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Table SI. Summary statistics of quality control for whole-exome sequencing.

Sample	Raw reads	Clean reads	Clean read1 Q30, %	Clean read2 Q30, %	Mapping rate on genome, %	Average sequence depth on target	Total SNPs	Fraction of SNPs in dbSNP, %	Fraction of SNPs in 1000 genomes, %
I-1	124158824	124051280	91.78	89.09	99.98	153.24	130818	99.57	93.50
II-2	134956444	134862188	90.89	87.21	99.99	163.71	130099	99.54	93.55
II-5	156796890	156683530	90.70	87.36	99.98	131.69	129940	99.53	93.37
II-7	155120830	155010076	90.91	87.32	99.99	145.63	130810	99.54	93.38
II-9	145253370	145140778	91.31	87.82	99.98	165.58	132037	99.54	93.43
III-4	140875638	140755388	90.92	87.94	99.98	152.55	131412	99.53	93.55
III-6	121632982	121561094	90.72	86.16	99.98	112.77	130992	99.50	93.28
III-7	138455402	138361876	90.38	87.16	99.98	146.36	130744	99.53	93.41
III-9	120669966	120590014	90.62	86.6	99.99	156.85	129641	99.55	93.48
III-14	145489752	145387376	91.06	87.06	99.99	135.94	131734	99.53	93.43
III-16	110886496	110822054	90.59	85.88	99.98	155.94	131240	99.53	93.46
IV-3	148715816	148602092	90.91	87.55	99.99	180.15	131230	99.59	93.58
Average	136917700	136818978	90.90	87.26	99.98	150.03	130891	99.54	93.45

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dbSNP, single nucleotide polymorphism database.

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13 **Table SII.** Primer pairs used in the present study.

Gene	Primer	Annealing temperature, °C	Product size, bp
COL7A1 Exon7	5'-TCAGGAGTATAGGTGGTGGC-3'	55	281
	5'-CAGGGATTCATGGAGTCAGA-3'		
COL7A1 Exon16	5'-AGACTCCCATCATCTTGCCC-3'	55	276
	5'-CACCTGAACCCCCAATAAAC-3'		
COL7A1 Exon21	5'-AACCCAGTTAACAGAGCCAG-3'	55	325
	5'-GGAGGAGTCACTCAGAGTCG-3'		
COL7A1 Exon27	5'-GTAAGGAGTAGGCTGATGGG-3'	55	346
	5'-AGGGTCTCTTTGAGGTTGAA-3'		
COL7A1 Exon36	5'-GGTATGTGGAGGCAAGTGAT-3'	55	321
	5'-CAAGGACTTTGGGAGAAGTG-3'		
COL7A1 Exon49	5'-GGGCAGTTGGTGAAGGTTGT-3'	55	312
	5'-AAGAGGGAGGTGATGCAGGA-3'		
COL7A1 Exon54	5'-TGATGGGAACCTCTGATGTG-3'	55	299
	5'-GAAGATTGGGAGGGTTTAGC-3'		
COL7A1 Exon63,64	5'-GCCCCAAGGGATATCTCAGAG-3'	55	312
	5'-TCTTGGCTGTGTAGGTGTGC-3'		
COL7A1 Exon71	5'-GCAGGAGCTTCTCTGTCATG-3'	55	196
	5'-ACAGCAAGAGGTCAGAGGAG-3'		
COL7A1 Exon76	5'-TGACTAGTGACCAGGAAGCC-3'	55	297
	5'-TCAAGTCAGTCCCTAGTGCC-3'		
COL7A1 Exon87	5'-CCTGGTGTGCCAGTATGTGT-3'	60	252
	5'-TGAGGCAGAGGAGTTGCTGC-3'		
COL7A1 Exon116	5'-ACAGTGGAATCAGTGCTGC-3'	55	275
	5'-AGGGTTTGTGGGAATCAGAG-3'		
COL7A1 Exon117	5'-CCCTGACCTTTCAACCCTCT-3'	55	334
	5'-AAGGACTCCTCCCCCAGAAC-3'		

14 COL7A1, collagen type VII, $\alpha 1$.