Supplementary Table A1   Clinical characteristics of the subjects

	Initial study		Replication 1		Replication 2		Replication 3	
	Case	Control	Case	Control	Case	Control	Case	Control
Sex (M:F)	505 : 244[†]	267 : 285[‡]	302 : 147	555 : 410	206 : 104	148 : 69[§]	20 : 12	110 : 58
Age (year)*	60.1 ± 0.4	62.4 ± 0.5	64.7 ± 0.4	64.8 ± 0.3	64.5 ± 0.6	65.0 ± 0.7	60.9 ± 1.7	60.4 ± 0.7
BMI (kg^2/m^2)*	23.7 ± 0.2	23.6 ± 0.2	23.5 ± 0.2	23.8 ± 0.1	22.3 ± 0.2	23.4 ± 0.3	24.9 ± 0.5	23.9 ± 0.3
HbA1c (%)*	7.6 ± 0.2	7.6 ± 0.1	8.0 ± 0.1	8.1 ± 0.1	6.1 ± 0.1	6.8 ± 0.1	7.7 ± 0.2	7.4 ± 0.1
SBP (mmHg)*	140 ± 1	132 ± 1	141 ± 1	134 ± 1	143 ± 1	121 ± 1	138 ± 3	137 ± 1
DBP (mmHg)*	76 ± 0.5	74 ± 0.5	77 ± 0.5	77 ± 0.4	73 ± 1	69 ± 1	77 ± 2	77 ± 1
Duration (year)*	19.3 ± 0.4	15.3 ± 0.4	Not available	Not available	21.7 ± 0.9	16 ± 0.4	14.5 ± 1.6	12.8 ± 0.7

*Data are mean ± SE. †5 unknown. ‡6 unknown. §7 unknown.

Supplementary Table A2   Association of SNPs in *KCNQ1* with diabetic nephropathy in the initial study

SNP	allele	Case			Control		
		MAF	11/12/22	P_{HWE}	MAF	11/12/22	P_{HWE}
rs1057128	G > A	0.293	318/269/53	0.712	0.289	212/166/37	0.583
rs234886	C > G	0.195	475/224/30	0.581	0.191	330/164/15	0.317
rs234872	T > C	0.338	277/287/71	0.796	0.328	190/183/46	0.846
rs2237886	C > T	0.190	482/226/27	0.936	0.178	338/159/11	0.121
rs234878	A > G	0.268	339/255/43	0.594	0.284	211/171/32	0.744
rs2074200	C > G	0.209	455/228/36	0.288	0.224	306/167/29	0.331
rs234881	C > T	0.2088	469/225/41	0.046	0.2090	324/162/26	0.331
rs163171	C > T	0.401	258/335/117	0.639	0.388	190/243/76	0.906
rs163170	A > G	0.420	248/354/131	0.811	0.406	179/253/82	0.637
rs151290	C > A	0.405	261/334/124	0.335	0.389	186/250/73	0.453
rs2074196	G > T	0.389	275/324/116	0.213	0.374	193/245/66	0.392
rs2074197	C > T	0.391	277/339/117	0.436	0.373	196/246/67	0.457
rs11602964	C > T	0.393	238/299/101	0.661	0.379	157/205/56	0.394
rs2237888	C > T	0.357	308/323/99	0.330	0.362	209/233/68	0.810
rs123381	G > A	0.160	523/185/25	0.091	0.194	336/152/23	0.279
rs234844	G > C	0.220	451/234/43	0.090	0.239	294/184/29	0.976
rs163177	T > C	0.457	218/339/156	0.264	0.438	164/233/102	0.250
rs2237892	C > T	0.345	310/335/84	0.650	0.312	246/211/54	0.385
rs163183	C > T	0.036	346/25/1	0.450	0.071	288/39/4	0.052
rs163184	T > G	0.470	201/369/157	0.611	0.466	147/252/112	0.838
rs2283228	A > C	0.372	288/331/103	0.616	0.333	236/203/67	0.029
rs234857	T > C	0.176	438/179/23	0.379	0.194	270/129/16	0.904
rs2237895	A > C	0.410	254/353/123	0.985	0.409	183/236/91	0.327
rs2299620	C > T	0.374	292/355/103	0.766	0.330	257/227/69	0.092
rs2237896	G > A	0.351	311/346/89	0.628	0.307	270/225/57	0.322
rs2237897	C > T	0.333	331/336/81	0.756	0.277	294/210/48	0.235
rs458069	G > C	0.278	336/254/51	0.757	0.294	207/173/36	0.986
rs2283229	G > A	0.466	198/384/149	0.135	0.471	140/260/110	0.601
rs433052	C > T	0.2391	425/267/42	0.994	0.2392	302/175/35	0.167
rs2237898	A > C	0.313	341/320/68	0.569	0.302	250/212/48	0.753
rs2237899	C > T	0.417	237/379/116	0.081	0.403	189/233/90	0.218
rs2237900	G > A	0.322	328/321/71	0.558	0.331	219/232/50	0.313
rs10798	G > A	0.144	471/160/13	0.891	0.165	296/109/15	0.216

MAF, minor allele frequency; 11, homozygous of major allele; 12, heterozygous; 22, homozygous of minor allele; OR, odds ratio; CI, confidence interval; HWE, Hardy-Weinberg equilibrium.

Supplementary Table A3   Association of SNPs in *KCNQ1* with diabetic nephropathy in the initial study

SNP	Risk allele	unadjusted		adjusted*	
		P	OR (95% CI)	P	OR(95%CI)
rs1057128	A	0.851		0.955	
rs234886	G	0.793		0.627	
rs234872	C	0.646		0.934	
rs2237886	T	0.431		0.864	
rs234878	A	0.413		0.657	
rs2074200	A	0.370		0.820	
rs234881	C	0.993		0.878	
rs163171	T	0.529		0.635	
rs163170	G	0.467		0.710	
rs151290	A	0.435		0.561	
rs2074196	T	0.462		0.556	
rs2074197	T	0.377		0.426	
rs11602964	T	0.534		0.616	
rs2237888	C	0.804		0.951	
rs123381	G	0.036	1.24 (1.02–1.52)	0.012	1.39 (1.08–1.79)
rs234844	G	0.280		0.247	
rs163177	C	0.375		0.296	
rs2237892	T	0.104		0.870	
rs163183	C	0.014	1.78 (1.13–2.81)	0.328	1.32 (0.76–2.11)
rs163184	G	0.844		0.643	
rs2283228	C	0.054		0.038	
rs234857	T	0.297		0.126	
rs2237895	C	0.982		0.86	
rs2299620	T	0.022	1.21 (1.03–1.42)	0.074	1.20 (0.98–1.46)
rs2237896	A	0.019	1.22 (1.03–1.44)	0.082	1.20 (0.98–1.47)
rs2237897	T	0.0027	1.30 (1.09–1.54)	0.008	1.33 (1.08–1.63)
rs458069	G	0.405		0.226	
rs2283229	G	0.837		0.899	
rs433052	C	0.993		0.882	
rs2237898	C	0.566		0.793	
rs2237899	T	0.481		0.780	
rs2237900	G	0.605		0.858	
rs10798	G	0.192		0.275	

*adjusted for age, sex, BMI, and duration of type 2 diabetes. OR, odds ratio; CI, confidence interval.

Supplementary Table A4   Association of haplotypes in *KCNQ1* with diabetic nephropathy

Haplotype	Case frequency	Control frequency	P value
Within block			
rs2237892/rs163184 (Block 4)			
C/G	0.467	0.466	0.967
T/T	0.342	0.309	0.081
C/T	0.189	0.224	0.035
T/G	0.002	0.001	0.781
rs2283228/rs234857 (Block 5)			
A/T	0.457	0.477	0.317
C/T	0.369	0.330	0.047
A/C	0.172	0.189	0.275
C/C	0.003	0.003	0.560
rs2299620/rs2237896 (Block 6)			
C/G	0.619	0.669	0.010
T/A	0.351	0.296	0.0041
T/G	0.026:	0.029	0.719
C/A	0.004	0.006	0.375
Beyond Blocks			
rs2237892/rs2237895/rs2237897			
C/C/C	0.405	0.404	0.972
T/A/T	0.296	0.246	0.0058
C/A/C	0.213	0.260	0.0055
T/A/C	0.041	0.060	0.026
C/A/T	0.038	0.024	0.047
T/C/C	0.005	0.004	0.589
C/C/T	0.002	0.001	0.725