Supplementary

Table S1 identified 34 genes related to ICD from the published literature

ATG5	*ENTPD1*	*IL17RA*	*PIK3CA*
BAX	*FOXP3*	*IL1B*	*PRF1*
CALR	*HMGB1*	*IL1R1*	*TLR4*
CASP1	*HSP90AA1*	*IL6*	*TNF*
CASP8	*IFNA1*	*LY96*	
CD4	*IFNB1*	*MYD88*	
CD8A	*IFNG*	*NLRP3*	
CD8B	*IFNGR1*	*NT5E*	
CXCR3	*IL10*	*P2RX7*	
EIF2AK3	*IL17A*	*PDIA3*	

https://dx.doi.org/10.21037/jtd-2025-616

Table S2 presents the basic patient information provided by the two datasets, GSE70866 and GSE70867, from the GEO database, which is the source of the data in this article

GSE70866

Characteristic	N=196
Status	
Public on Dec 31 2018	196 (100%)
Submission date	
Jul 13 2015	196 (100%)
Last update date	
Dec 31 2018	196 (100%)
Type	
RNA	196 (100%)
Cell type	
Bronchoalveolar lavage (BAL) cells	196 (100%)
Diagnosis	
Healthy volunteer	20 (10.2%)
IPF	176 (89.8%)
Cohort	
Freiburg	82 (42%)
SIENA	50 (26%)
LEUVEN	64 (33%)
Age	
18–60	35 (18%)
≥60	161 (82%)
Sex	
Male	160 (82%)
Female	36 (18%)
Time to death (days)	
≤306	45 (23%)
306–570	43 (22%)
570–961	44 (22.4%)
>961	44 (22.4%)
Missing	20 (10.2%)
Survival status	
Censored	76 (39%)
Death	100 (51%)
Missing	20 (10%)

Table S2 (*continued*)

Table S2 (*continued*)

Characteristic	N=196
Gap	
0	1 (0.5%)
1	4 (2.0%)
2	21 (11%)
3	30 (15%)
4	48 (24%)
5	35 (18%)
6	16 (8.2%)
7	15 (7.7%)
8	6 (3.1%)
Missing	20 (10%)
Molecule	
Total RNA	196 (100%)

GSE70867

Characteristic	N=321
Status	
Public on Dec 31 2018	321 (100%)
Submission date	
Jul 13 2015	218 (68%)
Sep 24 2015	103 (32%)
Last update date	
Dec 31 2018	321 (100%)
Type	
RNA	321 (100%)
Cell type	
Airway basal cells	11 (3.4%)
Bronchial epithelial cells	4 (1.2%)
Alveolar macrophages	7 (2.2%)
Bronchoalveolar lavage (BAL) cells	299 (93%)
Diagnosis	
Healthy volunteer	90 (28%)
IPF	176 (55%)
SARC	26 (8.1%)
COPD	29 (9.0%)

Table S2 (*continued*)

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Table S2 (*continued*)

Characteristic	N=321
Cohort	
Freiburg	150 (47%)
SIENA	50 (16%)
LEUVEN	64 (20%)
Hannover	57 (18%)
Age group	
18–60	80 (25%)
>60	162 (50.4%)
Missing	79 (24.6%)
Sex	
Male	189 (59%)
Female	53 (17%)
Missing	79 (25%)
Time to death (days)_group	
≤306	45 (14%)
306–570	43 (13.4%)
570–961	44 (13.7%)
>961	44 (13.7%)
Missing	145(45.2%)
Survival status	
Censored	76 (24%)
Death	100 (31%)
Missing	145 (45%)
Gap	
0	1 (0.3%)
1	4 (1.2%)
2	21 (6.5%)
3	30 (9.3%)
4	48 (15%)
5	35 (10.9%)
6	16 (5%)
7	15 (4.8%)
8	6 (1.9%)
Missing	145 (45.2%)
Molecule	
Total RNA	321 (100%)

https://dx.doi.org/10.21037/jtd-2025-616

Table S3 is a table listing the primary antibodies used in the incubation step at 4 ℃ in the lung tissue protein experiment

Antibodies	Manufacturer	Source	Re-activity	Dilution	Catalog numbers
IL10	Proteintech	Rabbit	Human	0.73611	#82793-16-RR
CASP-1	Proteintech	Rabbit	Human	0.73611	#81482-1-RR
NLRP3	Proteintech	Rabbit	Human	0.73611	#30109-1-AP
β-actin	CST	Rabbit	Human	0.73611	#4970

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Table S4 presents the list of genes that we used to construct GO and KEGG analyses to study the biological processes and pathways related to risk-associated genes (68 in the training group and 121 in the test group).

Gene	Low mean	High mean	logFC	P value	FDR
ACOX2	4.358671894	5.397722712	0.308462259	5.15832E-05	0.003586824
ACPP	3.153612192	4.430175568	0.490358615	1.48762E-05	0.001640791
ADM	7.43885134	9.40225728	0.337927292	1.60951E-08	3.502E-05
AJUBA	2.172739767	3.38229888	0.63848876	2.67766E-05	0.002352961
AKAP2	2.288302261	3.692630092	0.690371119	0.000224007	0.009656467
AMPD3	5.184270343	6.979354876	0.428952738	2.17833E-06	0.00063342
ANXA8L2	5.201707516	6.615652528	0.346898181	0.000224007	0.009656467
AP1M2	3.703914864	4.970519616	0.42434574	0.000114612	0.006364543
ARAP3	7.066624959	8.809824872	0.318091996	1.2896E-09	6.87484E-06
ASPRV1	4.829466295	6.50531788	0.42975579	9.91438E-06	0.001278715
ATP2A3	5.791857651	7.198531808	0.313676544	1.81454E-05	0.001848403
BMP6	2.870063042	4.184530748	0.543983422	5.15832E-05	0.003586824
C14orf34	3.94458055	5.721281328	0.536466388	0.000124873	0.006724237
C17orf28	3.131393069	4.66424134	0.574837825	0.00020641	0.009195314
CCL7	5.938116907	8.056809148	0.440203084	2.00196E-05	0.001952274
CCR3	4.31406835	6.103569508	0.500604177	1.64354E-05	0.001752339
CD93	5.696072957	7.256115612	0.349229818	1.37176E-06	0.000535087
CECR6	4.755071964	6.562941728	0.464875448	2.18971E-08	3.502E-05
CHST15	4.924812654	7.47829492	0.602640524	1.37678E-08	3.502E-05
CLIC6	3.473729802	5.50373714	0.663926027	9.63815E-05	0.00564626
CMTM2	5.719858043	7.346917964	0.361159823	1.48762E-05	0.001640791
CNIH3	4.936865464	6.357551028	0.364875806	5.65048E-05	0.00382916
CNKSR1	3.316488848	4.624248844	0.479562361	0.00020641	0.009195314
CTTN	4.549651253	6.752560084	0.56967861	1.73164E-06	0.000576961
CXCL1	7.54223761	9.305160856	0.303038488	3.80983E-06	0.000834667
CXCL17	3.81508477	5.815078908	0.608083655	0.000224007	0.009656467
DDR1	4.389775476	5.544507016	0.336912038	0.000105133	0.006048164
DUOX1	3.001830314	4.839828844	0.689113601	1.81454E-05	0.001848403
DUSP14	5.972964287	7.365788516	0.30239288	8.94181E-06	0.001211919
ECM1	5.656614882	7.254401408	0.358917624	1.94302E-06	0.00063342
EGR3	2.858434684	4.411500712	0.626044193	9.91438E-06	0.001278715
F2RL1	2.974836828	5.03883582	0.760279912	1.73164E-06	0.000576961
FAM174B	4.366663593	5.871252288	0.42713686	9.38935E-08	9.38524E-05
FAM27E3	3.434029067	4.937824088	0.52397319	1.34555E-05	0.001548153

Table S4 (*continued*)

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Table S4 (*continued*)

Gene	Low mean	High mean	logFC	P value	FDR
FAM57A	3.372859998	4.45539224	0.401580013	0.000174965	0.008278741
FAM59A	2.982996113	4.415616404	0.565852749	3.56015E-05	0.002818687
FAM65B	6.066671276	7.469782868	0.300161166	1.81454E-05	0.001848403
FCAR	4.061009363	5.6542532	0.477498136	1.81454E-05	0.001848403
FFAR3	4.129729036	6.654095784	0.688195508	2.44007E-06	0.000672828
FOSB	7.016462597	8.799786212	0.326724606	8.94181E-06	0.001211919
FZD6	2.585970268	3.546678532	0.455762883	3.56015E-05	0.002818687
G0S2	8.43707255	10.69956389	0.342737582	5.87265E-06	0.001067287
GGT5	5.335766532	6.752350408	0.339694231	2.67766E-05	0.002352961
GHRL	4.241675268	5.48752272	0.371520832	2.43191E-05	0.002274473
GPR125	2.917873955	4.192758232	0.522982079	6.76765E-05	0.004346791
GPR56	6.843342434	8.635343836	0.335552483	1.73164E-06	0.000576961
GULP1	2.474941891	3.499171276	0.49961863	0.000124873	0.006724237
HRK	4.184046185	5.495858688	0.393446133	0.000174965	0.008278741
HSPG2	5.979136401	7.39301154	0.306225042	0.000160953	0.007896068
HTRA1	6.690295147	8.614726532	0.364735142	8.05871E-06	0.001193361
ID1	3.717332489	5.585435712	0.587402095	2.94631E-05	0.002493136
IL10	4.628514214	6.34626924	0.455359576	5.32861E-08	6.08717E-05
IL1R2	4.860358682	7.421751136	0.610696841	2.11847E-07	0.000154003
IL2RA	4.16551647	5.435733004	0.383979212	0.000114612	0.006364543
IL8	6.391862942	9.129551948	0.514307585	2.17833E-06	0.00063342
INPP5A	5.042836559	6.24703396	0.308935905	9.60702E-07	0.000438986
KANK1	4.614394658	6.274619628	0.443386605	0.000174965	0.008278741
KCNAB1	6.91476554	5.546218448	-0.318175894	0.000114612	0.006364543
KCNJ15	3.802428789	5.613390496	0.561951194	1.37176E-06	0.000535087
KCNK1	2.654170773	4.136485592	0.640144358	0.000160953	0.007896068
KCNK13	4.536633189	5.759543408	0.344332431	0.000105133	0.006048164
KCTD15	3.415959516	4.839928856	0.502694964	2.44007E-06	0.000672828
KRT17	3.165322488	4.816127016	0.60552095	5.15832E-05	0.003586824
KRT23	3.590784119	5.455532312	0.603421052	2.67766E-05	0.002352961
LAPTM4B	5.618834064	6.966570284	0.310177782	9.91438E-06	0.001278715
LHFP	2.743717253	4.355693176	0.666770515	2.00196E-05	0.001952274
LOC100129322	3.601987141	4.624880888	0.360623179	0.000160953	0.007896068
LOC283143	2.898079233	4.367697364	0.591775858	0.000190091	0.008761163

Table S4 (*continued*)

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Table S4 (*continued*)

Gene	Low mean	High mean	logFC	P value	FDR
LOC284751	3.421453604	4.812476792	0.492170199	3.56015E-05	0.002818687
LOC388780	3.417840155	5.338828304	0.643438226	4.70608E-05	0.003390289
LRG1	6.601193898	8.298426784	0.330110881	1.37176E-06	0.000535087
MARCKSL1	4.872231431	6.456193936	0.406101253	2.67766E-05	0.002352961
MERTK	5.075912632	7.092733444	0.482674492	7.25743E-06	0.001149189
METTL7B	3.459206386	4.954672864	0.518348714	6.18579E-05	0.004071164
MGAM	2.855169044	4.021180628	0.494042977	3.56015E-05	0.002818687
MLXIPL	2.896692795	4.000794508	0.46587984	8.08603E-05	0.004898479
MMP25	6.077355719	7.85311908	0.369822035	2.41659E-07	0.000161036
MRVI1	4.146477717	6.102170096	0.557436056	6.18579E-05	0.004071164
MS4A6E	4.187193647	5.309243244	0.3425226	5.15832E-05	0.003586824
MTSS1	4.619503575	6.046224328	0.388296683	6.76765E-05	0.004346791
MYO1D	3.609894775	5.391379316	0.578697631	1.34555E-05	0.001548153
NAV2	4.215466586	5.791918228	0.45834891	5.15832E-05	0.003586824
NOV	4.867067355	6.289457936	0.369882942	8.83066E-05	0.005269729
OAF	3.169569376	5.270879908	0.733756976	8.05871E-06	0.001193361
OLIG1	4.813026045	7.282323076	0.597454516	9.60702E-07	0.000438986
P2RY2	5.602940417	7.088574624	0.339311408	4.04844E-07	0.000231238
PI3	7.096160804	9.471594224	0.416568573	1.2193E-06	0.000527033
PID1	4.926253328	6.478784504	0.395232353	1.09847E-05	0.001341058
PLA2G10	3.121921307	4.589716408	0.555970842	8.08603E-05	0.004898479
PLD6	4.761573052	6.170051424	0.373844247	6.53091E-06	0.001123105
PRDM8	5.069575184	6.651215952	0.391753255	2.43191E-05	0.002274473
PROK2	4.271195906	6.895007944	0.690912143	6.53091E-06	0.001123105
RAB3D	3.166371643	4.647617764	0.553660824	4.73753E-06	0.000947091
RAB3IL1	4.186234027	5.91691724	0.49919275	8.94181E-06	0.001211919
RASEF	2.358772813	3.3942302	0.525047942	2.20723E-05	0.002113785
RHPN2	4.259973063	5.910601992	0.472460768	5.27669E-06	0.001004644
S100A12	5.743928517	8.44020186	0.555239709	8.51583E-07	0.000425605
S1PR3	2.735753898	4.473289084	0.70939754	1.81454E-05	0.001848403
SCHIP1	2.681823699	4.113449188	0.617134224	0.000160953	0.007896068
SELL	5.973542643	7.748455092	0.375321907	1.64354E-05	0.001752339
SH3RF1	4.391162299	6.091128188	0.472106608	2.18971E-08	3.502E-05
SIGLEC10	6.195486724	7.6316022	0.300768346	5.65048E-05	0.00382916

Table S4 (*continued*)

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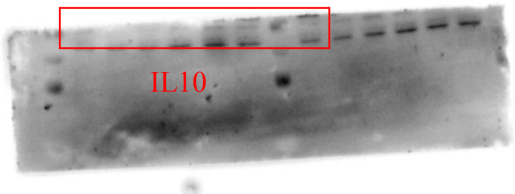
Table S4 (*continued*)

Gene	Low mean	High mean	logFC	P value	FDR
SLC23A2	5.151311879	6.502280664	0.336005941	2.67766E-05	0.002352961
SLC7A5	4.880239005	6.84608048	0.488326448	3.80983E-06	0.000834667
SLCO4A1	2.486993536	4.156732208	0.74104705	8.05871E-06	0.001193361
SLPI	7.155554241	9.233951236	0.367884597	2.00196E-05	0.001952274
ST6GALNAC1	3.563106258	5.190663028	0.542783325	7.39976E-05	0.004604838
STAB1	6.378157368	8.036819156	0.333484925	7.25743E-06	0.001149189
TAC4	3.041415977	4.215266484	0.470880691	1.48762E-05	0.001640791
TBC1D3B	3.886031033	5.00382852	0.364734928	6.18579E-05	0.004071164
TIMP4	4.676143552	6.174010844	0.400888797	3.23977E-05	0.002657111
TMEM154	4.944337321	6.710567276	0.440657557	7.25743E-06	0.001149189
TMEM45B	3.891016578	5.45950072	0.488621893	9.63815E-05	0.00564626
TPST1	3.981841879	6.511607548	0.70957782	1.54191E-06	0.000573483
TREML2	4.638213938	6.172400828	0.412262386	1.09847E-05	0.001341058
TRIM7	5.611414242	7.16030806	0.35165724	1.60951E-08	3.502E-05
TSHZ3	4.115307651	5.817502028	0.499399521	8.94181E-06	0.001211919
TUBB3	4.390488973	6.974615652	0.667732094	4.73753E-06	0.000947091
VENTX	4.223848421	5.645136144	0.418450313	1.48762E-05	0.001640791
VSTM2L	2.690098618	3.826654592	0.508424621	0.000174965	0.008278741
WFDC2	6.533498929	8.470603444	0.374608935	0.000135975	0.007060556

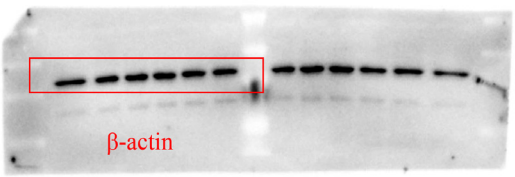
https://dx.doi.org/10.21037/jtd-2025-616

Appendix 1

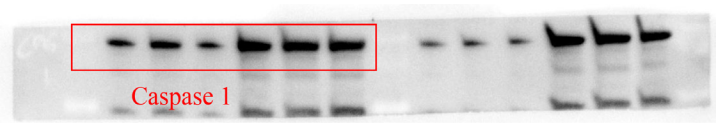
Appendix 1 is uncropped Gels and Blots images:
IL10:



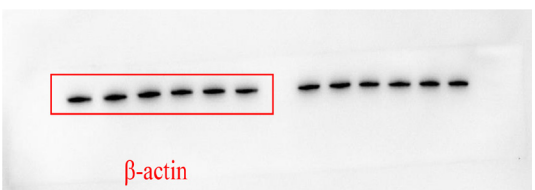
β-actin:



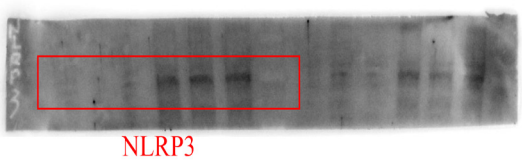
Caspase 1:



β-actin:

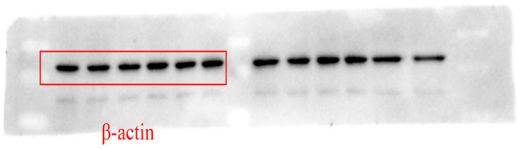


NLRP3:



β-actin:

https://dx.doi.org/10.21037/jtd-2025-616



Appendix 2

Appendix 2 is a document that contains the forward and reverse sequences of the primers used in real-time reverse transcription polymerase chain reaction (qRT-PCR). And Table S3 is a table listing the primary antibodies used in the incubation step at 4 ℃ in the lung tissue protein experiment.

The following forward and reverse sequences of primers used for qRT-PCR were used:

CASP-1:

Forward primer: ACAAGGCACGGGACCTATG;

Reverse primer: TCCCAGTCAGTCCTGGAAATG.

IL10:

Forward primer: CTTACTGACTGGCATGAGGATCA;

Reverse primer: GCAGCTCTAGGAGCATGTGG.

NLRP3:

Forward primer: ATTACCCGCCCGAGAAAGG;

Reverse primer: CATGAGTGTGGCTAGATCCAAG.

β-actin:

Forward primer: GTGACGTTGACATCCGTAAAGA;

Reverse primer: GCCGGACTCATCGTACTCC.

https://dx.doi.org/10.21037/jtd-2025-616

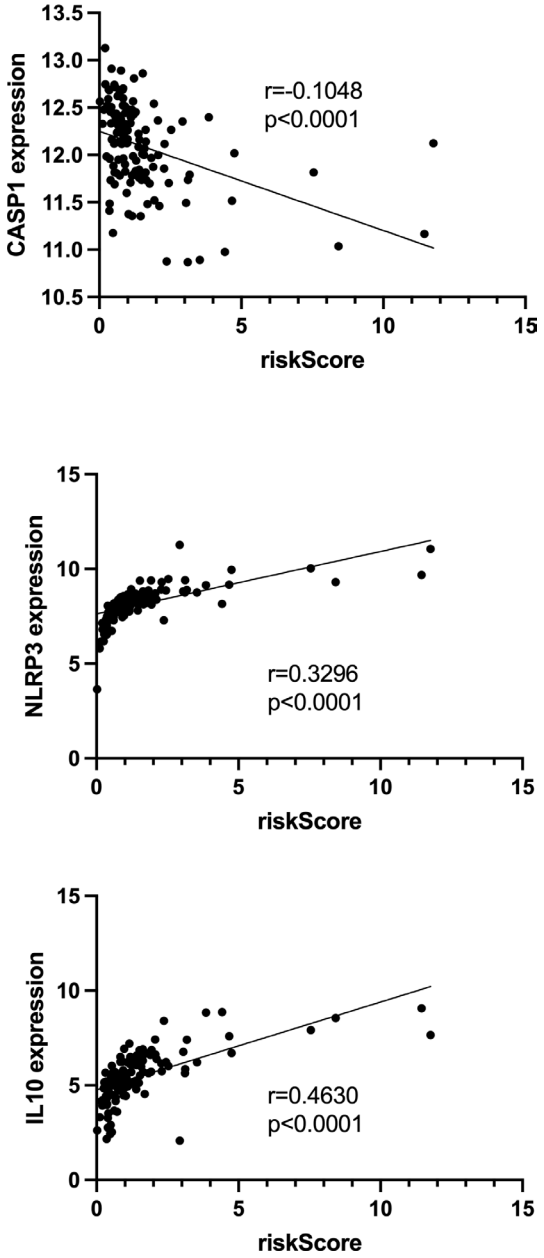


Figure S1 Correlation analysis between mRNA expression of NLRP3, IL10, CASP1 and risk score.

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