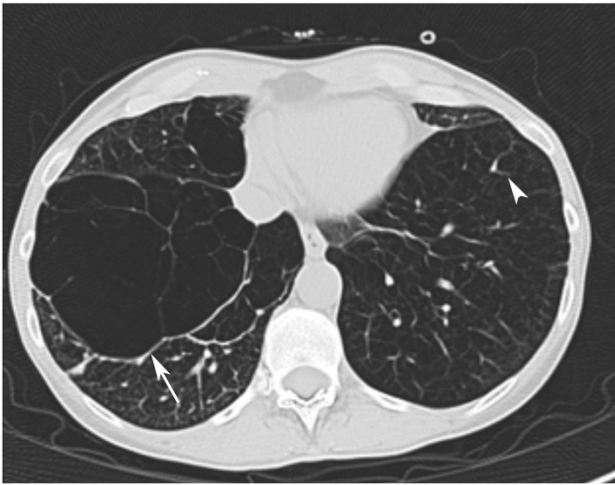


Patient's thoracic CT scan



Supplementary Fig. 1. Representative image of the patient's thoracic CT showing lower lobes of the lung involved with extensive emphysema, with loss of normal lung tissue density (arrowhead) and large bulla formation (arrow).

Supplementary Table S1. SNPs within *IGSF3* associated with COPD phenotypes.

SNP (IGSF3 W-20 kb)	BP (chr3:7 p13)	Loc	COPD-NEW										COPD-AA									
			Est	SE	r-value	Prox	Corr 2.5%	Corr 5%	N	P	Est	SE	r-value	Prox	Corr 2.5%	Corr 5%	N	P				
rs3386747	11719415	CGD	0.12	0.06	1.88	0.86	0.00	0.24	5937	0.22	-0.05	0.07	0.76	0.45	-0.09	0.20	2727	0.81				
rs1730891	11719396	CGD	0.18	0.09	2.01	0.84	0.01	0.26	5916	0.22	0.02	0.10	0.22	0.83	-0.16	0.20	2723	0.81				
rs1414272	11715868	Genomic	0.02	0.04	0.49	0.83	-0.07	0.11	5935	0.86	0.04	0.09	0.51	0.41	-0.12	0.21	2729	0.81				
rs4687084	11720603	Intronic	0.14	0.06	2.42	0.82	-0.03	0.26	6000	0.65	0.01	0.12	0.22	0.81	-0.22	0.20	2734	0.81				
rs1586492	11721865	Intronic	-0.03	0.05	-0.55	0.88	-0.12	0.07	5927	0.86	0.03	0.08	0.31	0.76	-0.14	0.19	2725	0.81				
rs4783791	11721210	Exon 11	0.00	0.05	-0.03	0.87	-0.11	0.10	5928	0.89	0.03	0.06	0.39	0.70	-0.10	0.19	2722	0.81				
rs1587622	11720612	Genomic	0.22	0.08	2.98	0.89	-0.08	0.28	6021	0.83	0.19	0.13	-1.02	0.73	0.44	0.16	2724	0.81				
rs1730817	11717882	Intronic	0.05	0.04	1.17	0.84	-0.03	0.13	5925	0.87	0.20	0.08	0.38	0.82	0.03	0.20	2729	0.80				
rs1523773	11715269	Intronic	0.00	0.04	0.02	0.89	-0.08	0.08	5927	0.89	0.01	0.07	0.14	0.88	-0.13	0.15	2727	0.81				
rs468684	11715868	Genomic	0.02	0.05	0.24	0.73	-0.08	0.21	5927	0.90	-0.05	0.14	-1.03	0.85	-0.43	0.11	2729	0.87				
rs181183	11720634	Intronic	0.05	0.05	1.13	0.86	-0.04	0.15	5923	0.87	0.08	0.08	1.02	0.31	-0.07	0.23	2721	0.87				
rs468684	11720634	Intronic	0.04	0.06	0.68	0.89	-0.07	0.15	5983	0.86	-0.15	0.14	-1.02	0.88	-0.48	0.10	2726	0.87				
rs468684	11720634	Intronic	0.04	0.06	0.68	0.89	-0.07	0.15	5983	0.86	-0.15	0.14	-1.02	0.88	-0.48	0.10	2726	0.87				
rs468684	11720634	Intronic	0.04	0.06	0.68	0.89	-0.07	0.15	5983	0.86	-0.15	0.14	-1.02	0.88	-0.48	0.10	2726	0.87				
rs468684	11720634	Intronic	0.04	0.06	0.68	0.89	-0.07	0.15	5983	0.86	-0.15	0.14	-1.02	0.88	-0.48	0.10	2726	0.87				
rs468684	11720634	Intronic	0.04	0.06	0.68	0.89	-0.07	0.15	5983	0.86	-0.15	0.14	-1.02	0.88	-0.48	0.10	2726	0.87				
rs468684	11720634	Intronic	0.04	0.06	0.68	0.89	-0.07	0.15	5983	0.86	-0.15	0.14	-1.02	0.88	-0.48	0.10	2726	0.87				
rs468684	11720634	Intronic	0.04	0.06	0.68	0.89	-0.07	0.15	5983	0.86	-0.15	0.14	-1.02	0.88	-0.48	0.10	2726	0.87				
rs468684	11720634	Intronic	0.04	0.06	0.68	0.89	-0.07	0.15	5983	0.86	-0.15	0.14	-1.02	0.88	-0.48	0.10	2726	0.87				
rs468684	11720634	Intronic	0.04	0.06	0.68	0.89	-0.07	0.15	5983	0.86	-0.15	0.14	-1.02	0.88	-0.48	0.10	2726	0.87				
rs468684	11720634	Intronic	0.04	0.06	0.68	0.89	-0.07	0.15	5983	0.86	-0.15	0.14	-1.02	0.88	-0.48	0.10	2726	0.87				
rs468684	11720634	Intronic	0.04	0.06	0.68	0.89	-0.07	0.15	5983	0.86	-0.15	0.14	-1.02	0.88	-0.48	0.10	2726	0.87				
rs468684	11720634	Intronic	0.04	0.06	0.68	0.89	-0.07	0.15	5983	0.86	-0.15	0.14	-1.02	0.88	-0.48	0.10	2726	0.87				
rs468684	11720634	Intronic	0.04	0.06	0.68	0.89	-0.07	0.15	5983	0.86	-0.15	0.14	-1.02	0.88	-0.48	0.10	2726	0.87				
rs468684	11720634	Intronic	0.04	0.06	0.68	0.89	-0.07	0.15	5983	0.86	-0.15	0.14	-1.02	0.88	-0.48	0.10	2726	0.87				
rs468684	11720634	Intronic	0.04	0.06	0.68	0.89	-0.07	0.15	5983	0.86	-0.15	0.14	-1.02	0.88	-0.48	0.10	2726	0.87				
rs468684	11720634	Intronic	0.04	0.06	0.68	0.89	-0.07	0.15	5983	0.86	-0.15	0.14	-1.02	0.88	-0.48	0.10	2726	0.87				
rs468684	11720634	Intronic	0.04	0.06	0.68	0.89	-0.07	0.15	5983	0.86	-0.15	0.14	-1.02	0.88	-0.48	0.10	2726	0.87				
rs468684	11720634	Intronic	0.04	0.06	0.68	0.89	-0.07	0.15	5983	0.86	-0.15	0.14	-1.02	0.88	-0.48	0.10	2726	0.87				
rs468684	11720634	Intronic	0.04	0.06	0.68	0.89	-0.07	0.15	5983	0.86	-0.15	0.14	-1.02	0.88	-0.48	0.10	2726	0.87				
rs468684	11720634	Intronic	0.04	0.06	0.68	0.89	-0.07	0.15	5983	0.86	-0.15	0.14	-1.02	0.88	-0.48	0.10	2726	0.87				
rs468684	11720634	Intronic	0.04	0.06	0.68	0.89	-0.07	0.15	5983	0.86	-0.15	0.14	-1.02	0.88	-0.48	0.10	2726	0.87				
rs468684	11720634	Intronic	0.04	0.06	0.68	0.89	-0.07	0.15	5983	0.86	-0.15	0.14	-1.02	0.88	-0.48	0.10	2726	0.87				
rs468684	11720634	Intronic	0.04	0.06	0.68	0.89	-0.07	0.15	5983	0.86	-0.15	0.14	-1.02	0.88	-0.48	0.10	2726	0.87				
rs468684	11720634	Intronic	0.04	0.06	0.68	0.89	-0.07	0.15	5983	0.86	-0.15	0.14	-1.02	0.88	-0.48	0.10	2726	0.87				
rs468684	11720634	Intronic	0.04	0.06	0.68	0.89	-0.07	0.15	5983	0.86	-0.15	0.14	-1.02	0.88	-0.48	0.10	2726	0.87				
rs468684	11720634	Intronic	0.04	0.06	0.68	0.89	-0.07	0.15	5983	0.86	-0.15	0.14	-1.02	0.88	-0.48	0.10	2726	0.87				
rs468684	11720634	Intronic	0.04	0.06	0.68	0.89	-0.07	0.15	5983	0.86	-0.15	0.14	-1.02	0.88	-0.48	0.10	2726	0.87				
rs468684	11720634	Intronic	0.04	0.06	0.68	0.89	-0.07	0.15	5983	0.86	-0.15	0.14	-1.02	0.88	-0.48	0.10	2726	0.87				
rs468684	11720634	Intronic	0.04	0.06	0.68	0.89	-0.07	0.15	5983	0.86	-0.15	0.14	-1.02	0.88	-0.48	0.10	2726	0.87				
rs468684	11720634	Intronic	0.04	0.06	0.68	0.89	-0.07	0.15	5983	0.86	-0.15	0.14	-1.02	0.88	-0.48	0.10	2726	0.87				
rs468684	11720634	Intronic	0.04	0.06	0.68	0.89	-0.07	0.15	5983	0.86	-0.15	0.14	-1.02	0.88	-0.48	0.10	2726	0.87				
rs468684	11720634	Intronic	0.04	0.06	0.68	0.89	-0.07	0.15	5983	0.86	-0.15	0.14	-1.02	0.88	-0.48	0.10	2726	0.87				
rs468684	11720634	Intronic	0.04	0.06	0.68	0.89	-0.07	0.15	5983	0.86	-0.15	0.14	-1.02	0.88	-0.48	0.10	2726	0.87				
rs468684	11720634	Intronic	0.04	0.06	0.68	0.89	-0.07	0.15	5983	0.86	-0.15	0.14	-1.02	0.88	-0.48	0.10	2726	0.87				
rs468684	11720634	Intronic	0.04	0.06	0.68	0.89	-0.07	0.15	5983	0.86	-0.15	0.14	-1.02	0.88	-0.48	0.10	2726	0.87				
rs468684	11720634	Intronic	0.04	0.06	0.68	0.89	-0.07	0.15	5983	0.86	-0.15	0.14	-1.02	0.88	-0.48	0.10	2726	0.87				
rs468684	11720634	Intronic	0.04	0.06	0.68	0.89	-0.07	0.15	5983	0.86	-0.15	0.14	-1.02	0.88	-0.48	0.10	2726	0.87				
rs468684	11720634	Intronic	0.04	0.06	0.68	0.89	-0.07	0.15	5983	0.86	-0.15	0.14	-1.02	0.88	-0.48	0.10	2726	0.87				
rs468684	11720634	Intronic	0.04	0.06	0.68	0.89	-0.07	0.15	5983	0.86	-0.15	0.14	-1.02	0.88	-0.48	0.10	2726	0.87				
rs468684	11720634	Intronic	0.04	0.06	0.68	0.89	-0.07	0.15	5983	0.86	-0.15	0.14	-1.02	0.88	-0.48	0.10	2726	0.87				
rs468684	11720634	Intronic	0.04	0.06	0.68	0.89	-0.07	0.15	5983	0.86	-0.15	0.14	-1.02	0.88	-0.48	0.10	2726	0.87				
rs468684	11720634	Intronic	0.04	0.06	0.68	0.89	-0.07	0.15	5983	0.86	-0.15	0.14	-1.02	0.88	-0.48	0.10	2726	0.87				
rs468684	11720634	Intronic	0.04	0.06	0.6																	

Supplementary Table ST2. Gene enrichment linked to subcellular localization in subject differentially expressed in patient versus control lymphoblastoids

<i>GO cellular component complete</i>	<i>N (patient)</i>	<i>N (control)</i>	<i>Expected</i>	<i>Fold</i>	<i>+/-</i>	<i>raw P</i>	<i>FDR</i>
				<i>Enrichment</i>		<i>value</i>	
<i>endoplasmic reticulum chaperone complex</i>	11	5	0.39	12.86	+	1.46E-04	6.75E-03
<i>ubiquitin conjugating enzyme complex</i>	9	4	0.32	12.58	+	7.52E-04	2.79E-02
<i>endoplasmic reticulum exit site</i>	27	7	0.95	7.34	+	1.26E-04	6.42E-03
<i>rough endoplasmic reticulum membrane</i>	29	6	1.02	5.85	+	1.08E-03	3.66E-02
<i>U2-type precatalytic spliceosome</i>	43	7	1.52	4.61	+	1.46E-03	4.65E-02
<i>melanosome</i>	106	15	3.75	4	+	1.62E-05	9.73E-04
<i>proteasome complex</i>	67	9	2.37	3.8	+	1.11E-03	3.70E-02
<i>large ribosomal subunit</i>	125	13	4.42	2.94	+	9.04E-04	3.12E-02
<i>mitochondrial protein complex</i>	272	22	9.61	2.29	+	5.52E-04	2.12E-02
<i>focal adhesion</i>	404	31	14.28	2.17	+	1.34E-04	6.51E-03
<i>extracellular exosome</i>	2097	133	74.11	1.79	+	1.03E-10	1.10E-08
<i>membrane protein complex</i>	1203	66	42.51	1.55	+	7.63E-04	2.78E-02