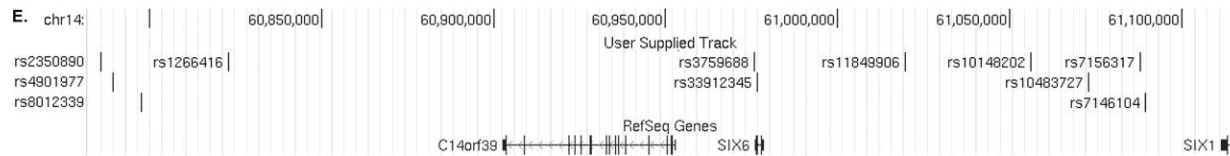
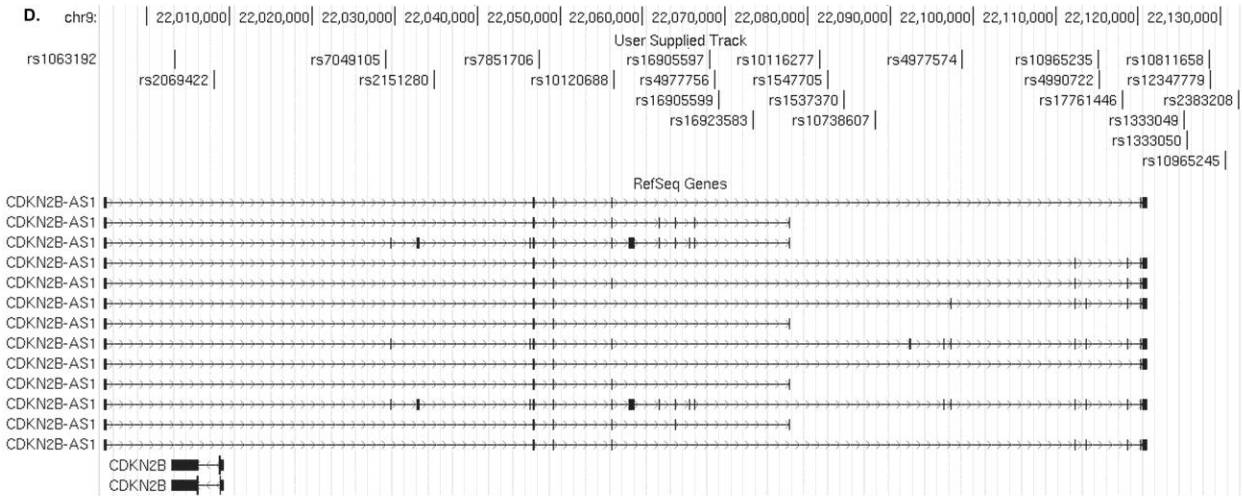
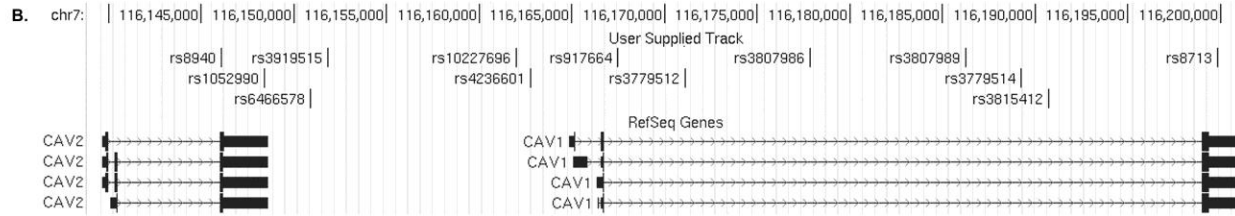
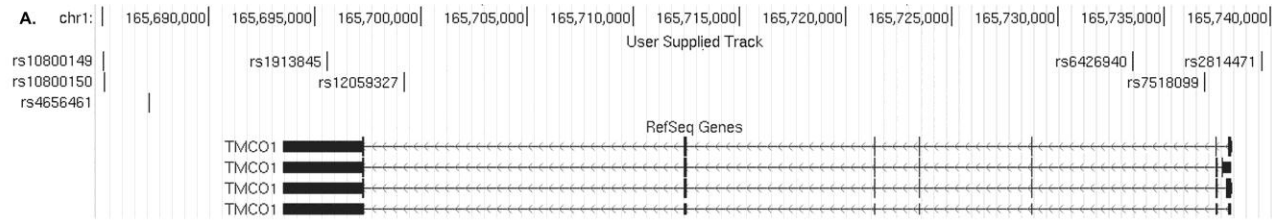


Supplemental Figure 1. Fifty seven tagging and previously reported SNPs were selected to cover the reported five genomic regions, including *TMCO1* (panel A), *CAV1/CAV2* (panel B), chromosome 8q22 intergenic region (panel C), *CDKN2B-AS1* (panel D), and *SIX1/SIX6* (panel E), in the African population (YRI). These tagging SNPs were selected using HaploView software with $r^2 > 0.6$ and MAF > 0.05. TaqMan allelic discrimination assays were employed for genotyping these 57 SNPs by use of Assays-On-Demand products with the ViiA7 Realtime PCR system with 384-well block according to the standard protocols from the manufacturer (Applied Biosystems, Foster City, CA, USA).



Supplemental Table 1. The genetic association of all 57 genotyped SNPs with POAG in the ICAARE-Glaucoma samples of African Americans and Ghanaians (West Africans).

Genomic Regions	SNP	Allele	African American (n=1150 case/999 control)				African American HPG (n=870 case/ 999 control)				African American NPG (n=280 case/999 control)				Ghanaian (n=483 case/593 control)			
			FU	FA	P	OR	FU	FA	P	OR	FU	FA	P	OR	FU	FA	P	OR
<i>TMCO1</i>	rs10800149	A	25.4	26.1	0.66	1.04 (0.89-1.21)	25.4	24.8	0.74	0.97 (0.82-1.15)	25.4	29.2	0.09	1.21 (0.97-1.51)	19.1	22.1	0.10	1.19 (0.97-1.46)
<i>TMCO1</i>	rs10800150	C	42.7	41.8	0.49	0.96 (0.85-1.08)	42.7	42.3	0.74	0.98 (0.86-1.11)	42.7	40.1	0.29	0.90 (0.75-1.09)	47.0	44.7	0.24	0.90 (0.76-1.07)
<i>TMCO1</i>	rs4656461	C	22.6	23.3	0.74	1.02 (0.89-1.18)	22.6	23.2	0.82	1.02 (0.87-1.19)	22.6	23.7	0.62	1.06 (0.85-1.32)	22.6	25.6	0.19	1.14 (0.94-1.40)
<i>TMCO1</i>	rs1913845	C	81.7	82.1	0.74	1.03 (0.88-1.20)	81.7	82.9	0.40	1.08 (0.91-1.27)	81.7	79.7	0.31	0.89 (0.71-1.12)	81.4	81.0	0.76	0.97 (0.78-1.20)
<i>TMCO1</i>	rs12059327	C	12.9	12.6	0.71	0.97 (0.80-1.16)	12.9	13.1	0.93	1.01 (0.83-1.23)	12.9	11.2	0.28	0.85 (0.63-1.15)	13.1	15.1	0.22	1.17 (0.91-1.51)
<i>TMCO1</i>	rs6426940	C	42.4	42.3	0.94	1.00 (0.89-1.13)	42.4	42.1	0.98	1.00 (0.88-1.14)	42.4	42.6	0.92	1.01 (0.84-1.22)	40.5	38.2	0.31	0.91 (0.77-1.09)
<i>TMCO1</i>	rs7518099	C	8.3	10.3	0.048	1.27 (1.00-1.62)	8.3	10.0	0.12	1.23 (0.95-1.59)	8.3	11.0	0.05	1.39 (0.99-1.93)	7.0	9.1	0.11	1.29 (0.94-1.75)
<i>TMCO1</i>	rs2814471	C	12.0	13.3	0.27	1.11 (0.93-1.32)	12.0	12.4	0.80	1.03 (0.85-1.24)	12.0	15.9	0.019	1.37 (1.05-1.77)	12.5	13.4	0.76	1.04 (0.81-1.34)
<i>CAV1/CAV2</i>	rs8940	C	81.4	79.1	0.051	0.86 (0.74-1.00)	81.4	79.2	0.08	0.86 (0.73-1.02)	81.4	78.8	0.15	0.84 (0.66-1.06)	82.3	79.4	0.10	0.83 (0.67-1.04)
<i>CAV1/CAV2</i>	rs1052990	A	61.2	58.0	0.029	0.87 (0.77-0.99)	61.2	58.2	0.06	0.88 (0.77-1.00)	61.2	57.2	0.08	0.85 (0.70-1.02)	61.3	57.8	0.11	0.87 (0.73-1.03)
<i>CAV1/CAV2</i>	rs6466578	C	19.6	18.1	0.23	0.91 (0.78-1.06)	19.6	18.7	0.52	0.95 (0.80-1.12)	19.6	16.3	0.08	0.80 (0.62-1.03)	21.4	18.8	0.19	0.86 (0.70-1.07)
<i>CAV1/CAV2</i>	rs3919515	C	38.4	37.3	0.41	0.95 (0.84-1.08)	38.4	37.3	0.44	0.95 (0.83-1.09)	38.4	37.2	0.59	0.95 (0.78-1.15)	37.4	36.2	0.56	0.95 (0.79-1.13)
<i>CAV1/CAV2</i>	rs10227696	A	18.7	20.5	0.13	1.13 (0.97-1.31)	18.7	20.2	0.20	1.11 (0.94-1.32)	18.7	21.1	0.18	1.17 (0.93-1.49)	17.3	20.3	0.09	1.21 (0.97-1.51)

Genetic Association Results for CAV1/CAV2 and CDKN2B-AS1																		
Locus	SNP	Allele	CAV1/CAV2 Association					CDKN2B-AS1 Association					Joint Analysis					
			β	SE	p	OR	95% CI	β	SE	p	OR	95% CI	β	SE	p	OR	95% CI	
CAV1/CAV2	rs4236601	A	36.2	39.5	0.020	1.16 (1.02-1.31)	36.2	39.2	0.050	1.14 (1.00-1.31)	36.2	40.7	0.05	1.21 (1.00-1.47)	37.6	41.7	0.06	1.19 (0.99-1.42)
CAV1/CAV2	rs917664	A	48.7	49.1	0.72	1.02 (0.91-1.16)	48.7	49.1	0.75	1.02 (0.90-1.16)	48.7	49.3	0.79	1.03 (0.85-1.25)	51.4	51.5	0.98	1.00 (0.84-1.19)
CAV1/CAV2	rs3779512	A	66.5	67.6	0.43	1.05 (0.93-1.20)	66.5	68.0	0.28	1.08 (0.94-1.24)	66.5	66.3	0.90	0.99 (0.81-1.21)	71.5	72.4	0.74	1.03 (0.86-1.24)
CAV1/CAV2	rs3807986	C	55.8	55.8	0.97	1.00 (0.88-1.13)	55.8	55.9	0.93	1.01 (0.88-1.15)	55.8	55.4	0.84	0.98 (0.81-1.19)	68.1	63.5	0.015	0.80 (0.66-0.96)
CAV1/CAV2	rs3807989	C	34.2	34.4	0.97	1.00 (0.88-1.13)	34.2	33.7	0.56	0.96 (0.84-1.10)	34.2	36.7	0.28	1.12 (0.92-1.36)	29.5	27.5	0.35	0.91 (0.76-1.10)
CAV1/CAV2	rs3779514	A	23.8	24.2	0.69	1.03 (0.89-1.19)	23.8	24.8	0.41	1.07 (0.92-1.24)	23.8	22.4	0.47	0.92 (0.73-1.16)	27.9	27.9	0.84	0.98 (0.80-1.20)
CAV1/CAV2	rs3815412	A	61.4	62.5	0.51	1.04 (0.92-1.18)	61.4	62.4	0.63	1.03 (0.90-1.18)	61.4	62.8	0.54	1.06 (0.88-1.29)	62.7	58.5	0.03	0.82 (0.69-0.98)
CAV1/CAV2	rs8713	A	70.7	70.9	0.85	1.01 (0.89-1.16)	70.7	70.8	0.89	1.01 (0.87-1.17)	70.7	71.2	0.79	1.03 (0.83-1.27)	70.9	67.0	0.04	0.82 (0.68-0.99)
Chr8q22	rs284489	C	63.2	62.3	0.69	0.98 (0.86-1.10)	63.2	62.6	0.92	0.99 (0.87-1.13)	63.2	61.2	0.44	0.93 (0.77-1.12)	71.6	72.2	0.66	1.04 (0.86-1.27)
CDKN2B-AS1	rs2069422	G	9.8	9.8	0.96	1.01 (0.82-1.23)	9.8	9.5	0.86	0.98 (0.79-1.22)	9.8	10.6	0.57	1.09 (0.80-1.49)	9.8	9.2	0.75	0.95 (0.71-1.28)
CDKN2B-AS1	rs7049105	A	29.6	26.0	0.009	0.84 (0.73-0.96)	29.6	25.9	0.013	0.83 (0.72-0.96)	29.6	26.3	0.12	0.85 (0.69-1.05)	25.0	25.5	0.75	1.03 (0.85-1.25)
CDKN2B-AS1	rs2151280	A	30.9	33.1	0.19	1.11 (0.95-1.29)	30.9	32.5	0.38	1.08 (0.91-1.27)	30.9	34.5	0.11	1.19 (0.96-1.48)	28.5	26.4	0.25	0.89 (0.73-1.08)
CDKN2B-AS1	rs7851706	C	87.9	89.0	0.26	1.11 (0.92-1.34)	87.9	89.1	0.24	1.13 (0.92-1.38)	87.9	88.5	0.66	1.07 (0.80-1.43)	84.9	82.1	0.06	0.80 (0.64-1.01)
CDKN2B-AS1	rs10120688	A	40.9	45.6	0.002	1.21 (1.07-1.37)	40.9	44.9	0.012	1.18 (1.04-1.35)	40.9	47.7	0.004	1.32 (1.09-1.60)	39.5	36.1	0.10	0.86 (0.72-1.03)
CDKN2B-AS1	rs16905597	A	12.2	9.9	0.010	0.78 (0.64-0.94)	12.2	9.5	0.006	0.74 (0.60-0.92)	12.2	11.0	0.38	0.88 (0.66-1.18)	15.1	16.1	0.57	1.07 (0.85-1.36)
CDKN2B-AS1	rs16905599	C	77.8	75.2	0.04	0.86 (0.75-1.00)	77.8	74.9	0.04	0.85 (0.73-0.99)	77.8	76.0	0.33	0.90 (0.72-1.12)	73.6	75.7	0.28	1.12 (0.92-1.36)

Genetic Association Analysis Results for CDKN2B-AS1																		
Locus	SNP ID	Allele	Study 1 (N=1000)				Study 2 (N=1200)				Meta-analysis (N=2200)				Additional Metrics			
			Mean	SD	OR	95% CI	Mean	SD	OR	95% CI	Mean	SD	OR	95% CI	MA Mean	MA SD	MA OR	MA 95% CI
CDKN2B-AS1	rs16923583	A	16.0	15.3	0.47	0.94 (0.80-1.11)	16.0	15.3	0.44	0.93 (0.78-1.11)	16.0	15.5	0.71	0.95 (0.73-1.24)	20.1	20.2	0.94	1.01 (0.81-1.25)
CDKN2B-AS1	rs1547705	A	75.8	77.0	0.43	1.07 (0.91-1.27)	75.8	77.4	0.33	1.10 (0.91-1.31)	75.8	76.1	0.97	1.01 (0.79-1.28)	72.1	72.2	0.89	1.01 (0.84-1.23)
CDKN2B-AS1	rs1537370	C	32.5	29.7	0.06	0.88 (0.77-1.00)	32.5	30.0	0.11	0.89 (0.77-1.03)	32.5	28.5	0.09	0.84 (0.68-1.03)	25.2	27.8	0.24	1.12 (0.93-1.36)
CDKN2B-AS1	rs10738607	C	24.2	22.7	0.32	0.92 (0.78-1.09)	24.2	21.9	0.16	0.88 (0.73-1.05)	24.2	24.5	0.82	1.03 (0.81-1.30)	19.0	18.8	0.95	0.99 (0.80-1.23)
CDKN2B-AS1	rs10965235	A	45.8	48.7	0.06	1.13 (1.00-1.27)	45.8	49.4	0.03	1.16 (1.01-1.32)	45.8	46.6	0.70	1.04 (0.86-1.25)	57.3	55.8	0.43	0.93 (0.79-1.11)
CDKN2B-AS1	rs4990722	G	84.6	85.3	0.55	1.05 (0.89-1.25)	84.6	85.0	0.65	1.04 (0.87-1.25)	84.6	86.2	0.41	1.12 (0.85-1.47)	81.5	80.9	0.79	0.97 (0.79-1.20)
CDKN2B-AS1	rs17761446	G	5.7	4.6	0.08	0.79 (0.60-1.03)	5.7	4.4	0.05	0.74 (0.55-1.00)	5.7	5.4	0.76	0.94 (0.63-1.41)	5.2	5.4	0.86	1.04 (0.70-1.53)
CDKN2B-AS1	rs1333049	C	25.7	23.5	0.10	0.89 (0.78-1.02)	25.7	23.0	0.07	0.87 (0.75-1.01)	25.7	25.2	0.78	0.97 (0.78-1.20)	18.5	19.0	0.68	1.05 (0.84-1.31)
CDKN2B-AS1	rs1333050	C	79.9	81.1	0.37	1.07 (0.92-1.24)	79.9	81.1	0.43	1.07 (0.91-1.26)	79.9	81.1	0.53	1.08 (0.85-1.36)	89.6	91.6	0.10	1.28 (0.95-1.73)
CDKN2B-AS1	rs10811658	A	43.0	46.8	0.04	1.17 (1.01-1.35)	43.0	46.5	0.07	1.16 (0.99-1.35)	43.0	47.6	0.08	1.21 (0.98-1.49)	43.8	45.5	0.48	1.07 (0.90-1.27)
CDKN2B-AS1	rs12347779	C	93.2	93.3	0.97	1.00 (0.78-1.27)	93.2	93.4	0.89	1.02 (0.79-1.32)	93.2	92.9	0.73	0.94 (0.65-1.35)	94.1	92.8	0.28	0.82 (0.57-1.18)
CDKN2B-AS1	rs10965245	A	18.6	15.5	0.006	0.80 (0.68-0.94)	18.6	14.5	0.0005	0.73 (0.61-0.87)	18.6	18.6	0.97	1.00 (0.78-1.27)	19.6	21.2	0.38	1.10 (0.89-1.35)
CDKN2B-AS1	rs2383208	A	82.3	81.0	0.24	0.91 (0.78-1.06)	82.3	81.4	0.42	0.94 (0.79-1.10)	82.3	79.8	0.18	0.85 (0.67-1.08)	80.8	82.1	0.47	1.09 (0.87-1.35)
CDKN2B-AS1	rs1063192	C	7.7	6.4	0.15	0.85 (0.67-1.06)	7.7	6.8	0.39	0.90 (0.70-1.15)	7.7	5.2	0.06	0.68 (0.46-1.01)	0	0.2	0.98	N/A
CDKN2B-AS1	rs4977756	C	35.3	33.0	0.16	0.91 (0.81-1.04)	35.3	33.9	0.41	0.95 (0.83-1.08)	35.3	30.4	0.04	0.82 (0.67-1.00)	34.6	36.3	0.44	1.07 (0.90-1.29)
CDKN2B-AS1	rs10116277	G	10.2	9.9	0.88	0.99 (0.81-1.20)	10.2	10.2	0.89	1.02 (0.82-1.26)	10.2	9.0	0.43	0.88 (0.64-1.21)	0.6	1.0	0.23	1.82 (0.68-4.85)

<i>CDKN2B-AS1</i>	rs4977574	A	80.0	80.9	0.48	1.05 (0.91-1.22)	80.0	81.2	0.41	1.07 (0.91-1.26)	80.0	79.9	0.99	1.00 (0.80-1.26)	87.1	88.1	0.48	1.10 (0.85-1.41)
<i>SIX1/SIX6</i>	rs2350890	C	57.3	58.9	0.31	1.07 (0.94-1.20)	57.3	58.7	0.42	1.06 (0.93-1.21)	57.3	59.6	0.36	1.09 (0.90-1.32)	57.6	58.7	0.65	1.04 (0.87-1.24)
<i>SIX1/SIX6</i>	rs4901977	A	58.1	58.3	0.99	1.00 (0.88-1.13)	58.1	58.0	0.79	0.98 (0.86-1.12)	58.1	59.2	0.67	1.04 (0.86-1.26)	63.3	65.9	0.28	1.10 (0.92-1.32)
<i>SIX1/SIX6</i>	rs8012339	A	82.2	81.8	0.56	0.95 (0.82-1.12)	82.2	81.4	0.31	0.92 (0.77-1.09)	82.2	83.3	0.64	1.06 (0.83-1.36)	78.3	77.8	0.69	0.96 (0.78-1.17)
<i>SIX1/SIX6</i>	rs1266416	C	53.5	52.4	0.50	0.96 (0.85-1.08)	53.5	53.0	0.74	0.98 (0.86-1.12)	53.5	50.7	0.24	0.90 (0.74-1.08)	44.5	47.8	0.14	1.14 (0.96-1.35)
<i>SIX1/SIX6</i>	rs3759688	A	22.0	22.1	0.88	1.01 (0.86-1.20)	22.0	21.9	0.97	1.00 (0.83-1.20)	22.0	22.6	0.63	1.06 (0.83-1.35)	29.4	28.6	0.86	0.98 (0.82-1.18)
<i>SIX1/SIX6</i>	rs11849906	G	7.3	6.8	0.43	0.91 (0.72-1.15)	7.3	7.7	0.77	1.04 (0.81-1.32)	7.3	3.9	0.006	0.53 (0.34-0.83)	8.4	10.1	0.18	1.23 (0.91-1.67)
<i>SIX1/SIX6</i>	rs10148202	A	15.8	14.3	0.13	0.88 (0.74-1.04)	15.8	14.5	0.18	0.88 (0.74-1.06)	15.8	13.9	0.24	0.85 (0.65-1.12)	17.0	17.3	0.72	1.04 (0.84-1.30)
<i>SIX1/SIX6</i>	rs7156317	A	65.5	65.9	0.73	1.02 (0.90-1.16)	65.5	66.2	0.61	1.04 (0.90-1.19)	65.5	65.0	0.87	0.98 (0.81-1.20)	58.0	59.7	0.52	1.06 (0.89-1.26)
<i>SIX1/SIX6</i>	rs7146104	A	3.7	4.4	0.17	1.24 (0.91-1.68)	3.7	4.3	0.23	1.22 (0.88-1.69)	3.7	4.7	0.25	1.32 (0.82-2.11)	6.8	6.5	0.70	0.93 (0.66-1.32)
<i>SIX1/SIX6</i>	rs10483727	C	12.4	11.9	0.67	0.96 (0.78-1.18)	12.4	11.9	0.97	0.99 (0.77-1.28)	12.4	11.8	0.66	0.92 (0.64-1.32)	1.2	1.4	0.76	1.13 (0.52-2.44)
<i>SIX1/SIX6</i>	rs33912345	A	12.5	11.2	0.25	0.88 (0.71-1.10)	12.5	11.1	0.91	0.99 (0.77-1.27)	12.5	11.6	0.57	0.90 (0.62-1.30)	1.1	1.1	0.93	0.96 (0.42-2.23)

SNP: single nucleotide polymorphism; POAG: primary open-angle glaucoma; ICAARE-Glaucoma: International Consortium of African Ancestry REsearch in Glaucoma; HPG: high pressure glaucoma; NPG: normal pressure glaucoma; AA: African American; FU: Allele frequency in controls; FA: allele frequency in POAG cases; P: p value from the logistic regression using additive model with the justification of age and gender; OR: odds ratio with 95% confidence interval in the parenthesis.