

**supplement files****Table S1.** Characteristics of datasets in this study

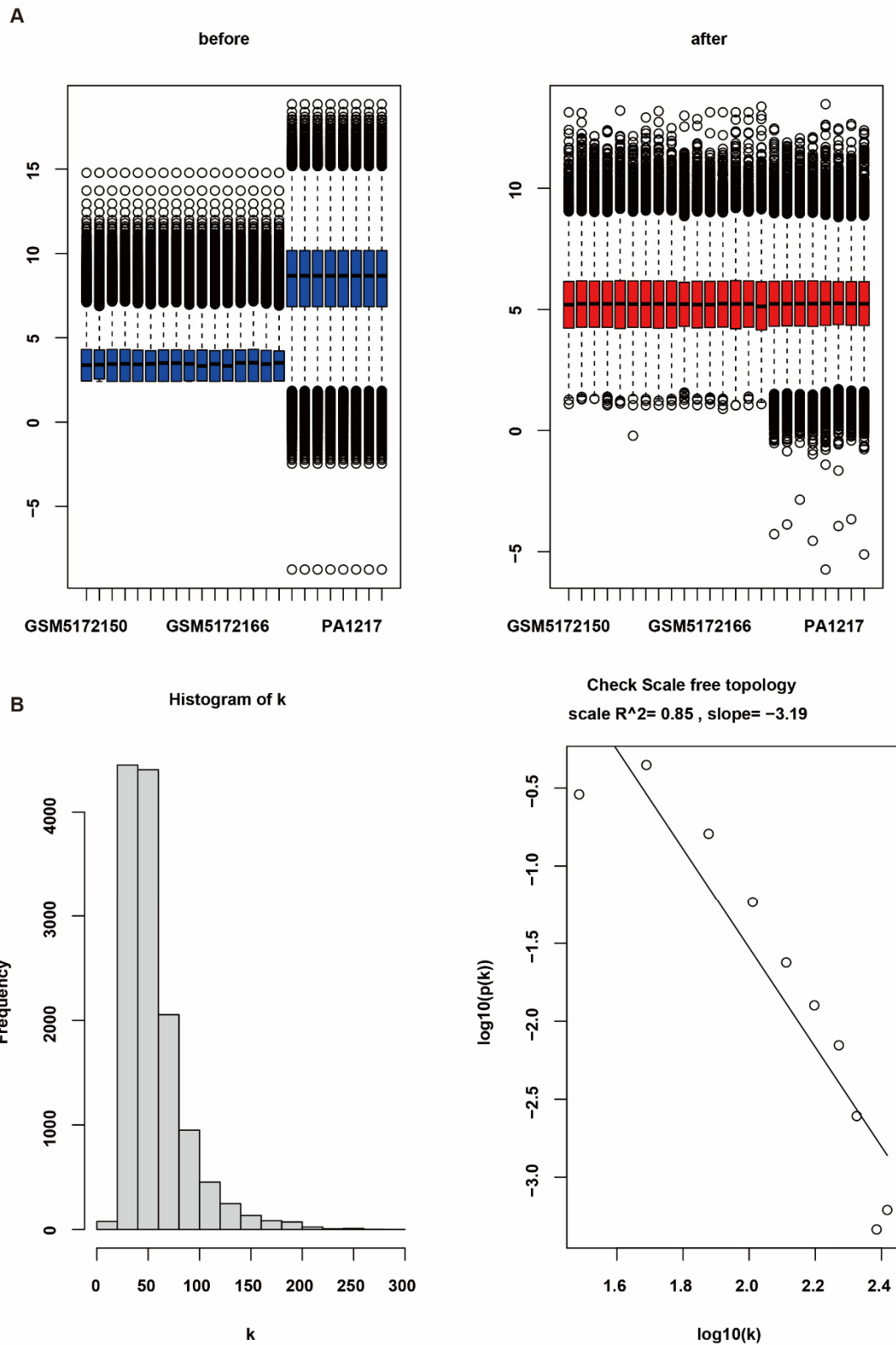
Dataset	Platform	Date	Sample		Subject	Species
			PAH	Normal		
GSE144274	GPL20301	2020	4	4	PASMCs	Homo sapiens
GSE168905	GPL16791	2021	7	9	PASMCs	Homo sapiens

**Table S2.** The list of 56 pyroptosis-related genes.

<b>Gene</b>	<b>Gene symbol</b>	<b>Gene</b>	<b>Gene symbol</b>
AIM2	absent in melanoma 2	GZMB	granzyme B
BAK1	BCL2 antagonist/killer 1	HDAC6	histone deacetylase 6
BAX	BCL2 associated X, apoptosis regulator	HMGB1	high mobility group box 1
BNIP3	BCL2 interacting protein 3	IL18	interleukin 18
CARD8	caspase recruitment domain family member 8	IL1B	interleukin 1 beta
CASP1	caspase 1	IL6	interleukin 6
CASP10	caspase 10	IRF7	interferon regulatory factor 7
CASP11	caspase 11	NEXN	nexilin F-actin binding protein
CASP3	caspase 3	NLRC4	NLR family CARD domain containing 4
CASP4	caspase 4	NLRP1	NLR family pyrin domain containing 1
CASP5	caspase 5	NLRP12	NLR family pyrin domain containing 12
CASP6	caspase 6	NLRP2	NLR family pyrin domain containing 2
CASP7	caspase 7	NLRP3	NLR family pyrin domain containing 3
CASP8	caspase 8	NLRP6	NLR family pyrin domain containing 6
CASP9	caspase 9	NLRP7	NLR family pyrin domain containing 7
CD147	basigin	NOD1	nucleotide binding oligomerization domain containing 1
CD274	pd1l Programmed cell death 1 ligand 1	NOD2	nucleotide binding oligomerization domain containing 2
CRTAC1	cartilage acidic protein 1	PDCD6	programmed cell death 6
ELANE	elastase, neutrophil expressed	PJVK	pejvakin
FGF21	fibroblast growth factor 21	PLCG1	phospholipase C gamma 1
FOXO3	forkhead box O3	PRKACA	protein kinase cAMP-activated catalytic subunit alpha
GPX4	glutathione peroxidase 4	PYCARD	PYD and CARD domain containing
GSDMA	gasdermin A	SCAF11	SR-related CTD associated factor 11
GSDMB	gasdermin B	TET2	tet methylcytosine dioxygenase 2
GSDMC	gasdermin C	TIRAP	TIR domain containing adaptor protein
GSDMD	gasdermin D	TLR4	toll like receptor 4
GSDME	gasdermin E	TNF	tumor necrosis factor
GZMA	granzyme A	TXINP	thioredoxin interacting protein

**Table S3 The gene number of each module**

black	blue	brown	cyan	darkgreen	darkgrey
539	1168	894	336	173	143
darkred	darkturquoise	green	greenyellow	grey	grey60
179	155	706	383	4	314
lightcyan	lightgreen	lightyellow	magenta	midnightblue	pink
332	284	253	858	334	462
red	royalblue	salmon	tan	turquoise	yellow
614	218	338	375	3125	783



**Figure S1** The boxplot of all samples before and after remove batch effect (A) and Scale-free topology when soft-thresholding power  $\beta = 5$ .