Figure S1. Results of the system sensitivity. Capillary electrophoresis typing with (A) 10, (B) 1, (C) 0.1 and (D) 0.01 ng of input DNA template.

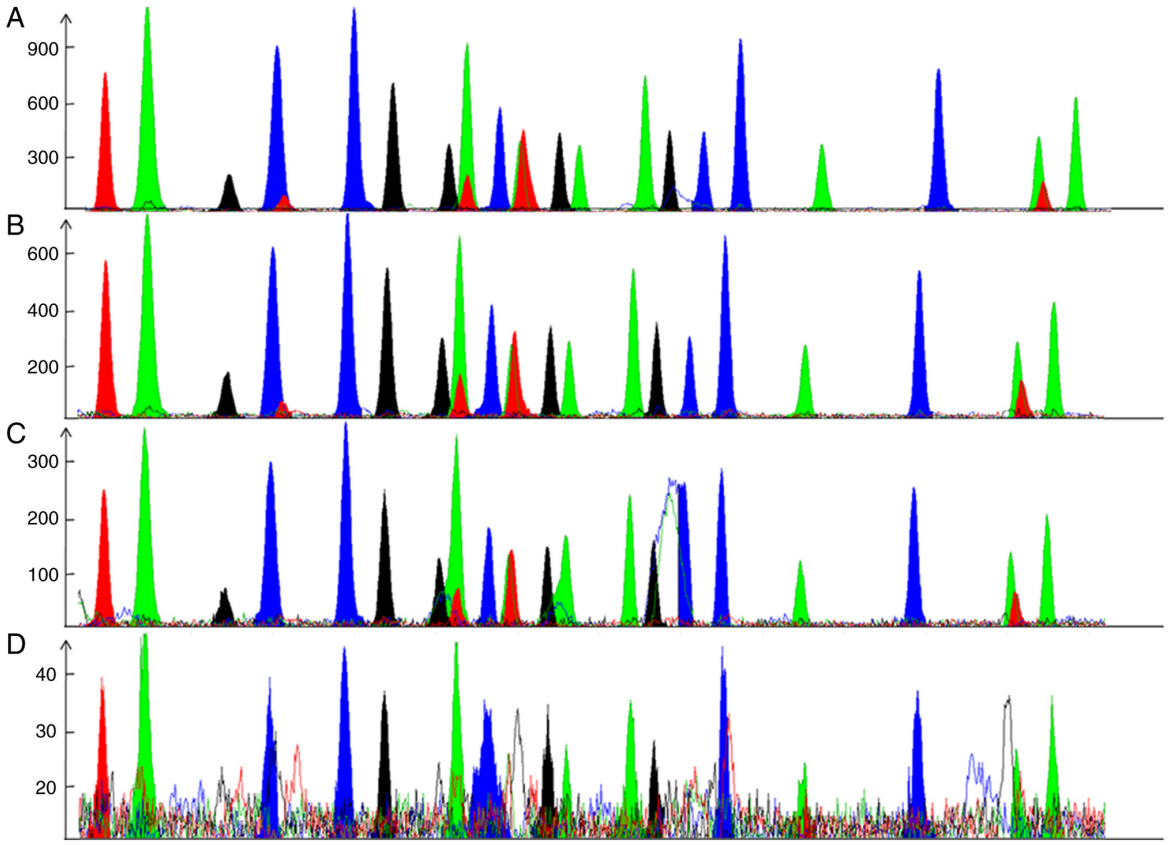

Figure S2. Results of Sanger sequencing using random samples. These results were consistent with those of the SNaPshot method.

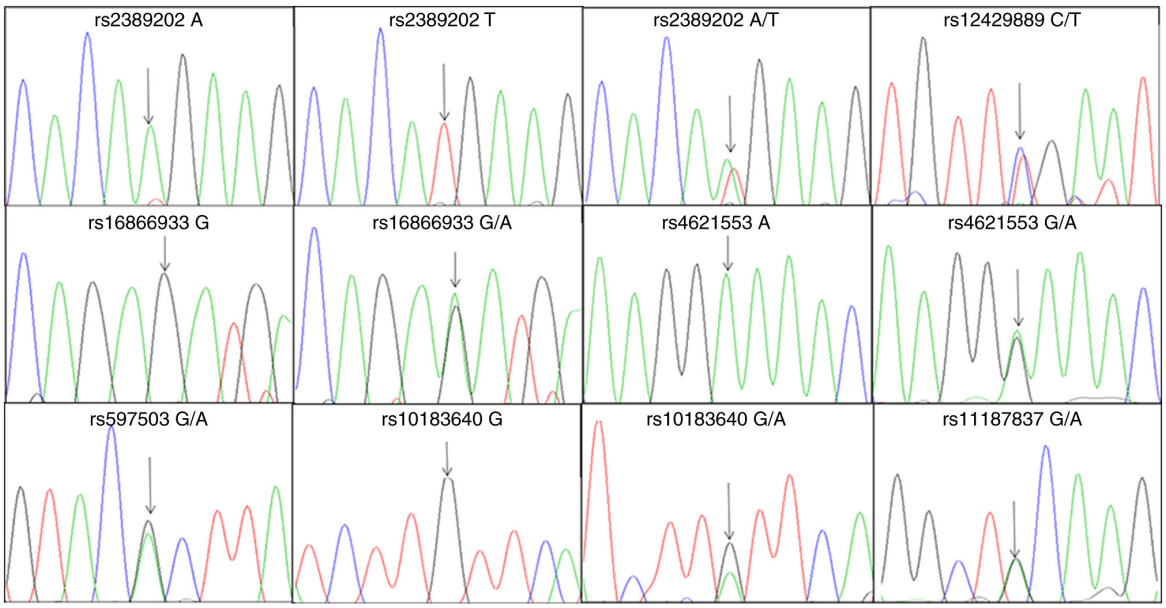

Table SI. Clinical characteristics of the 198 samples in this study.

Subject no.	Sex	Age, years	Condition/health status	Group	Province of birth
1	M	55	CHD	CHD	Shanxi
2	M	64	CHD	CHD	Shanxi
3	M	40	CHD	CHD	Shanxi
4	M	46	CHD	CHD	Shanxi
5	M	51	CHD	CHD	Shanxi
6	M	57	CHD	CHD	Shanxi
7	M	59	CHD	CHD	Shanxi
8	M	53	CHD	CHD	Shanxi
9	M	51	CHD	CHD	Shanxi
10	M	44	CHD	CHD	Shanxi
11	M	52	CHD	CHD	Shanxi
12	M	45	CHD	CHD	Shanxi
13	M	59	CHD	CHD	Shanxi
14	M	47	CHD	CHD	Shanxi
15	M	62	CHD	CHD	Shanxi
16	M	52	CHD	CHD	Shanxi
17	M	54	CHD	CHD	Shanxi
18	M	63	CHD	CHD	Shanxi
19	M	46	CHD	CHD	Shanxi
20	M	59	CHD	CHD	Shanxi
21	M	56	CHD	CHD	Shanxi
22	M	50	CHD	CHD	Shanxi
23	M	62	CHD	CHD	Shanxi
24	M	47	CHD	CHD	Shanxi
25	M	51	CHD	CHD	Shanxi
26	M	52	CHD	CHD	Shanxi
27	M	44	CHD with arrhythmia	CHD	Shanxi
28	M	64	CHD with arrhythmia	CHD	Shanxi
29	M	59	CHD with arrhythmia	CHD	Shanxi
30	M	50	CHD with unstable angina	CHD	Shanxi
31	M	56	CHD with unstable angina	CHD	Shanxi
32	M	61	Acute myocardial infarction	CHD	Shanxi
33	M	51	Acute myocardial infarction	CHD	Shanxi
34	M	51	Acute myocardial infarction	CHD	Shanxi
35	M	44	Acute myocardial infarction	CHD	Shanxi
36	M	52	Acute myocardial infarction	CHD	Shanxi
37	M	43	Acute myocardial infarction	CHD	Shanxi
38	M	55	Acute myocardial infarction	CHD	Shanxi
39	M	50	Acute myocardial infarction	CHD	Shanxi
40	M	57	Acute myocardial infarction	CHD	Shanxi
41	M	59	Acute coronary syndrome	CHD	Shanxi
42	M	58	Acute coronary syndrome	CHD	Shanxi
43	M	55	CHD with acute myocardial ischemia	CHD	Shanxi
44	M	69	CHD with left heart failure	CHD	Shanxi
45	M	51	CHD with cerebral infarction	CHD	Shanxi
46	M	62	CHD with diabetes	CHD	Shanxi
47	M	58	CHD with hypertension and diabetes	CHD	Shanxi
48	M	58	CHD with hypertension and diabetes	CHD	Shanxi
49	M	46	Acute coronary syndrome with hypertension	CHD	Shanxi
50	M	41	CHD with hypertension and left heart failure	CHD	Shanxi
51	M	54	Acute myocardial infarction with hypertension	CHD	Shanxi
52	M	51	CHD with hypertension and chronic obstructive pulmonary disease	CHD	Shanxi
53	M	44	CHD with hypertension and diabetes	CHD	Shanxi
54	M	48	CHD with hypertension and diabetes	CHD	Shanxi

Table SI. Continued.

Subject no.	Sex	Age, years	Condition/health status	Group	Province of birth
55	M	49	CHD with hypertension and diabetes	CHD	Shanxi
56	F	60	CHD	CHD	Shanxi
57	F	45	CHD	CHD	Shanxi
58	F	47	CHD	CHD	Shanxi
59	F	52	CHD	CHD	Shanxi
60	F	68	CHD with unstable angina	CHD	Shanxi
61	F	58	CHD with acute left heart failure	CHD	Shanxi
62	F	62	Acute myocardial infarction	CHD	Shanxi
63	F	59	Acute myocardial infarction	CHD	Shanxi
64	F	55	Acute myocardial infarction	CHD	Shanxi
65	F	58	Acute myocardial infarction	CHD	Shanxi
66	F	66	Acute coronary syndrome	CHD	Shanxi
67	F	68	CHD with hypertension	CHD	Shanxi
68	F	49	CHD with hypertension	CHD	Shanxi
69	F	70	CHD with hypertension	CHD	Shanxi
70	F	58	CHD with acute myocardial ischemia	CHD	Shanxi
71	M	60	CHD-caused SCD	SCD	Shanxi
72	M	60	CHD-caused SCD	SCD	Shanxi
73	M	65	CHD-caused SCD	SCD	Shanxi
74	M	51	CHD-caused SCD	SCD	Shanxi
75	M	60	CHD-caused SCD	SCD	Shanxi
76	M	67	Left anterior descending CAD-caused SCD	SCD	Shanxi
77	M	43	CHD-caused SCD	SCD	Shanxi
78	M	66	CHD with acute myocardial ischemia	SCD	Shanxi
79	M	52	CHD-caused SCD	SCD	Shanxi
80	M	39	CHD-caused SCD	SCD	Shanxi
81	M	41	CHD-caused SCD	SCD	Shanxi
82	M	38	CHD-caused SCD	SCD	Shanxi
83	M	58	Acute attack of CHD	SCD	Shanxi
84	M	49	CHD-caused SCD	SCD	Shanxi
85	M	44	CHD-caused SCD	SCD	Shanxi
86	M	38	Acute attack of CHD	SCD	Shanxi
87	M	48	Acute attack of CHD	SCD	Shanxi
88	M	60	Acute attack of CHD	SCD	Shanxi
89	M	59	Acute attack of CHD	SCD	Shanxi
90	M	46	CHD-caused SCD	SCD	Shanxi
91	M	55	CHD-caused SCD	SCD	Shanxi
92	M	66	CHD-caused SCD	SCD	Shanxi
93	M	43	CHD with myocarditis	SCD	Shanxi
94	M	54	CHD-caused SCD	SCD	Shanxi
95	M	52	Right coronary artery atherosclerosis with intraplaque hemorrhage	SCD	Shanxi
96	M	37	CHD-caused SCD	SCD	Shanxi
97	M	53	Left anterior descending CAD caused SCD	SCD	Shanxi
98	M	46	CHD-caused SCD	SCD	Shanxi
99	M	71	CHD-caused SCD	SCD	Shanxi
100	M	43	CHD with hypertension	SCD	Shanxi
101	M	65	CHD with hypertension heart disease	SCD	Shanxi
102	M	43	CHD with hypertension	SCD	Shanxi
103	M	49	CHD with hypertension heart disease	SCD	Shanxi
104	M	57	CHD with hypertension heart disease, myocarditis	SCD	Shanxi
105	M	50	CHD with hypertension	SCD	Shanxi
106	M	50	CHD with hypertension heart disease	SCD	Shanxi
107	M	64	CHD with hypertension heart disease	SCD	Shanxi
108	M	47	CHD with hypertension	SCD	Shanxi

Table SI. Continued.

Subject no.	Sex	Age, years	Condition/health status	Group	Province of birth
109	M	59	CHD-caused SCD	SCD	Shanxi
110	M	49	CHD-caused SCD	SCD	Shanxi
111	M	57	CHD-caused SCD	SCD	Shanxi
112	M	58	Acute attack of CHD	SCD	Shanxi
113	M	59	CHD with hypertension	SCD	Shanxi
114	M	67	CHD-caused SCD	SCD	Shanxi
115	F	61	CHD-caused SCD	SCD	Shanxi
116	F	63	CHD-caused SCD	SCD	Shanxi
117	F	64	CHD-caused SCD	SCD	Shanxi
118	F	45	CHD-caused SCD	SCD	Shanxi
119	F	58	CHD-caused SCD	SCD	Shanxi
120	F	47	Acute attack of CHD	SCD	Shanxi
121	F	68	CHD with hypertension heart disease	SCD	Shanxi
122	F	62	Acute myocardial infarction	SCD	Shanxi
123	F	51	CHD with hypertension heart disease	SCD	Shanxi
124	M	34	Death by suffocation	Control	Shanxi
125	M	66	Hemorrhagic shock	Control	Shanxi
126	M	58	Death by suffocation	Control	Shanxi
127	M	55	Pneumonia deaths	Control	Shanxi
128	M	63	Respiratory failure complicated with cerebral hemorrhage	Control	Shanxi
129	M	45	Toxic shock death	Control	Shanxi
130	M	56	Toxic shock death	Control	Shanxi
131	M	63	Death by suffocation	Control	Shanxi
132	M	52	Subdural hemorrhage	Control	Shanxi
133	M	67	Traffic accident	Control	Shanxi
134	M	37	Barbitalism	Control	Shanxi
135	M	68	Respiratory circulatory failure	Control	Shanxi
136	M	57	Respiratory circulatory failure	Control	Shanxi
137	M	36	Electrolyte failure	Control	Shanxi
138	M	69	Respiratory circulatory failure	Control	Shanxi
139	M	53	Death by drowning	Control	Shanxi
140	M	51	Cerebral hemorrhage	Control	Shanxi
141	M	63	Respiratory circulatory failure	Control	Shanxi
142	M	54	Respiratory circulatory failure	Control	Shanxi
143	F	64	Advanced cervical cancer	Control	Shanxi
144	F	51	Multiple organ failure	Control	Shanxi
145	F	54	Toxic shock death	Control	Shanxi
146	F	61	Recurrence of squamous cell carcinoma death	Control	Shanxi
147	F	52	Amniotic fluid embolism death	Control	Shanxi
148	M	52	No history of SCD and CHD	Control	Shanxi
149	M	39	No history of SCD and CHD	Control	Shanxi
150	M	41	No history of SCD and CHD	Control	Shanxi
151	M	38	No history of SCD and CHD	Control	Shanxi
152	M	58	No history of SCD and CHD	Control	Shanxi
153	M	49	No history of SCD and CHD	Control	Shanxi
154	M	44	No history of SCD and CHD	Control	Shanxi
155	M	38	No history of SCD and CHD	Control	Shanxi
156	M	69	No history of SCD and CHD	Control	Shanxi
157	M	53	No history of SCD and CHD	Control	Shanxi
158	M	51	No history of SCD and CHD	Control	Shanxi
159	M	64	No history of SCD and CHD	Control	Shanxi
160	M	51	No history of SCD and CHD	Control	Shanxi
161	M	58	No history of SCD and CHD	Control	Shanxi
162	M	62	No history of SCD and CHD	Control	Shanxi

Table SI. Continued.

Subject no.	Sex	Age, years	Condition/health status	Group	Province of birth
163	M	52	No history of SCD and CHD	Control	Shanxi
164	M	60	No history of SCD and CHD	Control	Shanxi
165	M	52	No history of SCD and CHD	Control	Shanxi
166	M	65	No history of SCD and CHD	Control	Shanxi
167	M	43	No history of SCD and CHD	Control	Shanxi
168	M	37	No history of SCD and CHD	Control	Shanxi
169	M	54	No history of SCD and CHD	Control	Shanxi
170	M	62	No history of SCD and CHD	Control	Shanxi
171	M	55	No history of SCD and CHD	Control	Shanxi
172	M	69	No history of SCD and CHD	Control	Shanxi
173	M	50	No history of SCD and CHD	Control	Shanxi
174	M	46	No history of SCD and CHD	Control	Shanxi
175	M	64	No history of SCD and CHD	Control	Shanxi
176	M	38	No history of SCD and CHD	Control	Shanxi
177	M	58	No history of SCD and CHD	Control	Shanxi
178	M	49	No history of SCD and CHD	Control	Shanxi
179	M	44	No history of SCD and CHD	Control	Shanxi
180	M	38	No history of SCD and CHD	Control	Shanxi
181	M	48	No history of SCD and CHD	Control	Shanxi
182	M	67	No history of SCD and CHD	Control	Shanxi
183	M	37	No history of SCD and CHD	Control	Shanxi
184	M	44	No history of SCD and CHD	Control	Shanxi
185	M	55	No history of SCD and CHD	Control	Shanxi
186	M	57	No history of SCD and CHD	Control	Shanxi
187	M	58	No history of SCD and CHD	Control	Shanxi
188	F	48	No history of SCD and CHD	Control	Shanxi
189	F	52	No history of SCD and CHD	Control	Shanxi
190	F	66	No history of SCD and CHD	Control	Shanxi
191	F	60	No history of SCD and CHD	Control	Shanxi
192	F	58	No history of SCD and CHD	Control	Shanxi
193	F	48	No history of SCD and CHD	Control	Shanxi
194	F	52	No history of SCD and CHD	Control	Shanxi
195	F	60	No history of SCD and CHD	Control	Shanxi
196	F	68	No history of SCD and CHD	Control	Shanxi
197	F	50	No history of SCD and CHD	Control	Shanxi
198	F	57	No history of SCD and CHD	Control	Shanxi

M, male; F, female; Prov, province; CHD, coronary heart disease; CAD, coronary artery disease; SCD, sudden coronary death.

Table SII. Typing results of 15 SNPs and their percentages in each group.

SNP	Detected genotyping	Number of detected in control group	Percentage in control group (%)	Number of detected in SCD group	Percentage in SCD group (%)	Number of detected in CHD group	Percentage in CHD group (%)
rs2389202	AA	17	0.227	1	0.019	5	0.071
	TT	31	0.413	26	0.491	44	0.629
	AT	27	0.360	26	0.491	21	0.300
rs12429889	CC	4	0.053	1	0.019	0	0.000
	TT	24	0.320	27	0.509	56	0.800
	TC	47	0.627	25	0.472	14	0.200
rs16866933	AA	0	0.000	4	0.075	4	0.057
	GG	31	0.413	25	0.472	12	0.171
	GA	44	0.587	24	0.453	54	0.771
rs10183640	AA	2	0.027	4	0.075	15	0.214
	GG	28	0.373	32	0.604	23	0.329
	GA	45	0.600	17	0.321	32	0.457
rs11187837	AA	58	0.773	27	0.509	40	0.571
	GG	1	0.013	4	0.075	3	0.043
	GA	16	0.213	22	0.415	27	0.386
rs597503	AA	69	0.920	42	0.792	53	0.757
	GG	0	0.000	0	0.000	1	0.014
	GA	6	0.080	11	0.208	16	0.229
rs12155623	AA	23	0.307	30	0.566	18	0.257
	TT	2	0.027	11	0.208	10	0.143
	AT	50	0.666	12	0.226	42	0.600
rs2982694	GG	69	0.920	36	0.679	67	0.957
	TT	6	0.080	17	0.321	3	0.043
rs7307780	CC	55	0.733	47	0.887	57	0.814
	TC	20	0.267	6	0.113	13	0.186
rs9581094	TT	75	100.000	52	0.981	65	0.929
	TC	0	0.000	1	0.019	5	0.071
rs4621553	AA	54	0.720	28	0.528	63	0.900
	GA	21	0.280	25	0.472	7	0.100
rs10829156	GG	64	0.853	42	0.792	14	0.200
	GA	11	0.147	11	0.208	56	0.800
rs2281680	GG	57	0.760	39	0.736	56	0.800
	GA	18	0.240	14	0.264	14	0.200
rs2251393	AA	61	0.813	46	0.868	60	0.857
	GA	14	0.187	7	0.132	10	0.143
rs16942421	GG	74	0.987	45	0.849	53	0.757
	GA	1	0.013	8	0.151	17	0.243

SNP, single nucleotide polymorphism; CHD, coronary heart disease; SCD, sudden coronary death.

Table SIII. Multifactor dimensionality reduction results of the prediction models that added SNPs identified by the χ^2 test with 10, 4 and 6 SNPs, respectively.

A, 10 different significant SNPs between control group and CHD group

Model	SNPs	Balance accuracy training	Balance accuracy testing	CV consistency	χ^2 (P-value)
1	rs10829156	0.8267	0.8267	10/10	62.1767 (<0.0001)
2	rs10829156,rs16942421	0.8481	0.8481	10/10	70.2788 (<0.0001)
3	rs10183640,rs10829156, rs16942421	0.8585	0.7929	6/10	73.1369 (<0.0001)
4	rs2389202,rs12429889, rs10183640, rs10829156	0.8856	0.8014	8/10	85.1305 (<0.0001)
5	rs2389202,rs12429889,rs16866933, rs10183640,rs10829156	0.9079	0.7629	6/10	95.1314 (<0.0001)
6	rs2389202,rs12429889, rs10183640,rs11187837, rs597503,rs10829156	0.9271	0.741	5/10	104.2956 (<0.0001)
7	rs2389202,rs12429889, rs10183640,rs11187837, rs597503,rs10829156,rs16942421	0.9415	0.7362	6/10	111.2332 (<0.0001)
8	rs2389202,rs12429889, rs10183640,rs11187837, rs597503, rs4621553, rs10829156,rs16942421	0.9492	0.7367	6/10	114.8462 (<0.0001)
9	rs2389202,rs12429889, rs10183640,rs11187837, rs597503,rs9581094, rs4621553, rs10829156,rs16942421	0.955	0.6962	5/10	118.3321 (<0.0001)
10	rs2389202,rs12429889, rs16866933,rs10183640, rs11187837,rs597503,rs9581094, rs4621553,rs10829156,rs16942421	0.9562	0.65	10/10	118.5607 (<0.0001)

B, Four different significant SNPs between control group and SCD group

Model	SNPs	Balance accuracy training	Balance accuracy testing	CV consistency	χ^2 (P-value)
1	rs11187837	0.6354	0.5781	8/10	9.6947 (=0.0018)
2	rs11187837,rs16942421	0.6892	0.5908	5/10	17.2641 (<0.0001)
3	rs2389202,rs11187837,rs2982694	0.7217	0.5552	5/10	30.4046 (<0.0001)
4	rs2389202,rs11187837,rs2982694, rs16942421	0.7629	0.7191	10/10	40.8139 (<0.0001)

C, Six different significant SNPs between CHD group and SCD group

Model	SNPs	Balance accuracy training	Balance accuracy testing	CV consistency	χ^2 (P-value)
1	rs10829156	0.7962	0.7962	10/10	42.6898 (<0.0001)
2	rs2982694,rs10829156	0.8024	0.7677	7/10	43.6946 (<0.0001)

Table SIII. Continued.

Model	SNPs	Balance accuracy training	Balance accuracy testing	CV consistency	χ^2 (P-value)
3	rs16866933,rs4621553,rs10829156	0.8256	0.7891	8/10	50.9111 (<0.0001)
4	rs16866933,rs2982694,rs4621553, rs10829156	0.8387	0.7276	5/10	53.2615 (<0.0001)
5	rs16866933,rs10183640,rs2982694, rs4621553,rs10829156	0.8491	0.7156	9/10	65.1381 (<0.0001)
6	rs12429889,rs16866933, rs10183640,rs2982694, rs4621553, rs10829156	0.8531	0.7156	10/10	63.8822 (<0.0001)

SNP, single nucleotide polymorphism; CHD, coronary heart disease; SCD, sudden coronary death; CV, cross-validation.

Table SIV. Results of area under the curve of the prediction models that added SNPs identified by the χ^2 test with 10, 4 and 6 SNPs, respectively.

A, Prediction model of CHD

Test result variable	Region	Standard error of 'a'	Asymptotic significance b	95% CI	
				Lower	Upper
rs2389202	0.526	0.048	0.582	0.432	0.621
rs12429889, rs2389202	0.688	0.046	0.000	0.599	0.777
rs16866933, rs12429889, rs2389202	0.728	0.043	0.000	0.645	0.812
rs10183640, rs16866933, rs12429889, rs2389202	0.744	0.041	0.000	0.664	0.824
rs11187837, rs10183640, rs16866933, rs12429889, rs2389202	0.751	0.04	0.000	0.673	0.83
rs597503, rs11187837, rs10183640, rs16866933, rs12429889, rs2389202	0.777	0.038	0.000	0.702	0.852
rs9581094, rs597503, rs11187837, rs10183640, rs16866933, rs12429889, rs2389202	0.786	0.037	0.000	0.713	0.86
rs4621553, rs9581094, rs597503, rs11187837, rs10183640, rs16866933, rs12429889, rs2389202	0.803	0.035	0.000	0.734	0.873
rs10829156, rs4621553, rs9581094, rs597503, rs11187837, rs10183640, rs16866933, rs12429889, rs2389202	0.91	0.023	0.000	0.865	0.954
rs16942421, rs10829156, rs4621553, rs9581094, rs597503, rs11187837, rs10183640, rs16866933, rs12429889, rs2389202	0.928	0.02	0.000	0.888	0.968

B, Prediction model of SCD

Test result variable	Region	Standard error of 'a'	Asymptotic significance b	95% CI	
				Lower	Upper
rs2389202	0.617	0.049	0.024	0.521	0.713
rs2389202, rs11187837	0.682	0.047	0.000	0.59	0.774
rs2389202, rs11187837, rs2982694	0.691	0.047	0.000	0.599	0.783
rs2389202, rs11187837, rs2982694, rs16942421	0.743	0.044	0.000	0.657	0.829

C, Prediction model of sudden death from CHD

Test result variable	Region	Standard error of 'a'	Asymptotic significance b	95% CI	
				Lower	Upper
rs12429889	0.643	0.051	0.007	0.543	0.744

Table SIV. Continued.

Test result variable	Region	Standard error of 'a'	Asymptotic significance b	95% CI	
				Lower	Upper
rs12429889, rs16866933	0.704	0.049	0.000	0.609	0.799
rs12429889, rs16866933, rs10183640	0.712	0.047	0.000	0.619	0.805
rs12429889, rs16866933, rs10183640, rs2982694	0.732	0.047	0.000	0.64	0.823
rs12429889, rs16866933, rs10183640, rs2982694, rs4621553	0.741	0.047	0.000	0.649	0.832
rs12429889, rs16866933, rs10183640, rs2982694, rs4621553, rs10829156	0.892	0.029	0.000	0.834	0.949

a, under the nonparametric assumption; b, null hypothesis: True area=0.5; SNP, single nucleotide polymorphism; CHD, coronary heart disease; SCD, sudden coronary death; CI, confidence interval.