↑ANK3, ↑↑ANKRD28, ↑↑ANXA4, ↓ARV1, ↓ASAP1, ↓BCAT1, ↑↑BMPR1B, ↓CAV1, ↓↓CBWD3/CBWD6, ↓CES1, ↓CHST7, ↓CKLF, ↓↓COL12A1, ↑↑COL14A1, ↑COL4A2, ↓↓COX4I1, ↑↑CPEB4, ↓↓CRIP1, ↓↓CYP19A1, ↑CYP2B6, ↓↓DAPK1, ↓↓DCLK1, ↑↑DCN, ↓↓DDIT4, ↑↑DST, ↓EGLN1, ↓↓ELAVL2, ↓ETAA1, ↓FANK1, ↓GGPS1, ↑↑GPR116, ↓↓GUCY1A3, ↓H3F3A/H3F3B, ↓HMCN1, ↑↑KAT6A, ↑↑KCNJ8, ↓↓LHCGR, ↑↑MAP4K4, ↓↓MCC, ↓mir-210, ↓↓MMP1, ↓↓MT-ND2, ↓↓MT-ND4L, ↑MT1X, ↓NIN, ↑↑NOV, ↓↓OLFM4, ↓PARP11, ↓↓PDZRN3, ↓↓PELP1, ↓↓PID1, ↓PROSC, ↑↑RGS4, ↑↑RHOQ, ↓↓RHPN2, ↓↓RIF1, ↓RIMS2, ↓↓RIN2, ↓↓RYR2, ↑SHC4, ↓SKP2, ↓SLC12A2, ↓↓SLC26A2, ↓↓SLC2A1, ↓SMAD7, ↓STYXL1, ↑↑SYNE1, ↓TES, ↑↑TFPI, ↓↓TNFAIP6, ↑TOX, ↓↓TRIM9, ↓TYMS, ↓↓UGT1A9 (includes others), ↓↓UST, ↓VEGFC, ↑↑VWF
Cancer	head and neck tumor	head and neck tumor	28	6.98×10^{-6}	↓↓ABCA8, ↑↑ADAMTS1, ↑↑ALCAM, ↓↓ANGPT2, ↓BHMT, ↑↑BMPR1B, ↓CAV1, ↓CDCA7L, ↑COL4A2, ↓↓DAPK1, ↑↑DCN, ↑↑FOXO1, ↓H3F3A/H3F3B, ↓HMCN1, ↑↑KAT6A, ↓↓KCNAB1, ↑↑MAP4K4, ↓↓MMP1, ↓↓MT-ND2, ↓POSTN, ↓↓RIN2, ↓SLC12A2, ↓↓SLC2A1, ↓SMAD7, ↑↑SYNE1, ↑↑TFPI, ↓TYMS, ↓VEGFC

Cancer	head and neck cancer	head and neck cancer	25	1.09×10^{-5}	↓↓ABCA8, ↑↑ADAMTS1, ↑↑ALCAM, ↓↓ANGPT2, ↓BHMT, ↑↑BMPR1B, ↓CAV1, ↓CDCA7L, ↑COL4A2, ↑↑DCN, ↓H3F3A/H3F3B, ↓HMCN1, ↑↑KAT6A, ↓↓KCNAB1, ↑↑MAP4K4, ↓↓MMP1, ↓↓MT-ND2, ↓POSTN, ↓↓RIN2, ↓SLC12A2, ↓↓SLC2A1, ↓SMAD7, ↑↑SYNE1, ↓TYMS, ↓VEGFC
Connective Tissue Disorders	Dupuytren contracture	Dupuytren contracture	7	1.28×10^{-5}	↑↑ADAMTS1, ↓↓COL12A1, ↑↑COL14A1, ↑COL4A2, ↑↑COL4A3, ↓↓COL5A1, ↓↓MMP1
Dermatological Diseases and Conditions	burn	burn	6	3.66×10^{-5}	↓↓COL12A1, ↑↑COL14A1, ↑COL4A2, ↑↑COL4A3, ↓↓COL5A1, ↓HMGB1
Cancer | Gastrointestinal Disease	metastatic colorectal cancer	metastatic colorectal cancer	10	4.17×10^{-5}	↑↑AKR1C1/AKR1C2, ↑↑ANK3, ↓CAV1, ↑COL4A2, ↓↓PDZRN3, ↑↑RGS4, ↑↑TFPI, ↓↓TRIM9, ↓TYMS, ↓VEGFC
Cancer | Gastrointestinal Disease	gastrointestinal tumor	gastrointestinal tumor	73	4.94×10^{-5}	↑ACPP, ↑↑ADAMTS1, ↑↑AKR1C1/AKR1C2, ↑↑ALCAM, ↓ALG9, ↓↓ANGPT2, ↑↑ANK3, ↑↑ANKRD28, ↑↑ANXA4, ↓ARV1, ↓ASAP1, ↓BHMT, ↑↑BMPR1B, ↓↓BNIP3, ↓CANX, ↓CAV1, ↓↓CBWD3/CBWD6, ↓CKLF, ↓↓COL12A1, ↑↑COL14A1, ↑COL4A2, ↑↑CPEB4, ↓↓CRIP1, ↓↓DAPK1, ↓DCAF13, ↓↓DCLK1, ↑↑DCN, ↑↑DST, ↓↓ELAVL2, ↓ETAA1, ↓FANK1, ↑↑GPR116, ↓↓GUCY1A3, ↓HMCN1, ↑↑KAT6A, ↑↑KCNJ8, ↓↓LHCGR, ↑↑MAP4K4, ↓↓MCC, ↓↓MT-ND4L, ↑MT1X, ↓NIN, ↑↑NOV, ↓↓OLFM4, ↓PARP11, ↓↓PDZRN3, ↓↓PELP1, ↓POSTN, ↓↓PTGIS, ↑↑RGS4, ↑↑RHOQ, ↓↓RHPN2, ↓↓RIF1, ↓RIMS2, ↓↓RIN2, ↓↓RYR2, ↑SHC4, ↓SKP2, ↓SLC12A2, ↓↓SLC26A2, ↓↓SLC2A1, ↓SMAD7, ↑↑SYNE1, ↓TES, ↑↑TFPI, ↓↓TNFAIP6, ↑TOX, ↓↓TRIM9, ↓TYMS, ↓↓UGT1A9 (includes others), ↓↓UST, ↓VEGFC, ↑↑VWF

Cancer | Gastrointestinal Disease	neoplasia	Gastrointestinal Tract Cancer and Tumors	72	7.88×10^{-5}	↑ACPP, ↑↑ADAMTS1, ↑↑AKR1C1/AKR1C2, ↑↑ALCAM, ↓ALG9, ↓↓ANGPT2, ↑↑ANK3, ↑↑ANKRD28, ↑↑ANXA4, ↓ARV1, ↓ASAP1, ↓BHMT, ↑↑BMPR1B, ↓↓BNIP3, ↓CANX, ↓CAV1, ↓↓CBWD3/CBWD6, ↓CKLF, ↓↓COL12A1, ↑↑COL14A1, ↑COL4A2, ↑↑CPEB4, ↓↓CRIP1, ↓↓DAPK1, ↓DCAF13, ↓↓DCLK1, ↑↑DCN, ↑↑DST, ↓↓ELAVL2, ↓ETAA1, ↓FANK1, ↑↑GPR116, ↓↓GUCY1A3, ↓HMCN1, ↑↑KAT6A, ↑↑KCNJ8, ↓↓LHCGR, ↑↑MAP4K4, ↓↓MCC, ↓↓MT-ND4L, ↑MT1X, ↓NIN, ↑↑NOV, ↓↓OLFM4, ↓PARP11, ↓↓PDZRN3, ↓↓PELP1, ↓POSTN, ↑↑RGS4, ↑↑RHOQ, ↓↓RHPN2, ↓↓RIF1, ↓RIMS2, ↓↓RIN2, ↓↓RYR2, ↑SHC4, ↓SKP2, ↓SLC12A2, ↓↓SLC26A2, ↓↓SLC2A1, ↓SMAD7, ↑↑SYNE1, ↓TES, ↑↑TFPI, ↓↓TNFAIP6, ↑TOX, ↓↓TRIM9, ↓TYMS, ↓↓UGT1A9 (includes others), ↓↓UST, ↓VEGFC, ↑↑VWF
Tissue Morphology	contraction	contraction of cardiovascular tissue	6	8.12×10^{-5}	↓↓ANGPT2, ↓↓CTSV, ↓MAP2K6, ↓↓MMP1, ↓↓RYR2, ↓SMAD7
Cancer	pelvic cancer	pelvic cancer	34	8.81×10^{-5}	↓↓ABCA8, ↑↑ALCAM, ↓↓ANGPT2, ↑↑BMPR1B, ↓CAV1, ↑↑COL14A1, ↓↓CTSV, ↓↓CYP19A1, ↑↑DST, ↓↓DYNC1I1, ↑↑FAM13A, ↑↑FOXO1, ↓GGPS1, ↓↓GUCY1A3, ↓↓JAKMIP2, ↓KCTD1, ↓↓LHCGR, ↓MAP2K6, ↓mir-210, ↓↓MMP1, ↓↓PDZRN3, ↓POSTN, ↓↓PTGIS, ↓RNF144A, ↓SKP2, ↓↓SLC2A1, ↑↑SND1, ↓STON1, ↓TES, ↑↑TFPI, ↓TYMS, ↓VEGFC, ↓ZEB1, ↓ZNF350

Cancer | Gastrointestinal Disease	gastrointestinal tract cancer	gastrointestinal tract cancer	71	1.36×10^{-4}	↑ACPP, ↑↑ADAMTS1, ↑↑AKR1C1/AKR1C2, ↑↑ALCAM, ↓ALG9, ↓↓ANGPT2, ↑↑ANK3, ↑↑ANKRD28, ↑↑ANXA4, ↓ARV1, ↓ASAP1, ↓BHMT, ↑↑BMPR1B, ↓↓BNIP3, ↓CANX, ↓CAV1, ↓↓CBWD3/CBWD6, ↓CKLF, ↓↓COL12A1, ↑↑COL14A1, ↑COL4A2, ↑↑CPEB4, ↓↓CRIP1, ↓↓DAPK1, ↓DCAF13, ↓↓DCLK1, ↑↑DCN, ↑↑DST, ↓↓ELAVL2, ↓ETAA1, ↓FANK1, ↑↑GPR116, ↓↓GUCY1A3, ↓HMCN1, ↑↑KAT6A, ↑↑KCNJ8, ↓↓LHCGR, ↑↑MAP4K4, ↓↓MCC, ↓↓MT-ND4L, ↑MT1X, ↓NIN, ↑↑NOV, ↓↓OLFM4, ↓PARP11, ↓↓PDZRN3, ↓↓PELP1, ↓POSTN, ↑↑RGS4, ↑↑RHOQ, ↓↓RHPN2, ↓↓RIF1, ↓RIMS2, ↓↓RIN2, ↓↓RYR2, ↑SHC4, ↓SKP2, ↓SLC12A2, ↓↓SLC26A2, ↓↓SLC2A1, ↓SMAD7, ↑↑SYNE1, ↑↑TFPI, ↓↓TNFAIP6, ↑TOX, ↓↓TRIM9, ↓TYMS, ↓↓UGT1A9 (includes others), ↓↓UST, ↓VEGFC, ↑↑VWF

Cancer | Gastrointestinal Disease	colorectal tumor	colorectal tumor	67	1.66×10^{-4}	↑ACPP, ↑↑ADAMTS1, ↑↑AKR1C1/AKR1C2, ↑↑ALCAM, ↓ALG9, ↓↓ANGPT2, ↑↑ANK3, ↑↑ANKRD28, ↑↑ANXA4, ↓ARV1, ↓ASAP1, ↑↑BMPR1B, ↓CAV1, ↓↓CBWD3/CBWD6, ↓CKLF, ↓↓COL12A1, ↑↑COL14A1, ↑COL4A2, ↑↑CPEB4, ↓↓CRIP1, ↓↓DAPK1, ↓↓DCLK1, ↑↑DCN, ↑↑DST, ↓↓ELAVL2, ↓ETAA1, ↓FANK1, ↑↑GPR116, ↓↓GUCY1A3, ↓HMCN1, ↑↑KAT6A, ↑↑KCNJ8, ↓↓LHCGR, ↑↑MAP4K4, ↓↓MCC, ↓↓MT-ND4L, ↑MT1X, ↓NIN, ↑↑NOV, ↓↓OLFM4, ↓PARP11, ↓↓PDZRN3, ↓↓PELP1, ↓↓PTGIS, ↑↑RGS4, ↑↑RHOQ, ↓↓RHPN2, ↓↓RIF1, ↓RIMS2, ↓↓RIN2, ↓↓RYR2, ↑SHC4, ↓SKP2, ↓SLC12A2, ↓↓SLC26A2, ↓↓SLC2A1, ↓SMAD7, ↑↑SYNE1, ↑↑TFPI, ↓↓TNFAIP6, ↑TOX, ↓↓TRIM9, ↓TYMS, ↓↓UGT1A9 (includes others), ↓↓UST, ↓VEGFC, ↑↑VWF
Cancer | Organismal Injury and Abnormalities | Reproductive System Disease	uterine cancer	uterine cancer	18	2.10×10^{-4}	↓↓ABCA8, ↓CAV1, ↑↑COL14A1, ↓↓CTSV, ↓↓CYP19A1, ↑↑DST, ↓↓DYNC1I1, ↓↓GUCY1A3, ↓↓LHCGR, ↓mir-210, ↓↓PDZRN3, ↓↓PTGIS, ↓STON1, ↑↑TFPI, ↓TYMS, ↓VEGFC, ↓ZEB1, ↓ZNF350
Connective Tissue Development and Function | Embryonic Development | Organ Development | Organ Morphology | Organismal Development | Skeletal and Muscular System Development and Function | Tissue Development | Tissue Morphology	morphology	morphology of trabecula	3	2.27×10^{-4}	↓CAV1, ↓↓CYP19A1, ↓↓RYR2

Dermatological Diseases and Conditions | Gastrointestinal Disease | Organismal Injury and Abnormalities	ulcer	ulcer	6	2.42×10^{-4}	↓↓COL12A1, ↑↑COL14A1, ↑COL4A2, ↑↑COL4A3, ↓↓COL5A1, ↑↑TFPI
Cancer | Gastrointestinal Disease	colorectal cancer	colorectal cancer	66	2.67×10^{-4}	↑ACPP, ↑↑ADAMTS1, ↑↑AKR1C1/AKR1C2, ↑↑ALCAM, ↓ALG9, ↓↓ANGPT2, ↑↑ANK3, ↑↑ANKRD28, ↑↑ANXA4, ↓ARV1, ↓ASAP1, ↑↑BMPR1B, ↓CAV1, ↓↓CBWD3/CBWD6, ↓CKLF, ↓↓COL12A1, ↑↑COL14A1, ↑COL4A2, ↑↑CPEB4, ↓↓CRIP1, ↓↓DAPK1, ↓↓DCLK1, ↑↑DCN, ↑↑DST, ↓↓ELAVL2, ↓ETAA1, ↓FANK1, ↑↑GPR116, ↓↓GUCY1A3, ↓HMCN1, ↑↑KAT6A, ↑↑KCNJ8, ↓↓LHCGR, ↑↑MAP4K4, ↓↓MCC, ↓↓MT-ND4L, ↑MT1X, ↓NIN, ↑↑NOV, ↓↓OLFM4, ↓PARP11, ↓↓PDZRN3, ↓↓PELP1, ↑↑RGS4, ↑↑RHOQ, ↓↓RHPN2, ↓↓RIF1, ↓RIMS2, ↓↓RIN2, ↓↓RYR2, ↑SHC4, ↓SKP2, ↓SLC12A2, ↓↓SLC26A2, ↓↓SLC2A1, ↓SMAD7, ↑↑SYNE1, ↑↑TFPI, ↓↓TNFAIP6, ↑TOX, ↓↓TRIM9, ↓TYMS, ↓↓UGT1A9 (includes others), ↓↓UST, ↓VEGFC, ↑↑VWF
Reproductive System Development and Function | Tissue Morphology	quantity	quantity of spermatids	3	2.93×10^{-4}	↓↓CYP19A1, ↓↓LHCGR, ↓SLC12A2
Cardiovascular System Development and Function | Organ Morphology | Skeletal and Muscular System Development and Function | Tissue Morphology	contraction	contraction of cardiac muscle	5	3.11×10^{-4}	↓↓CTSV, ↓MAP2K6, ↓↓MMP1, ↓↓RYR2, ↓SMAD7
Cellular Assembly and Organization	alignment	alignment of filaments	2	3.20×10^{-4}	↓CAV1, ↑↑DST

Lymphoid Tissue Structure and Development	area	area of lymphatic system component	2	3.20×10^{-4} ↑↑TNFRSF11A, ↓VEGFC
Cardiovascular System Development and Function | Organ Morphology | Skeletal and Muscular System Development and Function | Tissue Morphology	contraction	contraction of myocardium	2	3.20×10^{-4} ↓↓CTSV, ↓↓MMP1
Respiratory System Development and Function	elastance	elastance of lung	2	3.20×10^{-4} ↓CAV1, ↓↓TNFAIP6
Cancer | Cellular Development | Cellular Growth and Proliferation | Organ Development | Reproductive System Disease | Respiratory Disease	lung metastasis	lung metastasis of breast cancer cell lines	2	3.20×10^{-4} ↑↑ADAMTS1, ↑↑SND1
Cell Morphology | Cellular Function and Maintenance	permeability	permeability of podocytes	2	3.20×10^{-4} ↓↓ANGPT2, ↓ZEB1
Cardiovascular System Development and Function | Cell-To-Cell Signaling and Interaction | Tissue Development	adhesion	adhesion of endothelial cell lines	4	3.24×10^{-4} ↓↓ANGPT2, ↓CAV1, ↑↑DCN, ↓VEGFC
Organ Morphology | Organismal Development | Reproductive System Development and Function	abnormal morphology	abnormal morphology of endometrium	3	3.70×10^{-4} ↑↑BMPR1B, ↓↓CYP19A1, ↓↓LHCGR
Carbohydrate Metabolism | Cellular Function and Maintenance	glycolysis	glycolysis of tumor cell lines	3	3.70×10^{-4} ↓CAV1, ↓mir-210, ↓SKP2
Cancer | Cellular Development | Cellular Growth and Proliferation | Respiratory Disease	metastasis	metastasis of lung cancer cell lines	3	3.70×10^{-4} ↓CAV1, ↑COL4A2, ↓↓DAPK1

Cancer | Organismal Injury and Abnormalities | Reproductive System Disease	breast cancer	breast cancer	33	4.31×10^{-4}	↓↓ABCA8, ↑ACPP, ↓↓ACTN2, ↑↑ADAMTS1, ↑↑AKR1C1/AKR1C2, ↓BCAT1, ↓CAV1, ↓CES1, ↓CHST7, ↓↓COL12A1, ↓↓COX4I1, ↓↓CYP19A1, ↑CYP2B6, ↑↑DCN, ↓↓DDIT4, ↓EGLN1, ↓GGPS1, ↓H3F3A/H3F3B, ↓↓LHCGR, ↓mir-210, ↓↓MMP1, ↓↓MT-ND2, ↑MT1X, ↓↓PELP1, ↓↓PID1, ↓PROSC, ↓↓RHPN2, ↓SKP2, ↓STYXL1, ↑↑SYNE1, ↓TES, ↓↓TRIM9, ↓TYMS
Cardiovascular Disease | Organismal Injury and Abnormalities	failure	failure of heart	10	4.42×10^{-4}	↓CAV1, ↑↑FOXO1, ↓↓GUCY1A3, ↓GUCY1B3, ↓HMGB1, ↑↑HPGD, ↓mir-210, ↓PDE7B, ↓↓RYR2, ↑↑VWF
Skeletal and Muscular System Development and Function | Tissue Development	development	cartilage development	7	4.85×10^{-4}	↑↑BMPR1B, ↑↑BTC, ↓CHST7, ↓↓COL12A1, ↓HMGB1, ↑↑NOV, ↓ZEB1
Organismal Development	abnormal morphology	abnormal morphology of body cavity	27	5.11×10^{-4}	↑↑ADAMTS1, ↓BHMT, ↑↑BMPR1B, ↑↑BTC, ↓CAV1, ↓CAV2, ↓↓CYP19A1, ↑↑DCN, ↓EGLN1, ↓ELK3, ↓GLCE, ↑↑GPR116, ↓GUCY1B3, ↑↑HPGD, ↑↑KAT6A, ↓↓LHCGR, ↑↑NOV, ↓POSTN, ↓↓RYR2, ↓SKP2, ↑↑SLC20A1, ↓SMAD7, ↑↑SYNE1, ↓TES, ↑↑TNFRSF11A, ↑TOX, ↓ZEB1
Cancer | Organismal Injury and Abnormalities | Reproductive System Disease	female genital tract cancer	female genital tract cancer	23	5.47×10^{-4}	↓↓ABCA8, ↑↑ALCAM, ↓↓ANGPT2, ↓CAV1, ↑↑COL14A1, ↓↓CTSV, ↓↓CYP19A1, ↑↑DST, ↓↓DYNC1I1, ↓↓GUCY1A3, ↓↓LHCGR, ↓mir-210, ↓↓MMP1, ↓↓PDZRN3, ↓POSTN, ↓↓PTGIS, ↓STON1, ↓TES, ↑↑TFPI, ↓TYMS, ↓VEGFC, ↓ZEB1, ↓ZNF350
Digestive System Development and Function | Organismal Development | Tissue Morphology	abnormal morphology	abnormal morphology of periodontal ligament	2	6.36×10^{-4}	↑↑DCN, ↓POSTN

Developmental Disorder | Organismal Injury and Abnormalities | Reproductive System Disease	hypertrophy	hypertrophy of Leydig cells	2	6.36×10^{-4}	↓↓CYP19A1, ↓↓LHCGR
Lipid Metabolism | Small Molecule Biochemistry	modification	modification of prostaglandin	3	6.75×10^{-4}	↑CYP2B6, ↑↑HPGD, ↓↓PTGIS
Cardiovascular Disease	hypertension	Hypertension	19	7.36×10^{-4}	↓↓ANGPT2, ↓BCAT1, ↑↑BMPR1B, ↓CAV1, ↓↓COL12A1, ↓↓CYP19A1, ↑↑GPR116, ↓↓GUCY1A3, ↓GUCY1B3, ↓↓LHCGR, ↓PDE7B, ↓↓PTGIS, ↑RBFOX1, ↓↓RFTN2, ↑↑RORA, ↓SLC12A2, ↓TMX1, ↓VEGFC, ↑↑VWF
Cancer	breast or ovarian cancer	breast or ovarian cancer	36	8.98×10^{-4}	↓↓ABCA8, ↑ACPP, ↓↓ACTN2, ↑↑ADAMTS1, ↑↑AKR1C1/AKR1C2, ↑↑ALCAM, ↓↓ANGPT2, ↓BCAT1, ↓CAV1, ↓CES1, ↓CHST7, ↓↓COL12A1, ↓↓COX4I1, ↓↓CYP19A1, ↑CYP2B6, ↑↑DCN, ↓↓DDIT4, ↓EGLN1, ↓GGPS1, ↓H3F3A/H3F3B, ↓↓LHCGR, ↓mir-210, ↓↓MMP1, ↓↓MT-ND2, ↑MT1X, ↓↓PELP1, ↓↓PID1, ↓POSTN, ↓PROSC, ↓↓RHPN2, ↓SKP2, ↓STYXL1, ↑↑SYNE1, ↓TES, ↓↓TRIM9, ↓TYMS
Connective Tissue Development and Function | Embryonic Development | Organ Development | Organ Morphology | Organismal Development | Skeletal and Muscular System Development and Function | Tissue Development	abnormal morphology	abnormal morphology of carpal bone	3	9.48×10^{-4}	↑↑BMPR1B, ↓LMBR1, ↑↑NOV
Hair and Skin Development and Function	tensile strength	tensile strength of skin	3	9.48×10^{-4}	↑↑COL14A1, ↓↓COL5A1, ↑↑DCN
Cell Death and Survival | Embryonic Development	apoptosis	apoptosis of neural tube cells	2	1.05×10^{-3}	↑↑BMPR1B, ↑↑FOXO1

Cell Morphology | Cellular Compromise	binucleation	binucleation of cervical cancer cell lines	2	1.05×10^{-3}	↓SEPT11, ↑SEPT6
Cellular Assembly and Organization | Tissue Development	formation	formation of collagen fibrils	2	1.05×10^{-3}	↓↓COL5A1, ↓POSTN
Lipid Metabolism | Small Molecule Biochemistry	synthesis	synthesis of oleic acid	2	1.05×10^{-3}	↓CAV1, ↓CAV2
Organ Morphology | Respiratory Disease | Respiratory System Development and Function	thickness	thickness of interalveolar septa	2	1.05×10^{-3}	↓CAV1, ↓CAV2
Cell Morphology | Tissue Development	tubulation	tubulation of epithelial cells	2	1.05×10^{-3}	↓MAP2K6, ↑↑RGS4
Developmental Disorder | Organismal Injury and Abnormalities | Reproductive System Disease	congenital anomaly of genital system	congenital anomaly of genital system	4	1.11×10^{-3}	↑↑AKR1C1/AKR1C2, ↑↑BMPR1B, ↓↓CYP19A1, ↓↓LHCGR
Cancer | Cellular Development | Cellular Growth and Proliferation	metastasis	metastasis of carcinoma cell lines	3	1.11×10^{-3}	↓CAV1, ↑COL4A2, ↓↓DAPK1
Cancer	uterine tumor	uterine tumor	20	1.38×10^{-3}	↓↓ABCA8, ↓CAV1, ↑↑COL14A1, ↓↓CTSV, ↓↓CYP19A1, ↑↑DST, ↓↓DYNC1I1, ↓↓GUCY1A3, ↓↓LHCGR, ↓mir-210, ↓↓PDZRN3, ↓↓PTGIS, ↑↑RORA, ↓↓SORBS2, ↓STON1, ↑↑TFPI, ↓TYMS, ↓VEGFC, ↓ZEB1, ↓ZNF350
Hematological System Development and Function	circulation	circulation of blood	5	1.39×10^{-3}	↑↑COL4A3, ↓↓GUCY1A3, ↓GUCY1B3, ↓SMAD7, ↑↑TFPI
Cancer | Neurological Disease	central nervous system tumor	central nervous system tumor	16	1.40×10^{-3}	↓↓ABCA8, ↑↑AKR1C1/AKR1C2, ↑↑ALCAM, ↓↓ANGPT2, ↓CAV1, ↓CDCA7L, ↓CDK8, ↑COL4A2, ↑↑FOXO1, ↓H3F3A/H3F3B, ↓↓KCNAB1, ↑↑MAP4K4, ↓↓RHPN2, ↓↓RYR2, ↓SLC12A2, ↑↑TFPI

Cancer | Organismal Injury and Abnormalities | Reproductive System Disease	endometrial cancer	endometrial cancer	13	1.41×10^{-3}	↓↓ABCA8, ↓CAV1, ↑↑COL14A1, ↓↓CYP19A1, ↑↑DST, ↓↓DYNC1I1, ↓↓GUCY1A3, ↓↓LHCGR, ↓mir-210, ↓↓PDZRN3, ↓↓PTGIS, ↓STON1, ↓ZEB1
Tissue Development	development	development of connective tissue	10	1.44×10^{-3}	↑↑ADAMTS1, ↑↑BMPR1B, ↑↑BTC, ↓CAV1, ↓CHST7, ↓↓COL12A1, ↓HMGB1, ↑↑NOV, ↑↑TNFRSF11A, ↓ZEB1
Lipid Metabolism | Molecular Transport | Small Molecule Biochemistry	accumulation	accumulation of triacylglycerol	5	1.47×10^{-3}	↑↑FOXO1, ↓INSIG2, ↓PON2, ↑↑RGS4, ↓↓SGMS2
Cancer | Neurological Disease	brain tumor	brain tumor	11	1.47×10^{-3}	↓↓ABCA8, ↑↑ALCAM, ↓↓ANGPT2, ↓CAV1, ↓CDCA7L, ↑COL4A2, ↓H3F3A/H3F3B, ↓↓KCNAB1, ↑↑MAP4K4, ↓SLC12A2, ↑↑TFPI
Cancer	hyperplasia	hyperplasia of epithelial tissue	4	1.54×10^{-3}	↑↑BTC, ↓CAV1, ↓↓CYP19A1, ↑↑DCN
Cancer | Neurological Disease	astrocytoma	astrocytoma	13	1.55×10^{-3}	↓↓ABCA8, ↑↑AKR1C1/AKR1C2, ↑↑ALCAM, ↓↓ANGPT2, ↓CAV1, ↓CDK8, ↑COL4A2, ↓H3F3A/H3F3B, ↓↓KCNAB1, ↑↑MAP4K4, ↓↓RHPN2, ↓↓RYR2, ↓SLC12A2
Organ Morphology | Organismal Development | Reproductive System Development and Function	abnormal morphology	abnormal morphology of thin myometrium	2	1.57×10^{-3}	↓↓CYP19A1, ↓↓LHCGR
Cardiovascular Disease	cardiomyopathy	cardiomyopathy of heart ventricle	2	1.57×10^{-3}	↓CAV1, ↑↑NOV
Cancer	entrance	entrance of brain cancer cell lines	2	1.57×10^{-3}	↓CAV1, ↓CAV2
Dermatological Diseases and Conditions | Inflammatory Disease | Inflammatory Response	folliculitis	folliculitis	2	1.57×10^{-3}	↓↓CTSV, ↓↓MMP1

Organ Morphology | Organismal Development | Reproductive System Development and Function	lack	lack of uterine gland	2	1.57×10^{-3}	↑↑BMPR1B, ↓↓LHCGR
Skeletal and Muscular System Development and Function	maintenance	maintenance of muscle	2	1.57×10^{-3}	↓↓BNIP3, ↓↓DDIT4
Inflammatory Disease | Inflammatory Response | Organismal Injury and Abnormalities | Renal and Urological Disease	tubular nephritis	tubular nephritis	2	1.57×10^{-3}	↑↑COL4A3, ↑↑DCN
Organismal Injury and Abnormalities | Reproductive System Disease	endometriosis	endometriosis	13	1.64×10^{-3}	↓↓ANGPT2, ↑↑ANK3, ↓BCAT1, ↓CAV2, ↓↓CYP19A1, ↑↑DCN, ↑↑FOXO1, ↓GUCY1B3, ↓↓LHCGR, ↓↓MMP1, ↑MT1X, ↓SMAD7, ↓VEGFC
Cell-To-Cell Signaling and Interaction | Hematological System Development and Function | Immune Cell Trafficking | Inflammatory Response | Tissue Development	adhesion	adhesion of monocytes	4	1.66×10^{-3}	↓↓ANGPT2, ↑↑FOXO1, ↓HMGB1, ↑↑VWF
Cancer | Neurological Disease	glioma	glioma	14	1.73×10^{-3}	↓↓ABCA8, ↑↑AKR1C1/AKR1C2, ↑↑ALCAM, ↓↓ANGPT2, ↓CAV1, ↓CDK8, ↑COL4A2, ↑↑FOXO1, ↓H3F3A/H3F3B, ↓↓KCNAB1, ↑↑MAP4K4, ↓↓RHPN2, ↓↓RYR2, ↓SLC12A2
Cancer | Organismal Injury and Abnormalities | Reproductive System Disease	uterine serous papillary cancer	uterine serous papillary cancer	9	2.01×10^{-3}	↓↓ABCA8, ↑↑COL14A1, ↑↑DST, ↓↓DYNC1I1, ↓↓GUCY1A3, ↓↓PDZRN3, ↓↓PTGIS, ↓STON1, ↓ZEB1

Connective Tissue Development and Function | Embryonic Development | Organ Development | Organ Morphology | Organismal Development | Skeletal and Muscular System Development and Function | Tissue Development	morphology	morphology of bone	14	2.04×10^{-3}	↑↑BMPR1B, ↓CAV1, ↓↓COL12A1, ↓↓CTSV, ↓↓CYP19A1, ↓GLCE, ↑↑KAT6A, ↓LMBR1, ↓NME5, ↑↑NOV, ↓RIMS2, ↓↓RYR2, ↑↑TFPI, ↑↑TNFRSF11A
Connective Tissue Development and Function | Embryonic Development | Organ Development | Organ Morphology | Organismal Development | Skeletal and Muscular System Development and Function | Tissue Development	abnormal morphology	abnormal morphology of compact bone	3	2.15×10^{-3}	↓CAV1, ↓↓COL12A1, ↓↓CYP19A1
Lipid Metabolism | Small Molecule Biochemistry	conversion	conversion of eicosanoid	3	2.15×10^{-3}	↑CYP2B6, ↑↑HPGD, ↓↓PTGIS
Organismal Functions	endurance	endurance	3	2.15×10^{-3}	↓CAV1, ↓CAV2, ↑↑SYNE1
Auditory and Vestibular System Development and Function | Cell Morphology | Organ Morphology	abnormal morphology	abnormal morphology of marginal stria vascularis cells	2	2.18×10^{-3}	↑↑COL4A3, ↓SLC12A2
Cancer | Organismal Injury and Abnormalities | Reproductive System Disease	hyperplasia	hyperplasia of lactiferous duct	2	2.18×10^{-3}	↓CAV1, ↓↓CYP19A1
Cellular Assembly and Organization | Cellular Function and Maintenance	organization	organization of membrane rafts	2	2.18×10^{-3}	↓CAV1, ↓CAV2
Connective Tissue Disorders | Gastrointestinal Disease | Inflammatory Disease | Skeletal and Muscular Disorders	periodontitis	periodontitis	2	2.18×10^{-3}	↓↓MMP1, ↓POSTN

Organ Morphology | Organismal Development | Reproductive System Development and Function	abnormal morphology	abnormal morphology of uterus	5	2.25×10^{-3}	↑↑ADAMTS1, ↑↑BMPR1B, ↓CAV1, ↓↓CYP19A1, ↓↓LHCGR
Endocrine System Disorders | Gastrointestinal Disease | Inflammatory Disease	pancreatitis	Pancreatitis	6	2.40×10^{-3}	↓↓ANGPT2, ↑↑ANXA4, ↓↓CTSV, ↓↓GUCY1A3, ↓GUCY1B3, ↓PDE7B
Lipid Metabolism | Molecular Transport | Small Molecule Biochemistry	abnormal quantity	abnormal quantity of fatty acid	3	2.41×10^{-3}	↓CAV1, ↑↑HPGD, ↓↓PTGIS
Embryonic Development | Organ Development | Organismal Development | Renal and Urological System Development and Function | Reproductive System Development and Function | Tissue Development	development	development of uterus	3	2.69×10^{-3}	↑↑ADAMTS1, ↓↓CYP19A1, ↓↓LHCGR
Cardiovascular System Development and Function | Cell Death and Survival	survival	survival of vascular endothelial cells	3	2.69×10^{-3}	↓↓ANGPT2, ↑↑BTC, ↑↑FOXO1
Cardiovascular Disease | Hematological Disease	thrombosis	thrombosis of vein	4	2.73×10^{-3}	↓↓ANGPT2, ↑↑TFPI, ↓VEGFC, ↑↑VWF
Lipid Metabolism | Small Molecule Biochemistry	metabolism	metabolism of triacylglycerol	5	2.86×10^{-3}	↓BHMT, ↓CAV1, ↑↑FOXO1, ↓INSIG2, ↓PON2
Skeletal and Muscular Disorders	myopathy	myopathy	14	2.86×10^{-3}	↓↓ACTN2, ↓CANX, ↑↑FOXO1, ↓HMGB1, ↑↑KCNJ8, ↓mir-210, ↓↓MMP1, ↓↓MT-ND2, ↓↓MT-ND4L, ↑↑NOV, ↓PDE7B, ↓↓RYR2, ↑↑SYNE1, ↑↑TFPI
Carbohydrate Metabolism | Drug Metabolism | Small Molecule Biochemistry	binding	binding of heparan sulfate	2	2.89×10^{-3}	↓GLCE, ↓↓TNFAIP6
Reproductive System Development and Function | Tissue Morphology	quantity	quantity of Leydig cells	2	2.89×10^{-3}	↓↓CYP19A1, ↓↓LHCGR

Lipid Metabolism | Molecular Transport | Small Molecule Biochemistry	release	release of oleic acid	2	2.89×10^{-3}	↓CAV1, ↓CAV2
Lipid Metabolism | Molecular Transport | Small Molecule Biochemistry	concentration	concentration of sphingomyelin	3	2.99×10^{-3}	↓BHMT, ↓CAV1, ↓↓SGMS2
Cell Morphology | Connective Tissue Development and Function | Skeletal and Muscular System Development and Function	mineralization	mineralization of osteoblasts	3	2.99×10^{-3}	↓POSTN, ↑↑SLC20A1, ↓SMAD7
Cancer	upper aerodigestive tract carcinoma	upper aerodigestive tract carcinoma	6	3.00×10^{-3}	↓BHMT, ↓CAV1, ↑↑KAT6A, ↓POSTN, ↑↑SYNE1, ↓TYMS
Cancer | Neurological Disease	brain cancer	brain cancer	10	3.09×10^{-3}	↓↓ABCA8, ↑↑ALCAM, ↓↓ANGPT2, ↓CAV1, ↓CDCA7L, ↑COL4A2, ↓H3F3A/H3F3B, ↓↓KCNAB1, ↑↑MAP4K4, ↓SLC12A2
Molecular Transport	transport	transport of metal ion	10	3.09×10^{-3}	↓↓ACTN2, ↑↑ANK3, ↓↓ATP2B1, ↓CAV1, ↓↓KCNAB1, ↑KCNG3, ↑↑KCNJ8, ↓↓RYR2, ↓SLC12A2, ↑↑SLC20A1
Cardiovascular System Development and Function | Cell Death and Survival	cell viability	cell viability of endothelial cells	4	3.51×10^{-3}	↓↓ANGPT2, ↑↑ANGPTL1, ↑↑BTC, ↑↑FOXO1
Cancer | Neurological Disease	glioblastoma cancer	glioblastoma cancer	8	3.60×10^{-3}	↓↓ABCA8, ↑↑ALCAM, ↓↓ANGPT2, ↓CAV1, ↑COL4A2, ↓↓KCNAB1, ↑↑MAP4K4, ↓SLC12A2
Cardiovascular System Development and Function | Organ Morphology | Organismal Development	abnormal morphology	abnormal morphology of trabeculae carne	3	3.65×10^{-3}	↓EGLN1, ↓↓RYR2, ↓SMAD7
Connective Tissue Development and Function | Skeletal and Muscular System Development and Function	strength	strength of bone	3	3.65×10^{-3}	↓CAV1, ↓↓COL12A1, ↓POSTN

Digestive System Development and Function | Organ Morphology	abnormal morphology	abnormal morphology of cecum	2	3.69×10^{-3}	↓GUCY1B3, ↓SLC12A2
Reproductive System Development and Function | Tissue Morphology	abnormal morphology	abnormal morphology of epigonadal fat pad	2	3.69×10^{-3}	↓CAV1, ↓↓CYP19A1
Organismal Injury and Abnormalities | Renal and Urological Disease	bleeding	bleeding of kidney	2	3.69×10^{-3}	↑↑COL4A3, ↑↑HNRNPD
Connective Tissue Disorders | Developmental Disorder | Hereditary Disorder | Skeletal and Muscular Disorders	brachyphalangia	brachyphalangia	2	3.69×10^{-3}	↑↑BMPR1B, ↓LMBR1
Lipid Metabolism | Small Molecule Biochemistry	conversion	conversion of prostaglandin h2	2	3.69×10^{-3}	↑CYP2B6, ↓↓PTGIS
Cellular Assembly and Organization | Cellular Function and Maintenance	formation	formation of caveolae	2	3.69×10^{-3}	↓CAV1, ↓CAV2
Cellular Assembly and Organization	induction	induction of actin stress fibers	2	3.69×10^{-3}	↑↑DCN, ↓SMAD7
Cellular Assembly and Organization	organization	organization of vesicles	2	3.69×10^{-3}	↓CAV1, ↓CAV2
Reproductive System Development and Function | Tissue Morphology	quantity	quantity of spermatocytes	2	3.69×10^{-3}	↓↓LHCGR, ↓SLC12A2
Cancer | Gastrointestinal Disease	esophageal adenocarcinoma	esophageal adenocarcinoma	4	3.95×10^{-3}	↓BHMT, ↓CAV1, ↑↑KAT6A, ↑↑SYNE1

Connective Tissue Development and Function | Embryonic Development | Organ Development | Organ Morphology | Organismal Development | Skeletal and Muscular System Development and Function | Tissue Development	abnormal morphology	abnormal morphology of bone	13	4.08×10^{-3}	↑↑BMPR1B, ↓CAV1, ↓↓COL12A1, ↓↓CTSV, ↓↓CYP19A1, ↓GLCE, ↑↑KAT6A, ↓LMBR1, ↓NME5, ↑↑NOV, ↓RIMS2, ↑↑TFPI, ↑↑TNFRSF11A
Cardiovascular System Development and Function | Lymphoid Tissue Structure and Development	formation	formation of neointima	4	4.18×10^{-3}	↓↓GUCY1A3, ↓GUCY1B3, ↓↓PTGIS, ↑↑TFPI
Cancer | Cell Cycle	G1 phase	arrest in G1 phase of tumor cells	2	4.58×10^{-3}	↑↑DCN, ↓SKP2
Developmental Disorder | Hereditary Disorder | Metabolic Disease | Neurological Disease | Ophthalmic Disease | Skeletal and Muscular Disorders	Leber's optic atrophy	Leber's optic atrophy	2	4.58×10^{-3}	↓↓MT-ND2, ↓↓MT-ND4L
Organ Morphology | Organismal Development | Reproductive System Development and Function	abnormal morphology	abnormal morphology of uterine gland	2	4.58×10^{-3}	↑↑BMPR1B, ↓CAV1
Cellular Movement	migration	migration of prostate cancer cells	2	4.58×10^{-3}	↓CAV1, ↑↑NOV
Carbohydrate Metabolism | Small Molecule Biochemistry	sulfation	sulfation of glycosaminoglycan	2	4.58×10^{-3}	↓CHST7, ↓GLCE

Connective Tissue Disorders | Immunological Disease | Inflammatory Disease | Skeletal and Muscular Disorders	rheumatoid arthritis	rheumatoid arthritis	18	4.59×10^{-3}	↓BHMT, ↑↑BTC, ↑COL4A2, ↓↓CYP19A1, ↑CYP2B6, ↑↑FOXO1, ↓H3F3A/H3F3B, ↓HMGB1, ↑↑MAP4K4, ↓↓MMP1, ↑NAA25, ↓↓PTGIS, ↑↑SLC7A2, ↑↑SND1, ↑↑SYNE1, ↓↓TNFAIP6, ↑↑TNFRSF11A, ↓TYMS
Molecular Transport	transport	transport of K+	5	4.81×10^{-3}	↓↓ACTN2, ↓↓KCNAB1, ↑KCNG3, ↑↑KCNJ8, ↓SLC12A2
Cancer | Gastrointestinal Disease	esophageal carcinoma	esophageal carcinoma	5	5.01×10^{-3}	↓BHMT, ↓CAV1, ↑↑KAT6A, ↓POSTN, ↑↑SYNE1
Cancer	hyperplasia	hyperplasia of epithelial cells	4	5.21×10^{-3}	↓CAV1, ↓↓CTSV, ↑↑RORA, ↓SMAD7
Cardiovascular System Development and Function	abnormal morphology	abnormal morphology of cardiovascular system	16	5.50×10^{-3}	↑↑BTC, ↓CAV1, ↑↑COL4A3, ↓↓COL5A1, ↓EGLN1, ↑↑FOXO1, ↓↓GUCY1A3, ↑↑HPGD, ↑↑KAT6A, ↑↑NOV, ↓POSTN, ↓↓PTGIS, ↓↓RYR2, ↓SMAD7, ↑↑VWF, ↓ZEB1
Connective Tissue Disorders | Developmental Disorder | Metabolic Disease | Skeletal and Muscular Disorders	Paget's disease	Paget's disease	2	5.56×10^{-3}	↓GGPS1, ↑↑TNFRSF11A
Connective Tissue Development and Function | Embryonic Development | Organ Development | Organ Morphology | Organismal Development | Skeletal and Muscular System Development and Function | Tissue Development | Tissue Morphology	abnormal morphology	abnormal morphology of trabecula	2	5.56×10^{-3}	↓CAV1, ↓↓CYP19A1
Organ Morphology | Organismal Development | Organismal Injury and Abnormalities | Renal and Urological System Development and Function	atrophy	atrophy of renal cortex	2	5.56×10^{-3}	↑↑ADAMTS1, ↓↓PTGIS

Cell-To-Cell Signaling and Interaction | Nervous System Development and Function	auditory evoked potential	abnormal auditory evoked potential	2	5.56×10^{-3}	↓↓CYP19A1, ↓SLC12A2
Cellular Development | Cellular Growth and Proliferation | Reproductive System Development and Function	expansion	expansion of cumulus cells	2	5.56×10^{-3}	↑↑BTC, ↓↓TNFAIP6
Cancer | Organismal Injury and Abnormalities | Reproductive System Disease	hormone receptor positive breast cancer	hormone receptor positive breast cancer	2	5.56×10^{-3}	↓↓CYP19A1, ↓↓LHCGR
Cancer | Gastrointestinal Disease | Hepatic System Disease	liver adenoma	liver adenoma	2	5.56×10^{-3}	↓BHMT, ↓↓SLC2A1
Lipid Metabolism | Small Molecule Biochemistry	synthesis	synthesis of sphingomyelin	2	5.56×10^{-3}	↓↓ABCA8, ↓↓SGMS2
Cardiovascular Disease | Hematological Disease	thrombosis	thrombosis of carotid artery	2	5.56×10^{-3}	↓GUCY1B3, ↑↑TFPI
Cardiovascular System Development and Function	morphology	morphology of cardiovascular system	17	5.61×10^{-3}	↑↑BTC, ↓CAV1, ↑↑COL4A3, ↓↓COL5A1, ↓EGLN1, ↑↑FOXO1, ↓↓GUCY1A3, ↑↑HPGD, ↑↑KAT6A, ↓MAP2K6, ↑↑NOV, ↓POSTN, ↓↓PTGIS, ↓↓RYR2, ↓SMAD7, ↑↑VWF, ↓ZEB1
Cardiovascular System Development and Function | Cell Morphology | Cellular Development | Organismal Development	branching	branching of blood vessel	3	5.67×10^{-3}	↑↑ADAMTS1, ↓↓ANGPT2, ↓VEGFC
Cancer | Tumor Morphology	progression	progression of malignant tumor	4	5.78×10^{-3}	↑↑FOXO1, ↓HMGB1, ↓↓MMP1, ↓SKP2

Cancer	adenocarcinoma	adenocarcinoma	73	5.84×10^{-3}	↓↓ABCA8, ↑ACPP, ↓↓ACTN2, ↑↑ADAMTS1, ↓AJUBA, ↑↑AKR1C1/AKR1C2, ↑↑ALCAM, ↓ALG9, ↑↑ANK3, ↑↑ANKRD28, ↓ARV1, ↓ASAP1, ↓BHMT, ↓CAV1, ↓↓CBWD3/CBWD6, ↓CES1, ↓CKLF, ↓↓COL12A1, ↑↑COL14A1, ↓↓COX4I1, ↓↓DAPK1, ↓DCAF13, ↓↓DCLK1, ↑↑DCN, ↑↑DST, ↓↓ELAVL2, ↓ETAA1, ↑↑FAM13A, ↓FANK1, ↑↑FOXO1, ↓GGPS1, ↑↑GPR116, ↓↓GUCY1A3, ↓HMCN1, ↓HMGB1, ↓IFT81, ↑↑KAT6A, ↓↓LHCGR, ↑↑MAP4K4, ↓mir-210, ↓↓MT-ND2, ↑MT1X, ↓NIN, ↑↑NOV, ↓↓OLFM4, ↑↑PABPC1, ↓PARP11, ↓↓PELP1, ↓PON2, ↓POSTN, ↑↑PRICKLE1, ↓PROSC, ↓RARS2, ↓↓RGS7, ↑↑RHOQ, ↓↓RHPN2, ↓↓RIF1, ↓RIMS2, ↓↓RIN2, ↓↓RYR2, ↑SHC4, ↓SKP2, ↓SLC12A2, ↓SMAD7, ↑↑SYNE1, ↓↓TNFAIP6, ↑TOX, ↓TYMS, ↓↓UGT1A9 (includes others), ↓↓UST, ↓VEGFC, ↑↑VWF, ↓ZEB1
Cancer | Gastrointestinal Disease	colon cancer	colon cancer	54	5.84×10^{-3}	↑ACPP, ↑↑ADAMTS1, ↑↑AKR1C1/AKR1C2, ↑↑ALCAM, ↓ALG9, ↑↑ANK3, ↑↑ANKRD28, ↑↑ANXA4, ↓ARV1, ↓ASAP1, ↓CAV1, ↓↓CBWD3/CBWD6, ↓CKLF, ↓↓COL12A1, ↑↑COL14A1, ↑↑CPEB4, ↓↓CRIP1, ↓↓DAPK1, ↓↓DCLK1, ↑↑DCN, ↑↑DST, ↓↓ELAVL2, ↓ETAA1, ↓FANK1, ↑↑GPR116, ↓↓GUCY1A3, ↓HMCN1, ↑↑KAT6A, ↑↑KCNJ8, ↓↓LHCGR, ↑↑MAP4K4, ↑MT1X, ↓NIN, ↑↑NOV, ↓↓OLFM4, ↓PARP11, ↓↓PELP1, ↑↑RHOQ, ↓↓RHPN2, ↓↓RIF1, ↓RIMS2, ↓↓RIN2, ↓↓RYR2, ↑SHC4, ↓SKP2, ↓SLC12A2, ↓↓SLC26A2, ↑↑SYNE1, ↓↓TNFAIP6, ↑TOX, ↓TYMS, ↓↓UGT1A9 (includes others), ↓↓UST, ↑↑VWF

Organismal Development	abnormal morphology	abnormal morphology of thoracic cavity	15	5.89×10^{-3}	↑↑BTC, ↓CAV1, ↓CAV2, ↑↑DCN, ↓EGLN1, ↓ELK3, ↓GLCE, ↑↑GPR116, ↑↑KAT6A, ↑↑NOV, ↓POSTN, ↓↓RYR2, ↓SMAD7, ↑↑SYNE1, ↓ZEB1
Cancer | Organismal Injury and Abnormalities | Reproductive System Disease	carcinoma	carcinoma in breast	20	5.98×10^{-3}	↓↓ABCA8, ↑ACPP, ↓↓ACTN2, ↑↑ADAMTS1, ↓BCAT1, ↓CAV1, ↓CES1, ↓CHST7, ↓↓COL12A1, ↓↓COX4I1, ↓↓CYP19A1, ↓↓LHCGR, ↓mir-210, ↓↓MT-ND2, ↑MT1X, ↓↓PID1, ↓PROSC, ↓↓RHPN2, ↑↑SYNE1, ↓TYMS
Cellular Function and Maintenance	function	function of connective tissue cells	5	6.07×10^{-3}	↓CAV1, ↓↓COL12A1, ↓↓CTSV, ↓↓CYP19A1, ↑↑TNFRSF11A
Cancer | Gastrointestinal Disease	gastrointestinal carcinoma	gastrointestinal carcinoma	53	6.09×10^{-3}	↑ACPP, ↑↑ADAMTS1, ↑↑AKR1C1/AKR1C2, ↑↑ALCAM, ↓ALG9, ↑↑ANK3, ↑↑ANKRD28, ↑↑ANXA4, ↓ARV1, ↓ASAP1, ↓BHMT, ↓CANX, ↓CAV1, ↓↓CBWD3/CBWD6, ↓CKLF, ↓↓COL12A1, ↑↑COL14A1, ↓↓DAPK1, ↓DCAF13, ↓↓DCLK1, ↑↑DCN, ↑↑DST, ↓↓ELAVL2, ↓ETAA1, ↓FANK1, ↑↑GPR116, ↓↓GUCY1A3, ↓HMCN1, ↑↑KAT6A, ↓↓LHCGR, ↑↑MAP4K4, ↓NIN, ↑↑NOV, ↓↓OLFM4, ↓PARP11, ↓↓PELP1, ↓POSTN, ↑↑RHOQ, ↓↓RHPN2, ↓↓RIF1, ↓RIMS2, ↓↓RIN2, ↓↓RYR2, ↑SHC4, ↓SKP2, ↓SLC12A2, ↑↑SYNE1, ↓↓TNFAIP6, ↑TOX, ↓TYMS, ↓↓UGT1A9 (includes others), ↓↓UST, ↑↑VWF
Cancer | Cellular Development | Cellular Growth and Proliferation | Tumor Morphology	metastasis	metastasis of malignant tumor	3	6.14×10^{-3}	↑↑ANGPTL1, ↓CDCA7L, ↓VEGFC
Cancer | Hematological Disease | Immunological Disease	T-cell non-Hodgkin's disease	T-cell non-Hodgkin's disease	7	6.32×10^{-3}	↓↓COL12A1, ↑COL4A2, ↑↑DCN, ↓HMGB1, ↓SKP2, ↓TYMS, ↓ZEB1

Tissue Morphology	morphology	morphology of connective tissue	13	6.38×10^{-3}	↑↑BMPR1B, ↓CAV1, ↓↓COL12A1, ↓↓CTSV, ↓↓CYP19A1, ↑↑DCN, ↓↓LHCGR, ↑↑NOV, ↓POSTN, ↓↓PTGIS, ↓↓RYR2, ↓SLC12A2, ↑↑VWF
Embryonic Development | Organ Development | Organismal Development | Skeletal and Muscular System Development and Function | Tissue Development	development	development of striated muscle	6	6.41×10^{-3}	↓CAV1, ↓EGLN1, ↑↑FOXO1, ↓HMGB1, ↑↑RGS4, ↓SMAD7
Lipid Metabolism | Molecular Transport | Small Molecule Biochemistry	abnormal quantity	abnormal quantity of lipid	6	6.61×10^{-3}	↓BHMT, ↓CAV1, ↑↑GPR116, ↑↑HPGD, ↓↓PTGIS, ↓↓SGMS2
Tissue Morphology	diameter	diameter of long bones	2	6.63×10^{-3}	↑↑DCN, ↑↑TNFRSF11A
Cellular Movement | Skeletal and Muscular System Development and Function	migration	migration of muscle precursor cells	2	6.63×10^{-3}	↑↑FOXO1, ↓HMGB1
Cardiovascular Disease | Hereditary Disorder | Respiratory Disease	primary pulmonary hypertension	primary pulmonary hypertension	2	6.63×10^{-3}	↑↑BMPR1B, ↓CAV1
Cardiovascular System Development and Function | Cell Morphology | Cellular Development | Organismal Development	sprouting	sprouting of capillary vessel	2	6.63×10^{-3}	↑↑ADAMTS1, ↓↓ANGPT2
Organismal Injury and Abnormalities	wound	Wound	7	6.81×10^{-3}	↓AJUBA, ↓CAV1, ↓↓COL5A1, ↓ELK3, ↓HMGB1, ↓POSTN, ↓SKP2
Cardiovascular Disease | Hematological Disease	thrombosis	Thrombosis	6	7.01×10^{-3}	↓↓ANGPT2, ↑↑BTC, ↓GUCY1B3, ↑↑TFPI, ↓VEGFC, ↑↑VWF
Cellular Growth and Proliferation	proliferation	proliferation of ovarian cells	3	7.14×10^{-3}	↑↑BTC, ↑↑FOXO1, ↓↓TNFAIP6
Cardiovascular System Development and Function | Tissue Morphology	quantity	quantity of endothelial cells	3	7.14×10^{-3}	↓↓ANGPT2, ↓CAV1, ↓CAV2

Carbohydrate Metabolism | Small Molecule Biochemistry	synthesis	synthesis of glycosaminoglycan	4	7.39×10^{-3}	↓CHST7, ↓GLCE, ↓↓TNFAIP6, ↓VEGFC
Organismal Injury and Abnormalities | Renal and Urological Disease	failure	failure of kidney	7	7.52×10^{-3}	↑↑COL4A3, ↑↑DCN, ↓↓GUCY1A3, ↓GUCY1B3, ↓PDE7B, ↓SKP2, ↑↑TFPI
Cancer | Gastrointestinal Disease	esophageal cancer	esophageal cancer	6	7.64×10^{-3}	↓BHMT, ↓CAV1, ↑↑KAT6A, ↓POSTN, ↑↑SYNE1, ↓TYMS
Cellular Movement | Connective Tissue Development and Function	chemotaxis	chemotaxis of fibroblasts	3	7.68×10^{-3}	↓↓ANGPT2, ↓HMGB1, ↑↑NOV
Cancer | Cellular Development | Cellular Growth and Proliferation | Reproductive System Disease	metastasis	metastasis of breast cancer cell lines	3	7.68×10^{-3}	↑↑ADAMTS1, ↑↑ANGPTL1, ↑↑SND1
Lipid Metabolism | Molecular Transport | Small Molecule Biochemistry	abnormal quantity	abnormal quantity of prostaglandin	2	7.78×10^{-3}	↑↑HPGD, ↓↓PTGIS
Organismal Injury and Abnormalities | Reproductive System Disease	anovulation	anovulation	2	7.78×10^{-3}	↓↓CYP19A1, ↓↓LHCGR
Cellular Development	epithelial-mesenchymal transition	epithelial-mesenchymal transition of colon cancer cell lines	2	7.78×10^{-3}	↓CAV1, ↓ZEB1
Cardiovascular System Development and Function | Embryonic Development | Lymphoid Tissue Structure and Development | Organ Development | Organismal Development	formation	formation of lymph vessel	2	7.78×10^{-3}	↓↓ANGPT2, ↓VEGFC
Carbohydrate Metabolism | Energy Production | Small Molecule Biochemistry	oxidation	oxidation of D-glucose	3	8.24×10^{-3}	↓BHMT, ↑↑NOV, ↓↓SLC2A1

Cancer | Hematological Disease | Immunological Disease	peripheral T-cell lymphoma	peripheral T-cell lymphoma	3	8.24×10^{-3}	↓↓COL12A1, ↑COL4A2, ↓TYMS
Cancer | Gastrointestinal Disease	gastrointestinal adenocarcinoma	gastrointestinal adenocarcinoma	50	8.49×10^{-3}	↑ACPP, ↑↑ADAMTS1, ↑↑AKR1C1/AKR1C2, ↑↑ALCAM, ↓ALG9, ↑↑ANK3, ↑↑ANKRD28, ↓ARV1, ↓ASAP1, ↓BHMT, ↓CAV1, ↓↓CBWD3/CBWD6, ↓CKLF, ↓↓COL12A1, ↑↑COL14A1, ↓↓DAPK1, ↓DCAF13, ↓↓DCLK1, ↑↑DCN, ↑↑DST, ↓↓ELAVL2, ↓ETAA1, ↓FANK1, ↑↑GPR116, ↓↓GUCY1A3, ↓HMCN1, ↑↑KAT6A, ↓↓LHCGR, ↑↑MAP4K4, ↓NIN, ↑↑NOV, ↓↓OLFM4, ↓PARP11, ↓↓PELP1, ↑↑RHOQ, ↓↓RHPN2, ↓↓RIF1, ↓RIMS2, ↓↓RIN2, ↓↓RYR2, ↑SHC4, ↓SKP2, ↓SLC12A2, ↑↑SYNE1, ↓↓TNFAIP6, ↑TOX, ↓TYMS, ↓↓UGT1A9 (includes others), ↓↓UST, ↑↑VWF
Tissue Morphology	abnormal morphology	abnormal morphology of epithelial tissue	11	8.59×10^{-3}	↓CAV1, ↓CAV2, ↑↑COL4A3, ↓↓CYP19A1, ↑↑DCN, ↑↑GPR116, ↓↓LHCGR, ↓POSTN, ↓SLC12A2, ↑↑TNFRSF11A, ↓ZEB1
Drug Metabolism | Lipid Metabolism | Molecular Transport | Small Molecule Biochemistry	concentration	concentration of prostaglandin E2	3	8.82×10^{-3}	↑↑HPGD, ↓↓LHCGR, ↓↓PTGIS
Cancer | Cellular Movement | Tumor Morphology	invasion	invasion of mammary tumor cells	3	8.82×10^{-3}	↓ASAP1, ↓↓MMP1, ↓VEGFC
Organ Morphology | Reproductive System Development and Function	size	size of gonad	3	8.82×10^{-3}	↓↓CYP19A1, ↓↓LHCGR, ↓SLC12A2
Cell Morphology | Cellular Assembly and Organization	abnormal morphology	abnormal morphology of collagen fibrils	2	9.01×10^{-3}	↓↓COL5A1, ↑↑DCN
Cellular Development | Hematopoiesis	commitment	commitment of leukocytes	2	9.01×10^{-3}	↑↑TNFRSF11A, ↑TOX

Cell Cycle | Cell-To-Cell Signaling and Interaction | Cellular Growth and Proliferation	contact growth inhibition	contact growth inhibition of connective tissue cells	2	9.01×10^{-3}	↓SMAD7, ↓ZEB1
Ophthalmic Disease	corneal dystrophy	corneal dystrophy	2	9.01×10^{-3}	↓POSTN, ↓ZEB1
Cellular Development | Cellular Growth and Proliferation | Nervous System Development and Function	expansion	expansion of neurons	2	9.01×10^{-3}	↑↑BTC, ↓IRX3
Cancer	hyperplasia	hyperplasia of connective tissue cells	2	9.01×10^{-3}	↓CAV1, ↑↑TNFRSF11A
Cancer | Cellular Movement | Tumor Morphology	invasion	invasion of melanoma cells	2	9.01×10^{-3}	↑↑ALCAM, ↑↑NOV
Cellular Movement	migration	migration of smooth muscle cell lines	2	9.01×10^{-3}	↓↓GUCY1A3, ↓GUCY1B3
Hematological System Development and Function | Inflammatory Response | Tissue Morphology	quantity	quantity of foam cells	2	9.01×10^{-3}	↓CES1, ↑↑GPR116
Organismal Injury and Abnormalities	shock response	Shock Response	6	9.03×10^{-3}	↓CAV1, ↑CYP2B6, ↓↓GUCY1A3, ↓GUCY1B3, ↓HMGB1, ↓PDE7B
Cancer | Hematological Disease | Immunological Disease	non-Hodgkin's disease	non-Hodgkin's disease	12	9.09×10^{-3}	↓↓COL12A1, ↑COL4A2, ↑↑DCN, ↓↓DYNC1I1, ↑↑FOXO1, ↓HMGB1, ↓↓JAKMIP2, ↑↑MAP4K4, ↓↓PDZRN3, ↓SKP2, ↓TYMS, ↓ZEB1
Connective Tissue Disorders | Skeletal and Muscular Disorders	arthropathy	arthropathy	22	9.33×10^{-3}	↑↑ADAMTS1, ↓BHMT, ↑↑BTC, ↑COL4A2, ↓↓CYP19A1, ↑CYP2B6, ↓EGLN1, ↑↑FOXO1, ↓GGPS1, ↓H3F3A/H3F3B, ↓HMGB1, ↑↑HPGD, ↑↑MAP4K4, ↓↓MMP1, ↑NAA25, ↓↓PTGIS, ↑↑SLC7A2, ↑↑SND1, ↑↑SYNE1, ↓↓TNFAIP6, ↑↑TNFRSF11A, ↓TYMS

Organ Morphology | Organismal Development | Reproductive System Development and Function	abnormal morphology	abnormal morphology of corpus luteum	3	9.43×10^{-3}	↓↓CYP19A1, ↑↑HPGD, ↓↓LHCGR
Cell Death and Survival	cell viability	cell viability of bone cancer cell lines	3	9.43×10^{-3}	↓↓BNIP3, ↑↑DPP8, ↓MAP2K6
Cellular Function and Maintenance	function	function of gonadal cells	3	9.43×10^{-3}	↑↑AKAP4, ↓↓CYP19A1, ↓↓LHCGR
Cellular Movement	cell movement	cell movement of ovarian cancer cell lines	3	1.01×10^{-2}	↓CAV1, ↑↑MAP4K4, ↓↓ST3GAL5
Cardiovascular System Development and Function | Organ Morphology	dilation	dilation of left ventricle	3	1.01×10^{-2}	↓↓BNIP3, ↓CAV1, ↓↓SLC2A1
Embryonic Development | Organ Development | Organismal Development | Tissue Development	formation	formation of muscle	4	1.01×10^{-2}	↑↑FOXO1, ↓HMGB1, ↑↑NOV, ↑↑RGS4
Cell Cycle	cell cycle progression	arrest in cell cycle progression of lymphoma cell lines	2	1.03×10^{-2}	↑↑FOXO1, ↓ZEB1
Organismal Functions | Organismal Injury and Abnormalities | Tissue Morphology	healing	healing of wound	6	1.03×10^{-2}	↓AJUBA, ↓CAV1, ↓↓COL5A1, ↓ELK3, ↓POSTN, ↓SKP2
Cellular Movement	migration	migration of bladder cancer cell lines	2	1.03×10^{-2}	↓CAV1, ↑↑DCN

Symbols for genes with increased (or decreased) expression and fold-change>=2 are preceded with ↑↑ (or ↓↓). Symbols for genes with increased (or decreased) expression and fold-change<2 are preceded with ↑ (or ↓).