Supplementary material

Genetic association of *FOXO1A* and *FOXO3A* with longevity trait in Han Chinese populations

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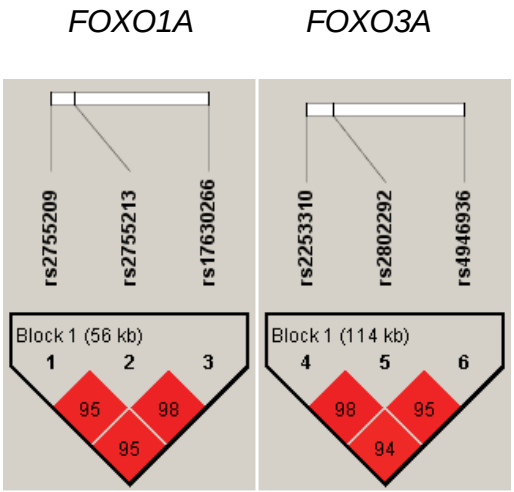
Fig. S1. Haplotype analysis of *FOXO1A* and *FOXO3A*



Linkage disequilibrium and haplotype blocks were defined and visualized by the solid spine of LD method. The D' was labeled for pairwise comparison. The entire block for *FOXO1A* is 56 kb and for *FOXO3A* is 114 kb.

Table S1. Genotypic association of *FOXO1A* and *FOXO3A* with longevity in population 1

SNP	Model	Male		Female	
		OR(CI95%)	P	OR(CI95%)	P
rs17630266	Dom	1.02(0.71-1.48)	0.914	1.02(0.78-1.35)	0.863
	Rec	1.03(0.60-1.78)	0.908	1.10(0.77-1.58)	0.588
	Add	1.02(0.78-1.33)	0.892	1.04(0.86-1.26)	0.685
rs2755209	Dom	0.73(0.51-1.05)	0.093	0.70(0.53-0.91)	0.007
	Rec	0.82(0.41-1.65)	0.584	0.82(0.49-1.37)	0.442
	Add	0.79(0.59-1.06)	0.122	0.77(0.62-0.95)	0.014
rs2755213	Dom	0.65(0.45-0.95)	0.025	0.71(0.54-0.94)	0.015
	Rec	0.93(0.57-1.52)	0.774	0.67(0.46-0.97)	0.033
	Add	0.79(0.61-1.04)	0.091	0.76(0.62-0.92)	0.005
rs2253310	Dom	1.65(1.19-2.30)	0.003	1.67(1.27-2.18)	0.0002
	Rec	1.53(0.86-2.72)	0.149	0.94(0.57-1.56)	0.822
	Add	1.46(1.14-1.88)	0.003	1.37(1.10-1.70)	0.004
rs2802292	Dom	1.73(1.24-2.41)	0.001	1.62(1.24-2.12)	0.0004
	Rec	1.68(0.92-3.05)	0.092	0.99(0.59-1.64)	0.957
	Add	1.54(1.19-1.99)	0.001	1.36(1.10-1.69)	0.005
rs4946936	Dom	1.61(1.16-2.24)	0.005	1.66(1.26-2.18)	0.0003
	Rec	1.61(0.84-3.10)	0.151	1.24(0.69-2.21)	0.475
	Add	1.47(1.13-1.92)	0.004	1.46(1.16-1.83)	0.001

Dom: dominant; Rec: recessive; Add: additive model; OR ($CI_{95\%}$): odds ratio with 95% confidence interval; *P*: p value from logistic regression.

Table S2. Haplotypic association of *FOXO1A* and *FOXO3A* with female longevity in population 1

Haplotype	Frequency (case/control)	OR (CI95%)	P	PW (α = 0.05)	Perm P
FOXO1A					
CCT	0.392/0.380	1.05(0.86-1.28)	0.604	NC	NC
TTG	0.230/0.292	0.72(0.58-0.90)	0.003	0.98	0.024
CCG	0.248/0.192	1.38(1.08-1.76)	0.006	0.98	0.046
CTG	0.116/0.127	0.55(0.68-1.24)	0.550	NC	NC
CTT	0.008/0.004	2.59(0.90-8.43)	0.380	NC	NC
FOXO3A					
GTC	0.692/0.749	0.75(0.60-0.94)	0.009	0.96	0.083
CGT	0.270/0.201	1.47(1.16-1.86)	0.0009	0.99	0.009

OR ($CI_{95\%}$): odds ratio (95% confidence interval); *P*: p value from Chi-square test; PW: power to reach an alpha level of 0.05 under given size of the population; Perm *P*: p value for permutation test; NC: not calculated.

Table S3. Haplotypic association of *FOXO3A* with male longevity in population 1

Haplotype	Frequency (case/control)	OR (CI95%)	P	PW (α = 0.05)	Perm P
GTC	0.657/0.742	0.67(0.51-0.86)	0.001	0.99	0.010
CGT	0.289/0.216	1.48(1.12-1.94)	0.004	0.99	0.033

OR ($CI_{95\%}$): odds ratio (95% confidence interval); *P*: p value from Chi-square test; PW: power to reach an alpha level of 0.05 under given size of the population; Perm *P*: p value for permutation test.

Table S4. Effects of ages on SNP frequencies

	Age/No.	rs17630266	rs2755209	rs2755213	rs2253310	rs2802292	rs4946936
				MAF			
Male	24-59/682	0.372	0.286	0.420	0.248	0.242	0.225
	94-99/41	0.397	0.278	0.400	0.305	0.268	0.268
	≥100/141	0.340	0.236	0.345	0.333	0.345	0.306
Female	28-61/374	0.392	0.294	0.413	0.235	0.236	0.212
	92-99/85	0.394	0.276	0.393	0.259	0.259	0.253
	≥100/490	0.400	0.237	0.341	0.302	0.301	0.284

Age: the ages when blood samples were collected; No.: number of participants; MAF: minor allele frequency.