

**Additional File 9** The chromosomal regions associated with the limb bone lengths under the assumption of the linkage phases being same in the four populations

Trait	Chr <sup>1</sup>	Top SNP	Position, Mb	Effect $\pm$ SE	<i>P</i> Value <sup>2</sup>	<i>N</i> <sub>SNP</sub> <sup>3</sup>
Scapula	1	ss131149408	282.04	-0.164 $\pm$ 0.039	2.43 $\times$ 10 <sup>05</sup>	1
Scapula	2	ss131211507	3.61	-0.139 $\pm$ 0.033	2.70 $\times$ 10 <sup>05</sup>	1
Ulna	4	ss131269439	81.71	0.195 $\pm$ 0.041	1.93 $\times$ 10 <sup>06*</sup>	1
Femur	4	ss131270306	84.98	0.163 $\pm$ 0.040	4.72 $\times$ 10 <sup>05</sup>	1
Humerus	4	ss131270306	84.98	0.164 $\pm$ 0.038	1.41 $\times$ 10 <sup>05</sup>	1
Femur	7	ss131342596	33.18	-0.232 $\pm$ 0.037	5.46 $\times$ 10 <sup>10**</sup>	3
Scapula	7	ss131342596	33.18	-0.194 $\pm$ 0.040	9.93 $\times$ 10 <sup>07*</sup>	1
Humerus	7	ss131347175	40.85	-0.190 $\pm$ 0.034	2.40 $\times$ 10 <sup>08**</sup>	4
Tibia	7	ss131347175	40.85	-0.224 $\pm$ 0.034	7.51 $\times$ 10 <sup>11**</sup>	6
Ulna	7	ss131347175	40.85	-0.233 $\pm$ 0.038	6.90 $\times$ 10 <sup>10**</sup>	8
Humerus	8	ss131065181	145.99	-0.131 $\pm$ 0.032	3.86 $\times$ 10 <sup>05</sup>	1
Ulna	17	ss131546319	37.50	0.180 $\pm$ 0.045	6.46 $\times$ 10 <sup>05</sup>	1
Tibia	18	ss107862415	52.79	0.143 $\pm$ 0.035	3.39 $\times$ 10 <sup>05</sup>	1
Humerus	X	ss478943984	45.12	0.083 $\pm$ 0.019	7.59 $\times$ 10 <sup>06</sup>	4
Femur	X	ss23131102	63.65	-0.133 $\pm$ 0.022	8.67 $\times$ 10 <sup>10**</sup>	3
Tibia	X	ss23131102	63.65	-0.140 $\pm$ 0.020	4.67 $\times$ 10 <sup>12**</sup>	2
Ulna	X	ss23131102	63.65	-0.129 $\pm$ 0.022	3.55 $\times$ 10 <sup>09**</sup>	2
Scapula	X	ss131070541	106.48	0.123 $\pm$ 0.026	2.72 $\times$ 10 <sup>06*</sup>	2

Notes: 1. Chromosome; 2. The *P* value was corrected by genomic control. \*\*: 1% genome-wide significant; \*: 5% genome-wide significant; without \*: suggestive significant; 3. number of SNPs that surpass the suggestive significance level.