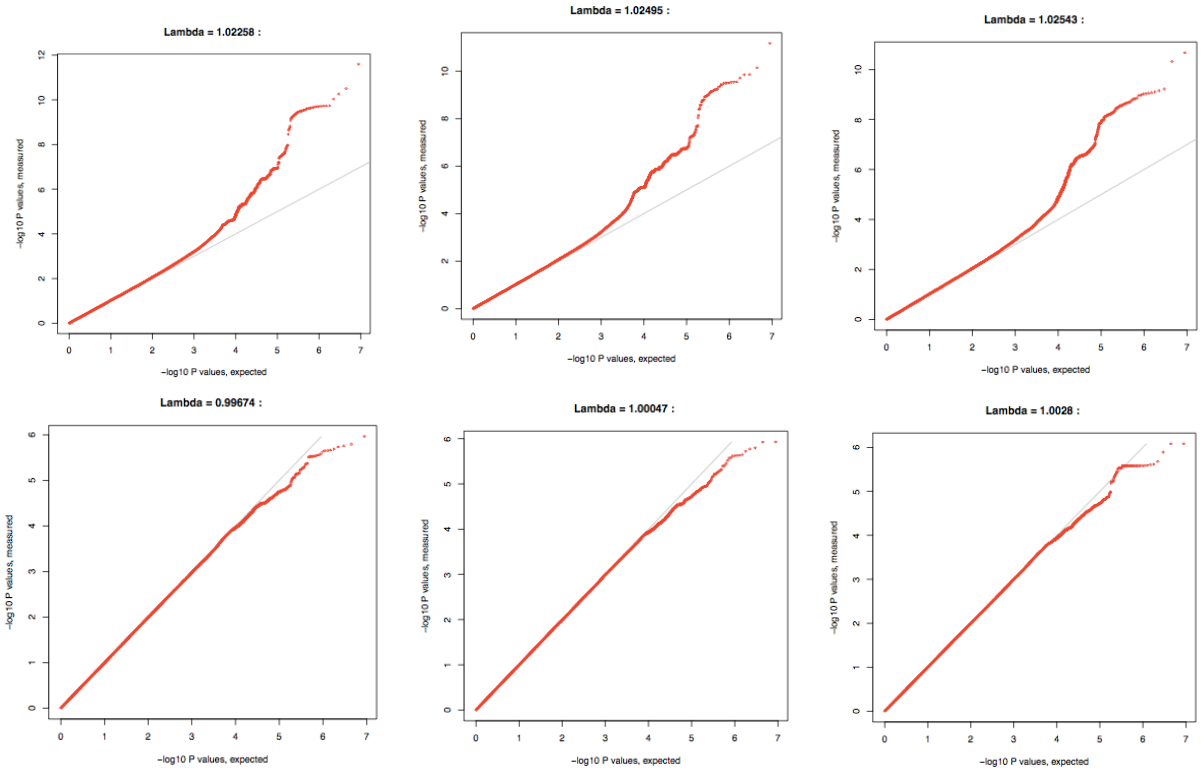
Figure 1: The first column is the QQ-plot for FEV1, the second column is the QQ-plot for FEV1 precent of predicted, the third column is the QQ-plot for the ratio of FEV1/FVC. The first row is the QQ-plots for the cohort of NHW in the COPDGene study and the second row is the QQ-plots for the NHW COPD cases in the COPDgene study. Note that the first row, all the NHW in the COPDGene study, has more significant results than the second row which is only the NHW cases. In fact, no SNPs in the cohort of only NHW COPD cases reached genome wide significance.



Figures and Tables

Table 1: Significant findings for FEV1 in NHW in the COPDGene cohort adjusting for age, gender, height, pack-years, and genetic ancestry using principal components.

# of SNPSs	CHR	Gene	min P-value	max P-value
1	1	GLT25D2	8.649e-07	8.649e-07
1	1	CACHD1	8.232e-07	8.232e-07
3	1		8.394e-10	6.244e-07
148	3	EEFSEC	1.688e-07	9.867e-07
2	3		5.923e-07	9.779e-07
1	4	HHIP	3.291e-10	3.291e-10
1	4	FAM13A	7.611e-07	7.611e-07
1	4	LIMCH1	2.207e-08	2.207e-08
1	4	NPNT	1.198e-07	1.198e-07
1	5	ANKRD55	1.238e-07	1.238e-07
1	7		3.311e-10	3.311e-10
30	15	CHRNA3	1.575e-12	8.065e-07
2	15	CHRNA3,CHRNA5	8.268e-11	8.397e-11
17	15	CHRNA5	9.814e-11	9.322e-07
12	15	CHRNB4	7.314e-10	8.115e-07
9	15	AGPHD1	2.544e-11	1e-09
41	15	IREB2	7.252e-09	8.611e-07
17	15		9.577e-11	6.128e-07
1	17		3.953e-07	3.953e-07
1	19	CACNA1A	6.81e-07	6.81e-07
1	22		3.924e-07	3.924e-07

Table 2: Significant findings for FEV1 precent of predicted in NHW in the COPDGene cohort adjusting for age, gender, height, pack-years, and genetic ancestry using principal components.

# of SNPSs	CHR	Gene	min P-value	max P-value
3	1		5.651e-09	4.865e-07
147	3	EEFSEC	1.488e-07	9.733e-07
8	3		4.327e-07	9.989e-07
29	4	HHIP	7.311e-10	8.098e-07
1	4	FAM13A	2.467e-07	2.467e-07
3	4	GSTCD	6.507e-07	7.57e-07
7	4	INTS12	6.473e-07	9.545e-07
1	4	LIMCH1	4.123e-08	4.123e-08
1	4	NPNT	2.347e-07	2.347e-07
1	7		5.437e-10	5.437e-10
1	9	KIAA0368	7.306e-07	7.306e-07
1	9		5.006e-07	5.006e-07
2	11	MMP12	7.043e-07	9.181e-07
11	11		5.702e-07	9.72e-07
2	14	RIN3	4.459e-07	7.02e-07
14	15		5.59e-10	3.548e-07
9	15	AGPHD1	7.243e-11	1.151e-08
15	15	CHRNA3	4.597e-12	3.086e-07
2	15	CHRNA3,CHRNA5	1.463e-10	1.499e-10
13	15	CHRNA5	2.161e-10	1.966e-08
7	15	CHRNB4	1.523e-09	5.491e-07
20	15	IREB2	1.503e-08	1.635e-07
1	11	HIPK3	9.693e-07	9.693e-07

Table 3: Significant findings for the ratio of FEV1/FVC in NHW in the COPDGene cohort adjusting for age, gender, height, pack-years, and genetic ancestry using principal components.

# of SNPSs	CHR	Gene	min P-value	max P-value
7	1		8.351e-09	5.468e-07
1	2	SPAG16	9.975e-09	9.975e-09
1	2		1.262e-07	1.262e-07
143	3	EEFSEC	8.086e-08	5.801e-07
2	3		1.996e-07	5.614e-07
114	4	HHIP	5.942e-10	4.574e-07
1	5	PDE4D	2.248e-07	2.248e-07
1	6	AGER	6.222e-08	6.222e-08
1	7	MAGI2	6.162e-08	6.162e-08
1	7		3.066e-09	3.066e-09
1	9	KIAA0368	4.6e-09	4.6e-09
1	9	NAA35	4.205e-08	4.205e-08
1	9	LINGO2	1.849e-07	1.849e-07
1	11	HIPK3	3.534e-09	3.534e-09
2	11	MMP12	2.623e-07	4.975e-07
13	11		2.2e-07	4.483e-07
17	14	RIN3	1.569e-07	5.73e-07
13	15		1.489e-09	5.433e-07
9	15	AGPHD1	2.709e-10	6.789e-09
13	15	CHRNA3	1.409e-11	8.894e-10
2	15	CHRNA3,CHRNA5	4.084e-10	4.26e-10
13	15	CHRNA5	6.567e-10	1.128e-08
3	15	CHRNB4	9.241e-09	1.118e-08
19	15	IREB2	1.512e-07	4.764e-07
2	15	THSD4	5.66e-08	1.341e-07
1	16	CYBA	5.096e-07	5.096e-07
1	20		3.907e-07	3.907e-07

Figure 2: Significant findings for FEV1 in AA, FEV1 in AA COPD cases, FEV1 percent of predicted in AA, and FEV1 percent of predicted in AA COPD cases in the COPDGene cohort adjusting for age, gender, height, pack-years, and genetic ancestry using principal components.

GWA of FEV1 in AA in the COPDGene study					
MARKER	**CHR**	**POSITION**	**MAF**	**P-VALUE**	**GENE**
rs3959642	22	39860589	0.9118	9.181e-08	MGAT3
rs4076943	11	11261400	0.7253	1.856e-07	
rs12586478	14	86768365	0.3519	2.557e-07	
rs12586420	14	86768364	0.3513	2.955e-07	
rs7741183	6	152641656	0.1609	3.031e-07	SYNE1
rs78507937	17	6987841	0.9816	6.052e-07	
rs17082463	6	152641391	0.8441	6.353e-07	SYNE1
rs115971165	4	25640372	0.9853	6.434e-07	
rs59071593	6	152637034	0.845	6.946e-07	SYNE1
rs138814219	19	47196646	0.9758	7.492e-07	PRKD2
rs151121608	5	62135994	0.9815	7.634e-07	
rs73783833	6	152643835	0.8438	8.309e-07	SYNE1
GWA of FEV1 in AA COPD cases in the COPDGene study					
MARKER	**CHR**	**POSITION**	**MAF**	**P-VALUE**	**GENE**
rs11878732	19	31828848	0.6446	2.185e-07	TSHZ3
rs13382275	2	965579	0.9498	2.478e-07	SNTG2
rs148684605	4	67341625	0.989	5.502e-07	
rs114120854	4	67360667	0.9894	5.887e-07	
GWA of FEV1 percent of predicted in AA in the COPDGene study					
MARKER	**CHR**	**POSITION**	**MAF**	**P-VALUE**	**GENE**
rs3959642	22	39860589	0.9118	3.122e-08	MGAT3
rs190817748	7	52139578	0.9842	1.637e-07	
rs5757673	22	39837920	0.8782	2.682e-07	
rs111588657	7	52133803	0.9827	2.82e-07	
rs138814219	19	47196646	0.9758	3.211e-07	PRKD2
rs909674	22	39859169	0.9256	3.882e-07	MGAT3
rs7286917	22	39860868	0.8983	4.109e-07	MGAT3
rs147565295	19	47195255	0.9762	4.529e-07	PRKD2
rs114855972	19	47194886	0.9762	4.569e-07	PRKD2
rs75185364	19	47192941	0.9762	4.602e-07	PRKD2
rs78507937	17	6987841	0.9816	5.163e-07	
rs2008174	22	39860130	0.9247	5.245e-07	MGAT3
rs115824942	19	47208382	0.9769	5.325e-07	PRKD2
rs114978930	2	200051731	0.9881	5.382e-07	
rs139399000	19	47204441	0.9769	5.555e-07	PRKD2
rs34971771	9	33294037	0.99	5.796e-07	NFX1
rs7741183	6	152641656	0.1609	6.078e-07	SYNE1
rs7941140	11	116996761	0.9086	6.159e-07	
rs140401531	1	7654202	0.8738	6.371e-07	CAMTA1
rs13103766	4	123517233	0.596	6.412e-07	
rs4076943	11	11261400	0.7253	6.478e-07	
rs139873132	3	157549622	0.9839	7.013e-07	
rs151060619	19	47213311	0.9763	7.529e-07	PRKD2
GWA of FEV1 percent of predicted in AA COPD cases in the COPDGene study					
MARKER	**CHR**	**POSITION**	**POSITION**	**POSITION**	**GENE**
rs11878732	19	31828848	0.6446	2.303e-07	TSHZ3
rs11183289	12	46421749	0.7923	4.235e-07	
rs1353531	19	31846907	0.817	6.412e-07	
rs56144287	11	120504567	0.959	7.147e-07	
rs79229131	11	120503216	0.9592	8.195e-07	
rs11183296	12	46426737	0.7916	8.298e-07	
rs74888189	11	120500718	0.9592	8.518e-07	
rs13382275	2	965579	0.9498	9.085e-07	SNTG2

Figure 3: Significant findings for FEV1/FVC in AA, and FEV1/FVC in AA COPD cases in the COPDGene cohort.

FEV1/FVC in AA in the COPDGene study

MARKER	CHR	POSITION	MAF	P-VALUE	GENE
rs73326661	5	163767331	0.981	1.307e-08	
rs11174267	12	62386600	0.1427	5.995e-08	FAM19A2
rs118084537	11	70090706	0.9888	6.901e-08	
rs12815303	12	62387183	0.8603	7.707e-08	FAM19A2
rs12817007	12	62387282	0.8602	8.232e-08	FAM19A2
rs12817011	12	62387287	0.8603	8.234e-08	FAM19A2
rs183770498	2	205900875	0.9666	1.98e-07	PARD3B
rs17189216	8	120448932	0.968	2.651e-07	
rs1585518	8	120475238	0.9645	2.842e-07	
rs138607199	13	68268012	0.9893	3.543e-07	
rs148342344	13	68263279	0.9892	3.568e-07	
rs73780158	5	100592094	0.9796	3.659e-07	
rs141318698	13	68234959	0.9891	3.753e-07	
rs141008343	13	68309045	0.9894	3.817e-07	
rs73838658	4	105887308	0.9877	4.15e-07	
rs1025561	10	80387684	0.6955	4.355e-07	
rs74341662	4	105879194	0.9878	4.497e-07	
rs2593149	10	80390267	0.6945	4.628e-07	
rs73838652	4	105871450	0.9893	4.744e-07	
rs73838654	4	105874544	0.9893	4.747e-07	
rs73838655	4	105874586	0.9893	4.747e-07	
rs56235007	4	105873783	0.9893	4.757e-07	
rs73838653	4	105871725	0.9893	4.759e-07	
rs144046596	6	117332600	0.985	4.976e-07	
rs73838651	4	105867915	0.989	5.277e-07	
rs148246786	15	58101983	0.9742	5.424e-07	
rs147410223	8	23507379	0.7832	5.454e-07	
rs7164035	15	58102241	0.9734	6.852e-07	
rs56804048	6	120475584	0.9897	7.166e-07	
rs7941140	11	116996761	0.9086	7.268e-07	
rs72877580	4	98629499	0.6529	7.297e-07	STPG2
rs184991195	9	76177179	0.9876	7.836e-07	
rs1434432	10	80396850	0.6275	8.001e-07	
rs1585775	3	101999125	0.02451	8.301e-07	
rs72890850	4	98537103	0.5695	9.215e-07	STPG2
rs12642926	4	98489368	0.6905	9.686e-07	C4orf37

FEV1/FVC in AA COPD cases in the COPDGene study

MARKER	CHR	POSITION	MAF	P-VALUE	GENE
rs562188	10	120744955	0.5944	1.26E-007	
rs189669683	9	16810445	0.9843	1.388e-07	BNC2
rs192452148	6	38355305	0.9837	1.646e-07	BTBD9
rs114407411	6	38351112	0.9838	1.798e-07	BTBD9
rs17492699	18	25480514	0.924	3.41e-07	
rs150713181	6	38339532	0.9835	3.617e-07	BTBD9
rs186211928	5	43741553	0.965	4.643e-07	
rs150081574	10	63565352	0.9838	4.77e-07	
rs144585579	5	43744145	0.9651	5.06e-07	
rs191814357	5	43745422	0.9651	5.085e-07	
rs185720825	5	43745762	0.9651	5.108e-07	
rs140263876	5	43746544	0.9652	5.17e-07	
rs151142406	5	43751766	0.9653	5.434e-07	
rs114693035	5	43753718	0.9653	5.536e-07	
rs146358354	5	43754102	0.9653	5.555e-07	
rs6017235	20	42620592	0.4736	6.467e-07	TOX2
rs34289708	16	24095374	0.9603	6.477e-07	PRKCB
rs12929627	16	24094977	0.9603	6.516e-07	PRKCB
rs76434282	5	43732906	0.9644	6.526e-07	
rs150379724	5	43722555	0.9647	6.931e-07	
rs72946119	2	215158266	0.9551	8e-07	SPAG16
rs149945008	5	43756459	0.9659	8.477e-07	
rs144969515	5	43756930	0.9659	8.558e-07	
rs10439273	2	215148115	0.0397	8.667e-07	SPAG16
rs35526040	16	24093337	0.9593	8.829e-07	PRKCB
rs114493850	5	43757779	0.9657	8.9e-07	
rs10476890	5	147548263	0.7485	8.959e-07	
rs7706711	5	43760717	0.966	9.054e-07	
rs80059051	5	43761712	0.966	9.165e-07	
rs181783266	6	20030605	0.9876	9.179e-07	
rs182876247	5	43758962	0.9652	9.601e-07	
rs116599402	5	43765675	0.9661	9.661e-07	
rs79580180	5	43767435	0.9661	9.903e-07	

Figure 4: For the ECLIPSE study, the first column is the QQ-plot for FEV1, the second column is the QQ-plot for FEV1 precent of predicted, the third column is the QQ-plot for the ratio of FEV1/FVC. The first row is the QQ-plots for the cohort of NHW in the ECLIPSE study and the second row is the QQ-plots for the NHW cases in the ECLIPSE study.

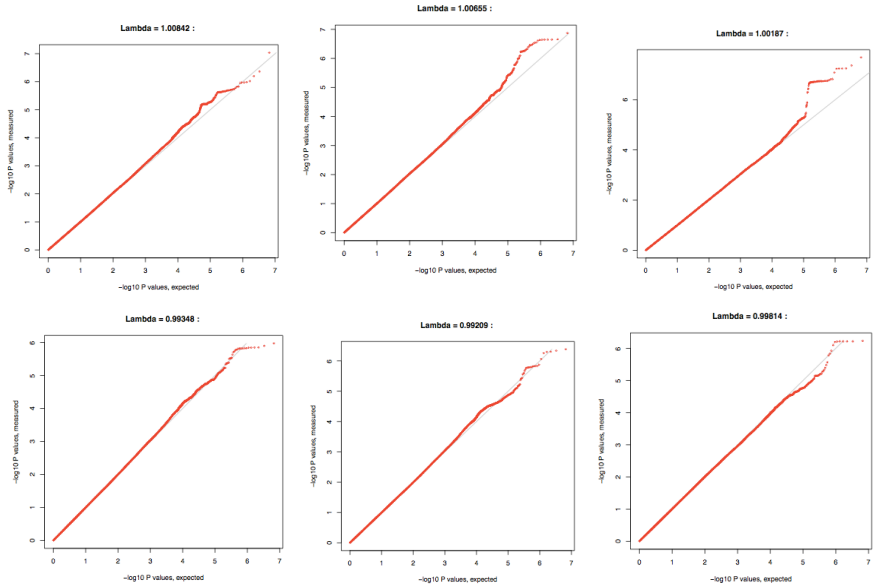


Figure 5: For the GenKOLS study, The first column is for FEV1, the second column is for FEV1 precent of predicted, the third column is for the ratio of FEV1/FVC. The first row is for the cohort of NHW in the GenKOLS study and the second row is for the NHW cases in the GenKOLS study.

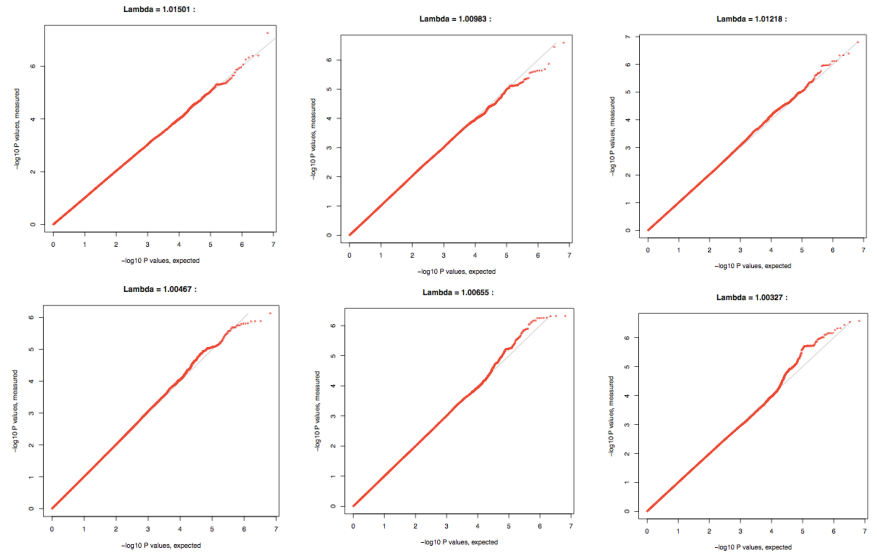


Figure 6: Results of interest for the GWA meta-analysis for FEV1 in NHW and AA subjects in the COPDGene, ECLIPSE and GenKOLS studies.

	MarkerName	chr	bp	maf	P.value	Direction	HetISq	annot	Effect
161	rs10863398	1	218588279	0.88	8.99e-09	++++	0.00	TGFB2(0.0)	0.07
166	rs1108581	9	136505241	0.19	9.69e-09	—-	0.00	DBH(0.0)	-0.06
196	rs12461383	19	41370338	0.53	3.49e-08	++++	-11.70	CYP2A7(11.0)	0.07
200	rs7547759	1	218639589	0.07	4.71e-08	++++	0.00	TGFB2(21.0)	0.08
204	rs7526672	1	218645873	0.93	5.05e-08	—-	0.00	TGFB2(27.0)	-0.08
206	rs626750	11	102720945	0.82	6.21e-08	++++	0.00	MMP3(6.0)	0.06
212	rs12461964	19	41341229	0.50	7.22e-08	++++	-53.60	CYP2A6(8.0)	0.06
217	rs586701	11	102724730	0.83	7.68e-08	—-	0.00	MMP12(8.0)	-0.06
227	rs11709725	3	127857933	0.88	1.21e-07	—-	-6.80	EEFSEC(14.0)	-0.07
228	rs17047804	1	218582778	0.89	1.21e-07	—-	0.00	TGFB2(0.0)	-0.07
237	rs2955083	3	127961178	0.88	1.26e-07	—-	-14.60	EEFSEC(0.0)	-0.07
238	rs12913260	15	79071095	0.59	1.33e-07	—-	0.00	ADAMTS7(0.0)	-0.06
240	rs12048582	1	218593037	0.79	1.40e-07	++++	-13.90	TGFB2(0.0)	0.06
244	rs11715394	3	127893564	0.88	1.53e-07	—-	-24.00	EEFSEC(0.0)	-0.07
249	rs2999089	3	127935159	0.88	1.75e-07	++++	-22.60	EEFSEC(0.0)	0.07
256	rs654600	11	102729174	0.83	1.90e-07	—-	0.00	MMP12(4.0)	-0.06
269	rs2999090	3	127931340	0.12	2.73e-07	—-	-11.70	EEFSEC(0.0)	-0.07
274	rs35804055	3	127826579	0.88	2.85e-07	—-	-13.90	RUVBL1(0.0)	-0.06
285	rs7100689	10	82222178	0.75	3.34e-07	+-++	54.40	TSPAN14(0.0)	0.06
292	rs6783253	3	127851561	0.88	3.90e-07	++++	2.70	RUVBL1(8.0)	0.06
297	rs1342586	1	218597859	0.21	4.07e-07	++++	-43.60	TGFB2(0.0)	0.06
298	rs12409794	1	108584103	0.91	4.07e-07	++++	10.90	VAV3-AS1(46.0)	0.09
299	rs10482796	1	218605635	0.79	4.10e-07	—-	-29.50	TGFB2(0.0)	-0.06
300	rs13077790	3	127882658	0.88	4.13e-07	++++	12.70	EEFSEC(0.0)	0.06
301	rs13077913	3	127882604	0.88	4.16e-07	++++	12.80	EEFSEC(0.0)	0.06
303	rs13071740	3	127881568	0.88	4.23e-07	++++	12.50	EEFSEC(0.0)	0.06
304	rs34817706	3	127861058	0.88	4.24e-07	++++	6.00	EEFSEC(11.0)	0.06
308	rs35450021	1	218656286	0.95	4.53e-07	++++	0.00	TGFB2(38.0)	0.09
312	rs6797834	3	127856400	0.88	4.69e-07	++++	4.00	RUVBL1(13.0)	0.06
317	rs6788497	3	127848388	0.88	4.79e-07	++++	3.70	RUVBL1(5.0)	0.06
319	rs11714619	3	127850076	0.88	4.83e-07	++++	5.80	RUVBL1(7.0)	0.06
324	rs6656288	1	218666429	0.95	5.22e-07	—-	0.00	TGFB2(48.0)	-0.09
326	rs35515217	3	127813811	0.88	5.26e-07	++++	-12.40	RUVBL1(0.0)	0.06
327	rs34689870	3	127860479	0.89	5.26e-07	—-	-10.60	EEFSEC(11.0)	-0.06
328	rs11714052	3	127814457	0.88	5.26e-07	++++	-12.90	RUVBL1(0.0)	0.06
332	rs13095660	3	127848156	0.88	5.58e-07	++++	-3.10	RUVBL1(5.0)	0.06
335	rs2687723	3	127865559	0.88	5.64e-07	—-	9.30	EEFSEC(6.0)	-0.06
339	rs1317681	1	218575202	0.16	5.86e-07	++++	0.00	TGFB2(0.0)	0.06
340	rs11709066	3	127874912	0.88	5.87e-07	++++	14.00	EEFSEC(0.0)	0.06
341	rs11716941	3	127875374	0.88	5.87e-07	—-	14.00	EEFSEC(0.0)	-0.06
342	rs7171578	15	79067922	0.61	5.89e-07	—-	0.00	ADAMTS7(0.0)	-0.07
343	rs7937	19	41302706	0.42	5.91e-07	—-	41.50	MIA-RAB4B(0.0)	-0.04
344	rs12023953	1	218622639	0.79	5.91e-07	—-	-38.70	TGFB2(4.0)	-0.05
345	rs6439116	3	127849067	0.88	5.93e-07	—-	-2.20	RUVBL1(6.0)	-0.06
350	rs35347185	3	127854527	0.88	6.29e-07	++++	2.20	RUVBL1(11.0)	0.06
360	rs1993484	10	82222698	0.75	6.70e-07	—-	47.00	TSPAN14(0.0)	-0.05
363	rs13062252	3	127828631	0.88	6.91e-07	—-	0.10	RUVBL1(0.0)	-0.06
364	rs7171916	15	79067951	0.61	7.06e-07	++++	0.00	ADAMTS7(0.0)	0.06
367	rs7010805	8	144976720	0.52	7.27e-07	—-	0.00	PLEC(12.0)	-0.05
370	rs2811416	3	127991938	0.88	7.49e-07	++++	-23.40	EEFSEC(0.0)	0.07

Figure 7: Results of interest for the GWA meta-analysis for FEV1 in only NHW subjects in the COPDGene, ECLIPSE and GenKOLS studies.

	MarkerName	chr	bp	maf	P.value	Direction	HetISq	annot	Effect
122	rs12461383	19	41370338	0.53	8.21e-09	+++	0.00	CYP2A7(11.0)	0.08
129	rs7937	19	41302706	0.42	1.51e-08	—	0.00	MIA-RAB4B(0.0)	-0.06
152	rs12461964	19	41341229	0.50	2.61e-08	+++	0.00	CYP2A6(8.0)	0.07
165	rs7100689	10	82222178	0.75	3.47e-08	+++	36.70	TSPAN14(0.0)	0.07
178	rs7086627	10	82220597	0.73	7.96e-08	+++	23.70	TSPAN14(0.0)	0.06
184	rs1993484	10	82222698	0.75	1.07e-07	—	31.70	TSPAN14(0.0)	-0.06
193	rs7664805	4	106843958	0.91	1.49e-07	—	35.60	NPNT(0.0)	-0.16
194	rs11709725	3	127857933	0.88	1.51e-07	—	0.00	EEFSEC(14.0)	-0.09
202	rs7098414	10	82214586	0.72	1.90e-07	—	13.70	TSPAN14(0.0)	-0.06
204	rs2811520	3	128012277	0.88	2.15e-07	—	-20.10	EEFSEC(0.0)	-0.08
205	rs6771646	3	128034535	0.89	2.19e-07	—	-15.50	EEFSEC(0.0)	-0.08
211	rs2811524	3	127999955	0.88	2.45e-07	—	-16.80	EEFSEC(0.0)	-0.08
240	rs2343306	10	82230146	0.75	3.62e-07	++-	38.00	TSPAN14(0.0)	0.06
243	rs1108581	9	136505241	0.19	3.77e-07	—	0.00	DBH(0.0)	-0.07
244	rs2811518	3	128013645	0.88	3.81e-07	—	-6.50	EEFSEC(0.0)	-0.08
246	rs2811519	3	128012876	0.88	3.90e-07	+++	-7.30	EEFSEC(0.0)	0.08
248	rs2811387	3	128015178	0.88	3.94e-07	—	-6.20	EEFSEC(0.0)	-0.08
249	rs2811392	3	128023976	0.88	3.98e-07	—	6.10	EEFSEC(0.0)	-0.08
251	rs2811522	3	128011423	0.88	4.04e-07	+++	-7.40	EEFSEC(0.0)	0.08
252	rs2037965	3	128025044	0.89	4.07e-07	—	5.80	EEFSEC(0.0)	-0.08
253	rs2811393	3	128023999	0.89	4.07e-07	+++	5.80	EEFSEC(0.0)	0.08
254	rs2811523	3	128011397	0.88	4.07e-07	+++	-7.30	EEFSEC(0.0)	0.08
256	rs6798749	3	128056897	0.89	4.15e-07	+++	5.90	EEFSEC(0.0)	0.08
258	rs6794591	3	128031219	0.89	4.18e-07	+++	5.70	EEFSEC(0.0)	0.08
259	rs6805582	3	128029008	0.89	4.18e-07	+++	5.70	EEFSEC(0.0)	0.08
260	rs6805621	3	128029204	0.89	4.18e-07	+++	5.70	EEFSEC(0.0)	0.08
262	rs2955101	3	128009612	0.88	4.24e-07	+++	-7.30	EEFSEC(0.0)	0.08
263	rs11706826	3	128032991	0.89	4.25e-07	+++	5.50	EEFSEC(0.0)	0.08
264	rs11706852	3	128032887	0.89	4.25e-07	+++	5.50	EEFSEC(0.0)	0.08
265	rs11706908	3	128033048	0.89	4.25e-07	+++	5.50	EEFSEC(0.0)	0.08
266	rs11706304	3	128050614	0.89	4.34e-07	—	5.20	EEFSEC(0.0)	-0.08
267	rs11710704	3	128047236	0.89	4.34e-07	+++	5.20	EEFSEC(0.0)	0.08
269	rs11710627	3	128047009	0.89	4.37e-07	+++	5.30	EEFSEC(0.0)	0.08
270	rs16844002	3	128053487	0.11	4.39e-07	+++	5.00	EEFSEC(0.0)	0.08
271	rs7373998	3	128008223	0.88	4.42e-07	+++	-7.40	EEFSEC(0.0)	0.08
273	rs2811391	3	128022368	0.89	4.55e-07	+++	5.80	EEFSEC(0.0)	0.08
274	rs2811397	3	128027237	0.89	4.55e-07	—	5.80	EEFSEC(0.0)	-0.08
275	rs6439124	3	128007466	0.88	4.68e-07	+++	-7.20	EEFSEC(0.0)	0.08
276	rs2999036	3	128020701	0.89	4.93e-07	—	7.80	EEFSEC(0.0)	-0.08
279	rs4593050	3	128004531	0.88	5.11e-07	+++	-6.30	EEFSEC(0.0)	0.08
280	rs6765233	3	128002850	0.88	5.19e-07	+++	-8.20	EEFSEC(0.0)	0.08
283	rs7374227	3	128001515	0.88	5.41e-07	—	-8.20	EEFSEC(0.0)	-0.08
284	rs11709611	3	128067275	0.88	5.42e-07	—	5.20	EEFSEC(0.0)	-0.08
285	rs11721213	3	128067441	0.88	5.45e-07	+++	5.30	EEFSEC(0.0)	0.08
287	rs2811388	3	128018447	0.88	5.52e-07	+++	-0.00	EEFSEC(0.0)	0.08
289	rs7374952	3	128001367	0.88	5.60e-07	+++	-8.30	EEFSEC(0.0)	0.08
295	rs7177699	15	79089734	0.46	5.70e-07	+++	0.00	ADAMTS7(0.0)	0.05
296	rs2811390	3	128021481	0.88	5.70e-07	+++	2.70	EEFSEC(0.0)	0.08
298	rs2955094	3	127976923	0.88	5.83e-07	+++	-14.40	EEFSEC(0.0)	0.08
299	rs2811486	3	127920075	0.88	5.94e-07	—	-34.70	EEFSEC(0.0)	-0.08

Figure 8: Results of interest for the GWA meta-analysis for FEV1 percent of predicted in NHW and AA subjects in the COPDGene, ECLIPSE and GenKOLS studies.

	MarkerName	chr	bp	maf	P.value	Direction	HetISq	annot	Effect
146	rs626750	11	102720945	0.82	6.12e-09	++++	0.00	MMP3(6.0)	2.19
153	rs586701	11	102724730	0.83	8.41e-09	—-	0.00	MMP12(8.0)	-2.18
195	rs1108581	9	136505241	0.19	3.06e-08	—-	0.00	DBH(0.0)	-1.89
209	rs10863398	1	218588279	0.88	3.99e-08	++++	0.00	TGFB2(0.0)	2.20
215	rs654600	11	102729174	0.83	4.50e-08	—-	0.00	MMP12(4.0)	-2.04
220	rs12048582	1	218593037	0.79	5.23e-08	++++	-2.10	TGFB2(0.0)	2.02
231	rs12913260	15	79071095	0.59	6.15e-08	—-	0.00	ADAMTS7(0.0)	-2.10
233	rs737693	11	102726142	0.88	7.78e-08	—-	-59.70	MMP12(7.0)	-2.63
236	rs17368659	11	102742761	0.88	8.81e-08	++++	-56.00	MMP12(0.0)	2.63
238	rs28381684	11	102737192	0.88	9.57e-08	—-	-56.70	MMP12(0.0)	-2.63
239	rs1342586	1	218597859	0.21	1.01e-07	++++	-40.70	TGFB2(0.0)	1.97
240	rs674546	11	102730639	0.83	1.05e-07	—-	0.00	MMP12(2.0)	-1.97
242	rs17361668	11	102720344	0.88	1.09e-07	++++	-63.70	MMP3(6.0)	2.65
243	rs11715394	3	127893564	0.88	1.10e-07	—-	-44.80	EEFSEC(0.0)	-2.37
245	rs2955083	3	127961178	0.88	1.16e-07	—-	-32.10	EEFSEC(0.0)	-2.38
247	rs17368582	11	102738075	0.88	1.27e-07	—-	-62.50	MMP12(0.0)	-2.62
248	rs660599	11	102729757	0.83	1.29e-07	++++	0.00	MMP12(3.0)	1.95
249	rs2276109	11	102745791	0.88	1.30e-07	—-	-50.90	MMP12(0.0)	-2.60
250	rs2999089	3	127935159	0.88	1.31e-07	++++	-43.60	EEFSEC(0.0)	2.36
256	rs10482796	1	218605635	0.79	1.50e-07	—-	-21.20	TGFB2(0.0)	-1.92
257	rs2999090	3	127931340	0.12	1.56e-07	—-	-34.40	EEFSEC(0.0)	-2.33
259	rs11709725	3	127857933	0.88	1.60e-07	—-	3.40	EEFSEC(14.0)	-2.30
261	rs662558	11	102718695	0.82	1.62e-07	—-	0.00	MMP3(4.0)	-1.99
262	rs7937	19	41302706	0.42	1.65e-07	—-	40.40	MIA-RAB4B(0.0)	-1.54
268	rs12461383	19	41370338	0.53	1.78e-07	++++	-17.30	CYP2A7(11.0)	2.21
270	rs17368814	11	102748695	0.12	1.92e-07	—-	0.00	MMP12(2.0)	-2.55
273	rs2811416	3	127991938	0.88	1.95e-07	++++	0.00	EEFSEC(0.0)	2.59
275	rs6783253	3	127851561	0.88	1.99e-07	++++	-6.30	RUVBL1(8.0)	2.15
279	rs35804055	3	127826579	0.88	2.05e-07	—-	-18.60	RUVBL1(0.0)	-2.16
280	rs7547759	1	218639589	0.07	2.07e-07	++++	0.00	TGFB2(21.0)	2.72
283	rs12023953	1	218622639	0.79	2.08e-07	—-	-32.10	TGFB2(4.0)	-1.91
286	rs34817706	3	127861058	0.88	2.16e-07	++++	-3.10	EEFSEC(11.0)	2.15
287	rs7526672	1	218645873	0.93	2.16e-07	—-	0.00	TGFB2(27.0)	-2.72
289	rs6788497	3	127848388	0.88	2.21e-07	++++	-2.80	RUVBL1(5.0)	2.21
290	rs6797834	3	127856400	0.88	2.29e-07	++++	-5.40	RUVBL1(13.0)	2.14
298	rs34689870	3	127860479	0.89	2.39e-07	—-	-14.20	EEFSEC(11.0)	-2.22
300	rs13077790	3	127882658	0.88	2.45e-07	++++	5.70	EEFSEC(0.0)	2.13
301	rs13077913	3	127882604	0.88	2.45e-07	++++	5.70	EEFSEC(0.0)	2.13
302	rs13071740	3	127881568	0.88	2.46e-07	++++	5.50	EEFSEC(0.0)	2.13
303	rs644885	11	102728612	0.83	2.47e-07	++++	-57.40	MMP12(4.0)	1.92
304	rs11714619	3	127850076	0.88	2.49e-07	++++	-2.60	RUVBL1(7.0)	2.13
306	rs17047804	1	218582778	0.89	2.53e-07	—-	0.00	TGFB2(0.0)	-2.18
308	rs13062252	3	127828631	0.88	2.54e-07	—-	-13.20	RUVBL1(0.0)	-2.11
310	rs11709066	3	127874912	0.88	2.61e-07	++++	6.00	EEFSEC(0.0)	2.12
312	rs11716941	3	127875374	0.88	2.61e-07	—-	6.00	EEFSEC(0.0)	-2.12
313	rs615098	11	102720678	0.18	2.65e-07	++++	-32.50	MMP3(6.0)	1.82
314	rs17282209	3	127715196	0.88	2.67e-07	—-	0.00	KBTBD12(8.0)	-2.72
316	rs2687723	3	127865559	0.88	2.71e-07	—-	1.20	EEFSEC(6.0)	-2.12
319	rs4846480	1	218598469	0.74	2.81e-07	—-	0.00	TGFB2(0.0)	-1.64
321	rs35347185	3	127854527	0.88	2.91e-07	++++	-9.00	RUVBL1(11.0)	2.16

Figure 9: Results of interest for the GWA meta-analysis for FEV1 percent of predicted in only NHW subjects in the COPDGene, ECLIPSE and GenKOLS studies.

	MarkerName	chr	bp	maf	P.value	Direction	HetISq	annot	Effect
123	rs7937	19	41302706	0.42	6.55e-09	—	-97.60	MIA-RAB4B(0.0)	-1.95
161	rs12461383	19	41370338	0.53	3.54e-08	+++	0.00	CYP2A7(11.0)	2.61
169	rs7664805	4	106843958	0.91	5.52e-08	—	25.20	NPNT(0.0)	-5.58
175	rs2811520	3	128012277	0.88	6.48e-08	—	-58.90	EEFSEC(0.0)	-2.78
194	rs6771646	3	128034535	0.89	9.95e-08	—	-61.30	EEFSEC(0.0)	-2.83
203	rs2811518	3	128013645	0.88	1.40e-07	—	-44.50	EEFSEC(0.0)	-2.72
204	rs2811519	3	128012876	0.88	1.43e-07	+++	-43.90	EEFSEC(0.0)	2.71
205	rs2811387	3	128015178	0.88	1.47e-07	—	-43.00	EEFSEC(0.0)	-2.71
206	rs2811522	3	128011423	0.88	1.48e-07	+++	-44.00	EEFSEC(0.0)	2.71
207	rs2811523	3	128011397	0.88	1.50e-07	+++	-43.80	EEFSEC(0.0)	2.71
208	rs2811524	3	127999955	0.88	1.55e-07	—	-35.70	EEFSEC(0.0)	-2.68
209	rs2955101	3	128009612	0.88	1.56e-07	+++	-44.00	EEFSEC(0.0)	2.71
210	rs11709725	3	127857933	0.88	1.56e-07	—	0.00	EEFSEC(14.0)	-2.96
211	rs2644899	19	41302949	0.73	1.60e-07	—	0.00	RAB4B-EGLN2(0.0)	-1.96
212	rs7373998	3	128008223	0.88	1.61e-07	+++	-43.80	EEFSEC(0.0)	2.70
213	rs6798749	3	128056897	0.89	1.67e-07	+++	-29.90	EEFSEC(0.0)	2.71
214	rs6439124	3	128007466	0.88	1.69e-07	+++	-43.30	EEFSEC(0.0)	2.70
218	rs6765233	3	128002850	0.88	1.81e-07	+++	-44.30	EEFSEC(0.0)	2.69
219	rs11709611	3	128067275	0.88	1.81e-07	—	-24.20	EEFSEC(0.0)	-2.71
220	rs4593050	3	128004531	0.88	1.81e-07	+++	-42.00	EEFSEC(0.0)	2.69
221	rs11721213	3	128067441	0.88	1.82e-07	+++	-24.10	EEFSEC(0.0)	2.71
223	rs2811392	3	128023976	0.88	1.84e-07	—	-27.50	EEFSEC(0.0)	-2.71
225	rs2811486	3	127920075	0.88	1.85e-07	—	-76.10	EEFSEC(0.0)	-2.73
228	rs2811393	3	128023999	0.89	1.88e-07	+++	-28.20	EEFSEC(0.0)	2.70
229	rs2037965	3	128025044	0.89	1.89e-07	—	-28.30	EEFSEC(0.0)	-2.70
230	rs7374227	3	128001515	0.88	1.89e-07	—	-44.20	EEFSEC(0.0)	-2.69
231	rs6805582	3	128029008	0.89	1.89e-07	+++	-28.60	EEFSEC(0.0)	2.70
232	rs6794591	3	128031219	0.89	1.89e-07	+++	-28.80	EEFSEC(0.0)	2.70
233	rs6805621	3	128029204	0.89	1.90e-07	+++	-28.60	EEFSEC(0.0)	2.70
234	rs11706852	3	128032887	0.89	1.91e-07	+++	-29.10	EEFSEC(0.0)	2.70
235	rs11706826	3	128032991	0.89	1.91e-07	+++	-29.10	EEFSEC(0.0)	2.70
236	rs11706908	3	128033048	0.89	1.91e-07	+++	-29.20	EEFSEC(0.0)	2.70
237	rs7374952	3	128001367	0.88	1.91e-07	+++	-44.00	EEFSEC(0.0)	2.68
238	rs11706304	3	128050614	0.89	1.93e-07	—	-29.80	EEFSEC(0.0)	-2.70
239	rs16844002	3	128053487	0.11	1.93e-07	+++	-29.80	EEFSEC(0.0)	2.70
240	rs11710704	3	128047236	0.89	1.93e-07	+++	-29.80	EEFSEC(0.0)	2.70
241	rs11710627	3	128047009	0.89	1.94e-07	+++	-29.80	EEFSEC(0.0)	2.70
242	rs2811391	3	128022368	0.89	2.02e-07	+++	-28.00	EEFSEC(0.0)	2.70
243	rs12461964	19	41341229	0.50	2.03e-07	+++	0.00	CYP2A6(8.0)	2.09
244	rs2811397	3	128027237	0.89	2.03e-07	—	-28.40	EEFSEC(0.0)	-2.70
245	rs2811525	3	127999430	0.88	2.04e-07	+++	-43.40	EEFSEC(0.0)	2.68
246	rs2811388	3	128018447	0.88	2.06e-07	+++	-33.40	EEFSEC(0.0)	2.70
247	rs2811381	3	127997912	0.88	2.11e-07	+++	-43.70	EEFSEC(0.0)	2.67
248	rs2955094	3	127976923	0.88	2.12e-07	+++	-51.60	EEFSEC(0.0)	2.68
249	rs2999082	3	127956188	0.87	2.19e-07	+++	-57.50	EEFSEC(0.0)	2.73
250	rs2811400	3	127987867	0.88	2.21e-07	—	-84.50	EEFSEC(0.0)	-2.74
251	rs2999083	3	127954434	0.88	2.21e-07	—	-52.20	EEFSEC(0.0)	-2.67
252	rs2811526	3	127995718	0.88	2.21e-07	+++	-44.10	EEFSEC(0.0)	2.67
254	rs2811373	3	127997429	0.88	2.26e-07	—	-39.60	EEFSEC(0.0)	-2.67
255	rs2811527	3	127994604	0.88	2.26e-07	+++	-44.30	EEFSEC(0.0)	2.67

Figure 10: The first table is all significant findings for the GWA meta-analysis for FEV1 percent of predicted in NHW and AA COPD cases in the COPDGene, ECLIPSE and GenKOLS studies. The second table is all significant findings for the GWA meta-analysis for FEV1 percent of predicted in NHW COPD cases in the COPDGene, ECLIPSE and GenKOLS studies. The third table is all significant findings for the GWA meta-analysis for FEV1 in NHW and AA COPD cases in the COPDGene, ECLIPSE and GenKOLS studies. The forth table is all significant findings for the GWA meta-analysis for FEV1 in NHW and AA COPD cases in the COPDGene, ECLIPSE and GenKOLS studies.

	MarkerName	chr	bp	maf	P.value	Direction	HetISq	annot	Effect
1	rs2656065	15	78750549	0.37	2.29e-07	—-	0.00	IREB2(0.0)	-1.62
2	rs17486278	15	78867482	0.63	4.16e-07	++++	0.00	CHRNA5(0.0)	1.60
3	rs2009746	15	78754102	0.64	4.16e-07	++++	0.00	IREB2(0.0)	1.63
4	rs8031948	15	78816057	0.63	5.41e-07	—-	0.00	AGPHD1(0.0)	-1.62
5	rs4243084	15	78911672	0.63	5.51e-07	—-	0.00	CHRNA3(0.0)	-1.61
6	rs887357	12	3474645	0.17	6.72e-07	++++	6.00	PRMT8(15.0)	2.05
7	rs551517	9	113636793	0.72	6.90e-07	—-	0.00	LPAR1(0.0)	-1.74
8	rs2656052	15	78740932	0.63	7.57e-07	++++	0.00	IREB2(0.0)	1.55
9	rs2568494	15	78740964	0.37	8.31e-07	—-	0.00	IREB2(0.0)	-1.54
10	rs17483548	15	78730313	0.64	8.96e-07	—-	0.00	IREB2(0.0)	-1.63
11	rs17484524	15	78772676	0.64	9.54e-07	++++	0.00	IREB2(0.0)	1.63
12	rs17405217	15	78731149	0.64	9.71e-07	—-	0.00	IREB2(0.0)	-1.63
13	rs17484235	15	78761414	0.64	9.76e-07	++++	0.00	IREB2(0.0)	1.63
14	rs1504550	15	78766250	0.64	9.90e-07	++++	0.00	IREB2(0.0)	1.63

	MarkerName	chr	bp	maf	P.value	Direction	HetISq	annot	Effect
1	rs2656065	15	78750549	0.37	4.93e-07	—	0.00	IREB2(0.0)	-1.70
2	rs2656052	15	78740932	0.63	8.48e-07	+++	0.00	IREB2(0.0)	1.66
3	rs9536463	13	54132247	0.95	8.64e-07	—	0.00	LINC00558(257.0)	-3.77
4	rs11858836	15	78783277	0.64	8.70e-07	—	0.00	IREB2(0.0)	-1.67
5	rs8040868	15	78911181	0.43	8.93e-07	+++	0.00	CHRNA3(0.0)	1.64
6	rs2568494	15	78740964	0.37	9.37e-07	—	0.00	IREB2(0.0)	-1.65

	MarkerName	chr	bp	maf	P.value	Direction	HetISq	annot	Effect
1	rs9536463	13	54132247	0.95	5.01e-07	-+—	-57.30	LINC00558(257.0)	-0.11
2	rs2656065	15	78750549	0.37	6.26e-07	—-	0.00	IREB2(0.0)	-0.05

	MarkerName	chr	bp	maf	P.value	Direction	HetISq	annot	Effect
1	rs9536463	13	54132247	0.95	2.76e-07	—	-98.50	LINC00558(257.0)	-0.12

Figure 11: Results of interest for the GWA meta-analysis for the ratio of FEV1/FVC in NHW and AA subjects in the COPDGene, ECLIPSE and GenKOLS studies.

	MarkerName	chr	bp	maf	P.value	Direction	HetISq	annot	Effect
126	rs737693	11	102726142	0.88	3.29e-10	—-	0.00	MMP12(7.0)	-0.02
129	rs17361668	11	102720344	0.88	3.66e-10	++++	0.00	MMP3(6.0)	0.02
131	rs28381684	11	102737192	0.88	4.22e-10	—-	0.00	MMP12(0.0)	-0.02
134	rs17368659	11	102742761	0.88	6.11e-10	++++	0.00	MMP12(0.0)	0.02
135	rs17368582	11	102738075	0.88	6.91e-10	—-	0.00	MMP12(0.0)	-0.02
136	rs2276109	11	102745791	0.88	7.19e-10	—-	0.00	MMP12(0.0)	-0.02
139	rs626750	11	102720945	0.82	1.27e-09	++++	0.00	MMP3(6.0)	0.01
142	rs17368814	11	102748695	0.12	1.62e-09	—-	0.00	MMP12(2.0)	-0.02
143	rs586701	11	102724730	0.83	1.65e-09	—-	0.00	MMP12(8.0)	-0.01
159	rs754388	14	93115410	0.82	5.64e-09	—-	-63.70	RIN3(0.0)	-0.01
161	rs12048582	1	218593037	0.79	6.28e-09	++++	0.00	TGFB2(0.0)	0.01
166	rs1342586	1	218597859	0.21	8.50e-09	++++	0.00	TGFB2(0.0)	0.01
170	rs10482796	1	218605635	0.79	1.07e-08	—-	0.00	TGFB2(0.0)	-0.01
172	rs12023953	1	218622639	0.79	1.14e-08	—-	0.00	TGFB2(4.0)	-0.01
175	rs17368890	11	102752600	0.93	1.29e-08	—-	0.00	MMP12(6.0)	-0.02
191	rs654600	11	102729174	0.83	2.75e-08	—-	-44.40	MMP12(4.0)	-0.01
193	rs4846480	1	218598469	0.74	2.81e-08	—-	0.00	TGFB2(0.0)	-0.01
197	rs1890995	1	218604678	0.74	2.95e-08	++++	0.00	TGFB2(0.0)	0.01
199	rs4846478	1	218598328	0.74	3.15e-08	—-	0.00	TGFB2(0.0)	-0.01
200	rs4846479	1	218598410	0.26	3.16e-08	++++	0.00	TGFB2(0.0)	0.01
201	rs1940938	11	102774844	0.88	3.19e-08	++++	0.00	MMP12(29.0)	0.02
202	rs494963	11	102715826	0.88	3.25e-08	++++	0.00	MMP3(1.0)	0.02
204	rs900	1	218614905	0.74	3.40e-08	—-	0.00	TGFB2(0.0)	-0.01
207	rs10429950	1	218624533	0.73	3.65e-08	—-	0.00	TGFB2(6.0)	-0.01
209	rs12913260	15	79071095	0.59	3.73e-08	—-	0.00	ADAMTS7(0.0)	-0.01
211	rs17047804	1	218582778	0.89	3.95e-08	—-	0.00	TGFB2(0.0)	-0.01
213	rs7549303	1	218627321	0.74	4.21e-08	—-	0.00	TGFB2(9.0)	-0.01
220	rs35629566	14	93072317	0.83	5.03e-08	—-	-61.70	RIN3(0.0)	-0.02
225	rs7526672	1	218645873	0.93	5.56e-08	—-	0.00	TGFB2(27.0)	-0.02
228	rs7515360	1	218626620	0.74	6.37e-08	++++	0.00	TGFB2(8.0)	0.01
230	rs622912	1	218670357	0.50	6.45e-08	+-++	29.00	TGFB2(52.0)	0.01
235	rs1473526	1	218620747	0.26	6.53e-08	—-	0.00	TGFB2(2.0)	-0.01
237	rs7547759	1	218639589	0.07	6.88e-08	++++	0.00	TGFB2(21.0)	0.02
240	rs10746379	1	218575887	0.87	7.23e-08	—-	0.00	TGFB2(0.0)	-0.01
241	rs615098	11	102720678	0.18	7.32e-08	++++	1.70	MMP3(6.0)	0.01
242	rs6657698	1	218623275	0.74	7.32e-08	++++	-38.70	TGFB2(5.0)	0.01
246	rs674546	11	102730639	0.83	8.19e-08	—-	-6.00	MMP12(2.0)	-0.01
247	rs3009947	1	218689155	0.48	8.20e-08	++++	22.00	TGFB2(71.0)	0.01
249	rs7143806	14	93103729	0.83	8.50e-08	++++	-31.70	RIN3(0.0)	0.01
250	rs6658473	1	218600419	0.74	8.66e-08	++++	0.00	TGFB2(0.0)	0.01
251	rs1797070	1	218630201	0.74	8.80e-08	++++	0.00	TGFB2(12.0)	0.01
252	rs11632102	15	79086057	0.55	8.81e-08	—-	-21.90	ADAMTS7(0.0)	-0.01
253	rs7531382	1	218682115	0.93	8.82e-08	—-	0.00	TGFB2(64.0)	-0.02
254	rs660599	11	102729757	0.83	8.92e-08	++++	-4.10	MMP12(3.0)	0.01
255	rs17184313	14	93102251	0.17	9.17e-08	++++	-44.70	RIN3(0.0)	0.01
256	rs1690789	1	218698027	0.50	9.39e-08	-+—	31.80	TGFB2(80.0)	-0.01
259	rs10482792	1	218605461	0.74	9.76e-08	++++	0.00	TGFB2(0.0)	0.01
260	rs11639044	15	79083814	0.55	9.85e-08	—-	-42.50	ADAMTS7(0.0)	-0.01
263	rs550238	1	218690948	0.50	1.03e-07	-+—	25.30	TGFB2(72.0)	-0.01
264	rs1075472	14	93108131	0.82	1.11e-07	—-	-23.20	RIN3(0.0)	-0.01

Figure 12: Results of interest for the GWA meta-analysis for the ratio of FEV1/FVC in all NHW subjects in the COPDGene, ECLIPSE and GenKOLS studies.

	MarkerName	chr	bp	maf	P.value	Direction	HetISq	annot	Effect
152	rs622912	1	218670357	0.50	2.61e-09	+++	0.00	TGFB2(52.0)	0.01
155	rs737693	11	102726142	0.88	3.57e-09	—	0.00	MMP12(7.0)	-0.02
156	rs17361668	11	102720344	0.88	3.65e-09	+++	0.00	MMP3(6.0)	0.02
158	rs12592721	15	79099145	0.54	4.04e-09	—	0.00	ADAMTS7(0.0)	-0.01
159	rs1690789	1	218698027	0.50	4.10e-09	—	0.00	TGFB2(80.0)	-0.01
160	rs7177699	15	79089734	0.46	4.32e-09	+++	0.00	ADAMTS7(0.0)	0.01
161	rs28381684	11	102737192	0.88	4.51e-09	—	0.00	MMP12(0.0)	-0.02
163	rs11856536	15	79094325	0.54	4.87e-09	+++	0.00	ADAMTS7(0.0)	0.01
164	rs17368582	11	102738075	0.88	5.08e-09	—	0.00	MMP12(0.0)	-0.02
168	rs11634450	15	79093201	0.54	5.82e-09	+++	0.00	ADAMTS7(0.0)	0.01
169	rs7173267	15	79092750	0.54	5.82e-09	—	0.00	ADAMTS7(0.0)	-0.01
171	rs550238	1	218690948	0.50	6.10e-09	—	0.00	TGFB2(72.0)	-0.01
172	rs28610385	15	79090606	0.54	6.17e-09	—	0.00	ADAMTS7(0.0)	-0.01
173	rs10047116	1	218638291	0.52	6.32e-09	+++	0.00	TGFB2(20.0)	0.01
174	rs3009947	1	218689155	0.48	6.43e-09	+++	0.00	TGFB2(71.0)	0.01
175	rs17368659	11	102742761	0.88	6.82e-09	+++	0.00	MMP12(0.0)	0.02
176	rs11638321	15	79092183	0.55	6.89e-09	+++	0.00	ADAMTS7(0.0)	0.01
177	rs2276109	11	102745791	0.88	7.33e-09	—	0.00	MMP12(0.0)	-0.02
178	rs1690790	1	218701401	0.55	7.50e-09	—	0.00	TGFB2(83.0)	-0.01
179	rs17368814	11	102748695	0.12	8.20e-09	—	0.00	MMP12(2.0)	-0.02
180	rs3825807	15	79089111	0.54	8.42e-09	+++	0.00	ADAMTS7(0.0)	0.01
190	rs12903203	15	79084933	0.55	1.03e-08	+++	0.00	ADAMTS7(0.0)	0.01
194	rs11632102	15	79086057	0.55	1.12e-08	—	0.00	ADAMTS7(0.0)	-0.01
208	rs11639044	15	79083814	0.55	1.65e-08	—	0.00	ADAMTS7(0.0)	-0.01
214	rs796395	1	218681971	0.50	1.86e-08	—	0.00	TGFB2(64.0)	-0.01
218	rs1825087	15	79077114	0.57	1.94e-08	+++	0.00	ADAMTS7(0.0)	0.01
219	rs12899147	15	79079512	0.55	1.96e-08	+++	0.00	ADAMTS7(0.0)	0.01
220	rs2277545	15	79083591	0.55	1.96e-08	+++	0.00	ADAMTS7(0.0)	0.01
222	rs12913260	15	79071095	0.59	2.05e-08	—	0.00	ADAMTS7(0.0)	-0.01
225	rs2277546	15	79083376	0.55	2.14e-08	—	0.00	ADAMTS7(0.0)	-0.01
228	rs1994016	15	79080234	0.58	2.22e-08	—	0.00	ADAMTS7(0.0)	-0.01
230	rs11072803	15	79077878	0.57	2.43e-08	—	0.00	ADAMTS7(0.0)	-0.01
231	rs626750	11	102720945	0.82	2.48e-08	+++	0.00	MMP3(6.0)	0.02
235	rs575544	1	218643141	0.52	2.64e-08	+++	0.00	TGFB2(25.0)	0.01
236	rs4886592	15	79082547	0.55	2.74e-08	+++	0.00	ADAMTS7(0.0)	0.01
241	rs1690791	1	218645322	0.52	3.07e-08	—	0.00	TGFB2(27.0)	-0.01
242	rs586701	11	102724730	0.83	3.08e-08	—	0.00	MMP12(8.0)	-0.02
243	rs644885	11	102728612	0.83	3.08e-08	+++	0.00	MMP12(4.0)	0.02
244	rs654600	11	102729174	0.83	3.08e-08	—	0.00	MMP12(4.0)	-0.02
249	rs6697759	1	218623094	0.55	3.18e-08	—	0.00	TGFB2(5.0)	-0.01
250	rs660599	11	102729757	0.83	3.20e-08	+++	0.00	MMP12(3.0)	0.02
251	rs674546	11	102730639	0.83	3.20e-08	—	0.00	MMP12(2.0)	-0.02
252	rs623356	1	218647386	0.52	3.28e-08	+++	0.00	TGFB2(29.0)	0.01
264	rs2904220	15	79076704	0.57	3.83e-08	—	0.00	ADAMTS7(0.0)	-0.01
266	rs11072806	15	79079074	0.56	3.86e-08	—	0.00	ADAMTS7(0.0)	-0.01
267	rs615098	11	102720678	0.18	3.93e-08	+++	0.00	MMP3(6.0)	0.02
270	rs2070600	6	32151443	0.04	4.17e-08	+++	12.20	AGER(0.0)	0.03
271	rs608194	11	102744087	0.82	4.26e-08	+++	0.00	MMP12(0.0)	0.01
274	rs1764705	1	218648556	0.50	4.65e-08	—	0.00	TGFB2(30.0)	-0.01
276	rs2798631	1	218611878	0.48	4.78e-08	—	0.00	TGFB2(0.0)	-0.01

Figure 13: Results of interest for the GWA meta-analysis for the ratio of FEV1/FVC in AA and NHW COPD cases in the COPDGene, ECLIPSE and GenKOLS studies.

	MarkerName	chr	bp	maf	P.value	Direction	HetISq	annot	Effect
1	rs494963	11	102715826	0.88	5.07e-08	++++	0.00	MMP3(1.0)	0.02
3	rs655403	11	102708507	0.88	8.60e-08	++++	0.00	MMP3(0.0)	0.02
4	rs680753	11	102711581	0.88	9.98e-08	—-	0.00	MMP3(0.0)	-0.02
5	rs646910	11	102709522	0.88	1.00e-07	++++	0.00	MMP3(0.0)	0.02
6	rs476762	11	102710707	0.88	1.06e-07	++++	0.00	MMP3(0.0)	0.02
11	rs563096	11	102707366	0.88	1.93e-07	—-	0.00	WTAPP1(0.0)	-0.02
12	rs605949	11	102705747	0.88	1.94e-07	++++	0.00	WTAPP1(0.0)	0.02
13	rs525119	11	102702146	0.88	1.95e-07	—-	0.00	WTAPP1(0.0)	-0.02
14	rs593698	11	102704476	0.88	1.95e-07	++++	0.00	WTAPP1(0.0)	0.02
15	rs473238	11	102700360	0.88	1.98e-07	++++	0.00	WTAPP1(0.0)	0.02
16	rs4236709	8	32410110	0.79	2.01e-07	++++	0.00	NRG1(0.0)	0.01
17	rs553542	11	102701376	0.88	2.08e-07	—-	0.00	WTAPP1(0.0)	-0.02
23	rs595128	11	102693109	0.88	2.99e-07	++++	0.00	WTAPP1(0.0)	0.02
24	rs611705	11	102694468	0.88	2.99e-07	—-	0.00	WTAPP1(0.0)	-0.02
25	rs566125	11	102710471	0.87	3.10e-07	++++	0.00	MMP3(0.0)	0.02
26	rs564018	11	102691419	0.88	3.40e-07	++++	0.00	WTAPP1(0.0)	0.02
27	rs688258	11	102692095	0.88	3.40e-07	++++	0.00	WTAPP1(0.0)	0.02
28	rs2514560	8	96226228	0.98	3.44e-07	—-	0.00	C8orf69(0.0)	-0.04
29	rs12657392	5	78963323	0.08	3.49e-07	—-	-31.50	PAPD4(0.0)	-0.02
33	rs10465586	1	196687329	0.60	4.14e-07	—-	-38.00	CFH(0.0)	-0.01
35	rs6688272	1	196684392	0.59	4.41e-07	++++	-33.10	CFH(0.0)	0.01
37	rs6889428	5	13750975	0.63	4.49e-07	++++	0.00	DNAH5(0.0)	0.01
40	rs10922105	1	196690250	0.59	4.79e-07	—-	-14.50	CFH(0.0)	-0.01
44	rs10922104	1	196687730	0.59	5.09e-07	—-	-35.00	CFH(0.0)	-0.01
47	rs499459	11	102693186	0.88	5.27e-07	++++	0.00	WTAPP1(0.0)	0.02
48	rs2274700	1	196682947	0.59	5.52e-07	++++	-32.90	CFH(0.0)	0.01
55	rs10737680	1	196679455	0.59	6.12e-07	—-	-30.70	CFH(0.0)	-0.01
56	rs1329427	1	196704559	0.59	6.16e-07	++++	-19.00	CFH(0.0)	0.01
59	rs2401809	5	13754394	0.63	6.33e-07	—-	0.00	DNAH5(0.0)	-0.01
61	rs7823498	8	32403573	0.79	6.41e-07	++++	0.00	NRG1(0.0)	0.01
62	rs3734108	5	13753984	0.63	6.53e-07	++++	0.00	DNAH5(0.0)	0.01
64	rs7540032	1	196701284	0.41	6.82e-07	++++	-17.40	CFH(0.0)	0.01
66	rs1329428	1	196702810	0.41	6.83e-07	++++	-15.40	CFH(0.0)	0.01
67	rs6881967	5	13741163	0.30	6.90e-07	—-	0.00	DNAH5(0.0)	-0.01
68	rs1604476	5	13744084	0.61	6.92e-07	—-	0.00	DNAH5(0.0)	-0.01
69	rs7514261	1	196700914	0.59	7.10e-07	++++	-16.70	CFH(0.0)	0.01
72	rs569444	11	102707305	0.88	7.41e-07	++++	0.00	WTAPP1(0.0)	0.02
73	rs10801559	1	196704204	0.59	7.69e-07	++++	-19.10	CFH(0.0)	0.01
74	rs470530	11	102680949	0.88	7.71e-07	++++	0.00	WTAPP1(0.0)	0.02
75	rs6897741	5	13749237	0.61	7.81e-07	—-	0.00	DNAH5(0.0)	-0.01
77	rs10922106	1	196691464	0.59	8.03e-07	—-	-20.10	CFH(0.0)	-0.01
80	rs2466104	8	32410712	0.79	8.94e-07	—-	0.00	NRG1(0.0)	-0.01
81	rs1502045	5	13745719	0.39	9.29e-07	++++	0.00	DNAH5(0.0)	0.01
82	rs2401808	5	13755815	0.61	9.88e-07	++++	-59.00	DNAH5(0.0)	0.01
83	rs7535263	1	196682346	0.59	9.90e-07	++++	-20.20	CFH(0.0)	0.01

Figure 14: Results of interest for the GWA meta-analysis for the ratio of FEV1/FVC in NHW COPD cases in the COPDGene, ECLIPSE and GenKOLS studies.

	MarkerName	chr	bp	maf	P.value	Direction	HetISq	annot	Effect
5	rs494963	11	102715826	0.88	3.18e-07	+++	0.00	MMP3(1.0)	0.02
9	rs655403	11	102708507	0.88	4.94e-07	+++	0.00	MMP3(0.0)	0.02
11	rs525119	11	102702146	0.88	5.64e-07	—	0.00	WTAPP1(0.0)	-0.02
12	rs563096	11	102707366	0.88	5.64e-07	—	0.00	WTAPP1(0.0)	-0.02
13	rs593698	11	102704476	0.88	5.64e-07	+++	0.00	WTAPP1(0.0)	0.02
14	rs605949	11	102705747	0.88	5.64e-07	+++	0.00	WTAPP1(0.0)	0.02
15	rs646910	11	102709522	0.88	5.64e-07	+++	0.00	MMP3(0.0)	0.02
16	rs473238	11	102700360	0.88	5.71e-07	+++	0.00	WTAPP1(0.0)	0.02
19	rs680753	11	102711581	0.88	5.88e-07	—	0.00	MMP3(0.0)	-0.02
20	rs553542	11	102701376	0.88	6.02e-07	—	0.00	WTAPP1(0.0)	-0.02
23	rs476762	11	102710707	0.88	6.28e-07	+++	0.00	MMP3(0.0)	0.02
25	rs1329427	1	196704559	0.59	6.45e-07	+++	-22.80	CFH(0.0)	0.01
26	rs7540032	1	196701284	0.41	7.02e-07	+++	-21.40	CFH(0.0)	0.01
27	rs1329428	1	196702810	0.41	7.07e-07	+++	-18.50	CFH(0.0)	0.01
28	rs10801558	1	196699044	0.59	7.28e-07	—	-21.30	CFH(0.0)	-0.01
29	rs7514261	1	196700914	0.59	7.28e-07	+++	-21.30	CFH(0.0)	0.01
31	rs499459	11	102693186	0.88	7.73e-07	+++	0.00	WTAPP1(0.0)	0.02
32	rs595128	11	102693109	0.88	7.73e-07	+++	0.00	WTAPP1(0.0)	0.02
33	rs611705	11	102694468	0.88	7.73e-07	—	0.00	WTAPP1(0.0)	-0.02
34	rs11615433	12	123018475	0.15	7.88e-07	—	49.00	KNTC1(0.0)	-0.02
35	rs10801559	1	196704204	0.59	7.90e-07	+++	-23.10	CFH(0.0)	0.01
36	rs10922109	1	196704632	0.59	7.90e-07	+++	-23.10	CFH(0.0)	0.01
37	rs3766405	1	196695161	0.59	8.06e-07	+++	-21.40	CFH(0.0)	0.01
39	rs564018	11	102691419	0.88	8.28e-07	+++	0.00	WTAPP1(0.0)	0.02
40	rs688258	11	102692095	0.88	8.28e-07	+++	0.00	WTAPP1(0.0)	0.02
42	rs1410996	1	196696933	0.41	8.87e-07	+++	-31.60	CFH(0.0)	0.01
43	rs10922106	1	196691464	0.59	8.91e-07	—	-21.50	CFH(0.0)	-0.01
44	rs6688272	1	196684392	0.59	9.08e-07	+++	-19.70	CFH(0.0)	0.01
46	rs566125	11	102710471	0.87	9.69e-07	+++	0.00	MMP3(0.0)	0.02
47	rs4457591	1	222078600	0.45	9.71e-07	—	-47.20	DUSP10(163.0)	-0.01
49	rs10465586	1	196687329	0.60	9.85e-07	—	-21.50	CFH(0.0)	-0.01