

## Supplementary Materials

### **A genome-wide association study identifies a genomic region for the polycerate phenotype in sheep (*Ovis aries*)**

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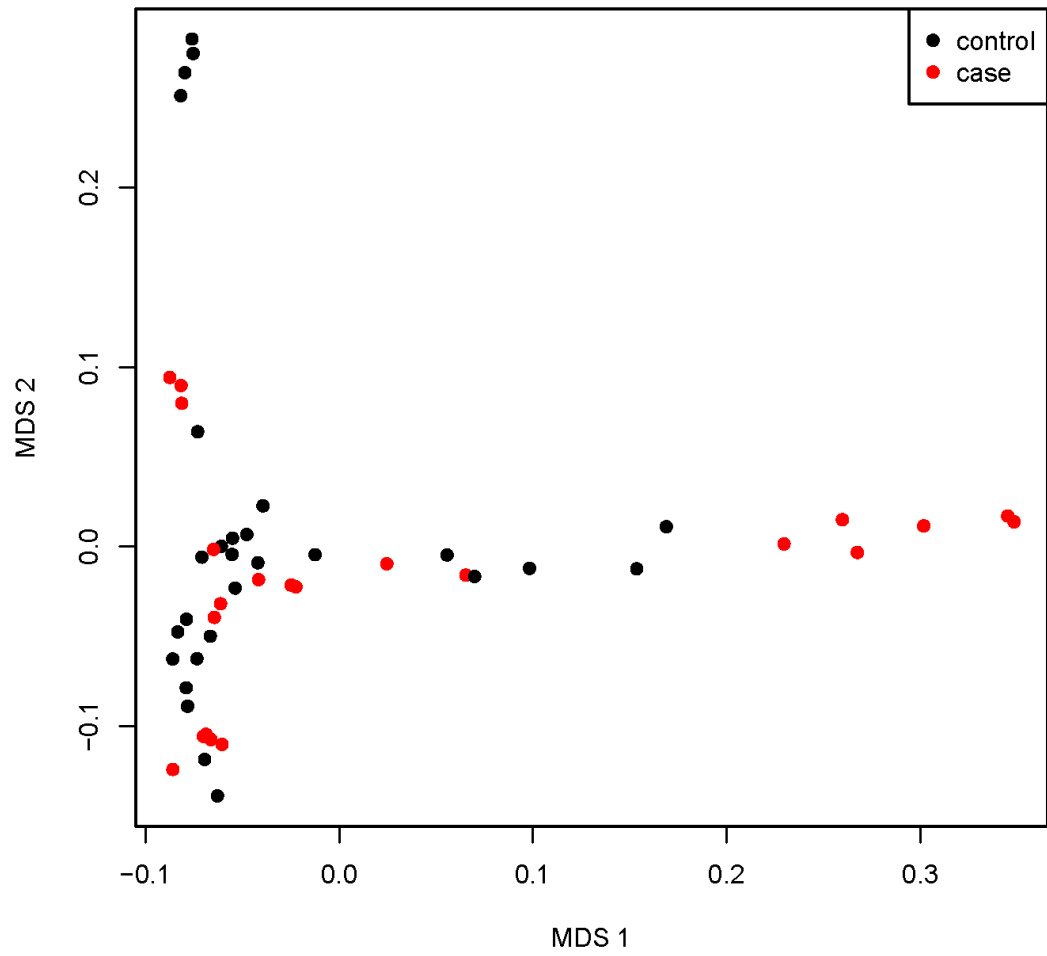
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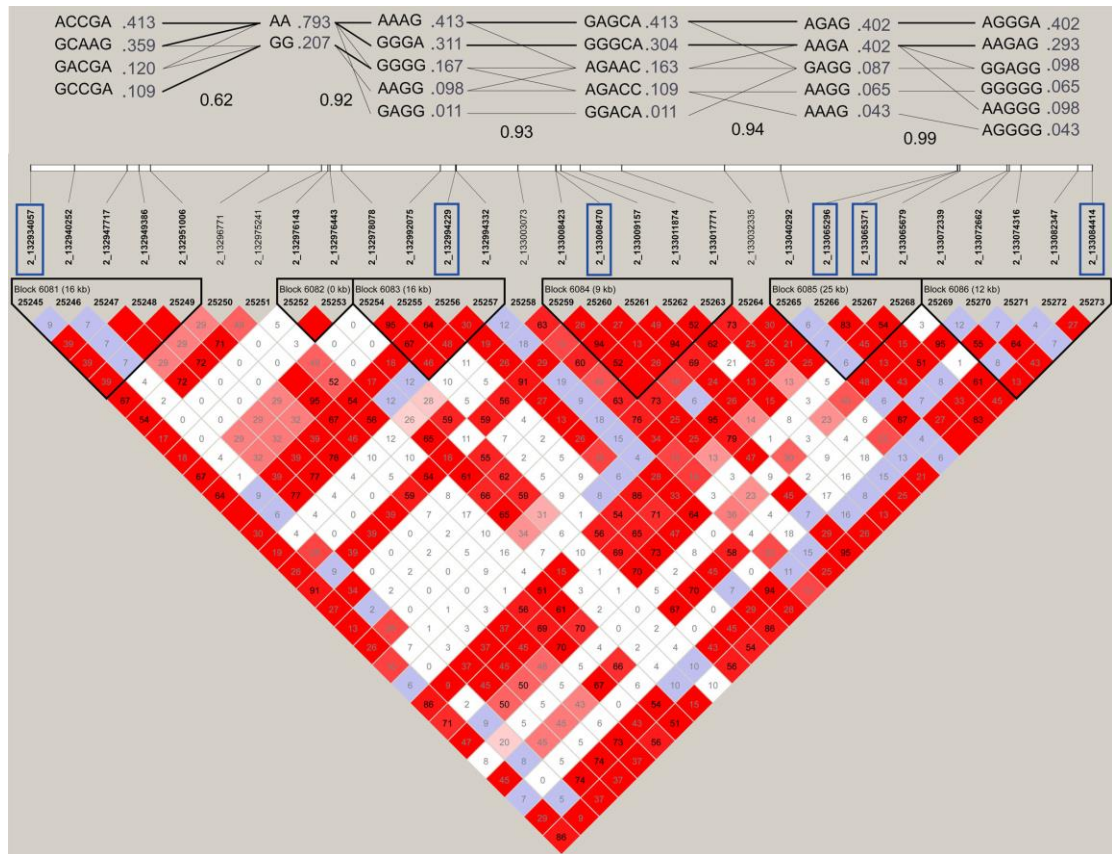
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**Supplementary Figure S1.** Multidimensional scaling plot (MDS plot). The black dots represent animals in the control group, and the red dots indicate animals from the case group.



**Supplementary Figure S2.** The significantly associated haplotypes and LD blocks visualised using Haploview v4.2. The blocks were defined by four-gamete rule.  $r^2$  values are presented in colourful squares. Haplotypes with population frequencies are upside of each block. In the crossing areas, multiallelic  $D'$  values indicate the level of recombination between the two blocks. SNPs (denoted by position on chromosome 2) in blue boxes from left to right are the significant SNPs (rs429526398, rs419153948, rs428938943, rs422753866, rs403336550 and rs428812278, see also Table 1) detected by genome-wide association (GWA) analysis.

**Supplementary Table S1.** Functional genes in the candidate genomic region (132.0

-133.1 Mb) on chromosome 2

<b>Gene</b>	<b>Start (bp)</b>	<b>Stop (bp)</b>	<b>Strand</b>	<b>Description</b>
<i>LOC105609044</i>	132190083	132197376	+	uncharacterized LOC105609044
<i>LOC105609042</i>	132210048	132363017	-	uncharacterized LOC105609042
<i>LOC106990953</i>	132345268	132350981	+	uncharacterized LOC106990953
<i>LOC105609047</i>	132434763	132443283	+	uncharacterized LOC105609047
<i>MTX2</i>	132672354	132748945	-	metaxin 2
<i>HOXD1</i>	132830789	132832890	-	homeobox D1
<i>LOC105609052</i>	132842815	132843657	+	uncharacterized LOC105609052
<i>LOC105609054</i>	132845690	132847753	-	uncharacterized LOC105609054
<i>HOXD3</i>	132847778	132866477	-	homeobox D3
<i>MIR10B</i>	132868982	132869080	-	microRNA mir-10b
<i>LOC105610367</i>	132876480	132884305	+	myosin heavy chain IB-like
<i>HOXD8</i>	132884968	132888875	-	homeobox D8
<i>HOXD9</i>	132894431	132899468	-	homeobox D9
<i>HOXD10</i>	132899503	132902661	-	homeobox D10
<i>LOC101104380</i>	132909273	132915738	-	homeobox protein Hox-D11
<i>HOXD12</i>	132916631	132919361	-	homeobox D12
<i>HOXD13</i>	132922784	132926088	-	homeobox D13
<i>EVX2</i>	132934176	132938463	+	even-skipped homeobox 2
<i>LOC101107331</i>	132987715	132988173	-	uncharacterized LOC101107331
<i>KIAA1715</i>	133011855	133110982	+	KIAA1715 orthology