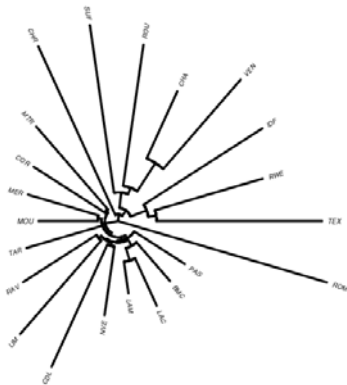


**Supporting information: FLK results by region: SNP frequencies, local trees and haplotype cluster frequencies**

Breeds:

<b>Breed</b>	<b>Abbreviation</b>
Berrichon du Cher	BER
Blanche du Massif Central	BMC
Causse du Lot	CDL
Charollais	CHA
Charmoise	CHR
Corse	COR
European Mouflon	EUR
Île de France	IDF
Asian Mouflon	IRN
Lacaune (dairy)	LAC
Lacaune (meat)	LAM
Limousine	LIM
Mérinos d'Arles	MER
Mourerous	MOU
Manech tête rousse	MTR
Noire du Velay	NVE
Ouessant	OUE
Préalpes du Sud	PAS
Mérinos de Rambouillet	RAM
Rava	RAV
Romane / INRA 401	RMN
Romanov	ROM
Roussin de la Hague	ROU
Rouge de l'Ouest	RWE
Suffolk	SUF
Tarasconnaise	TAR
Texel	TEX
Vendéen	VEN

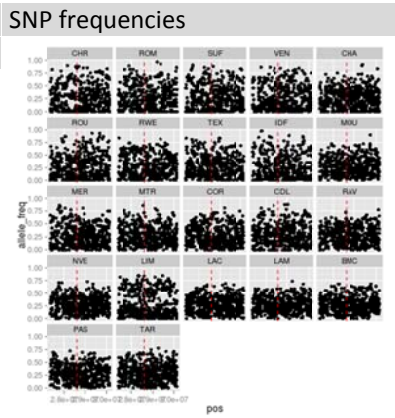
Population tree estimated from all SNPs



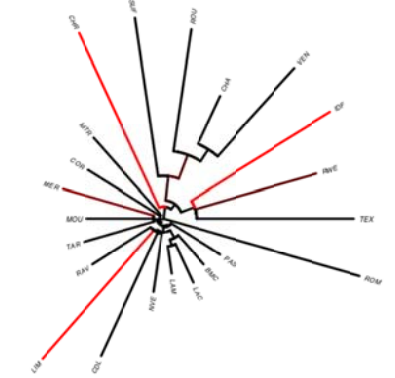
\*In SNP frequency and haplotype cluster frequency plots the red dotted line is the SNP with the smallest p value and the two black lines are the beginning and end of candidate genes.

Region		
Chr	Begin	End
1	27383208	30143421

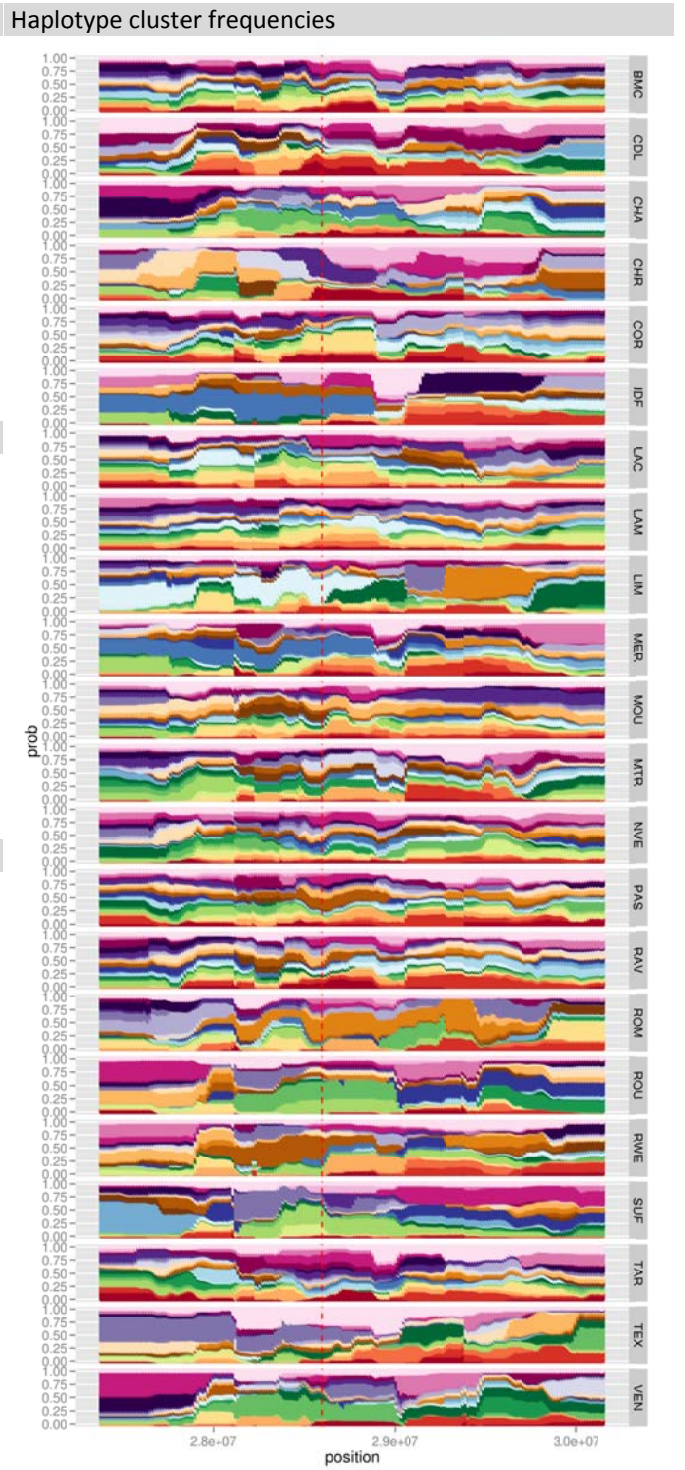
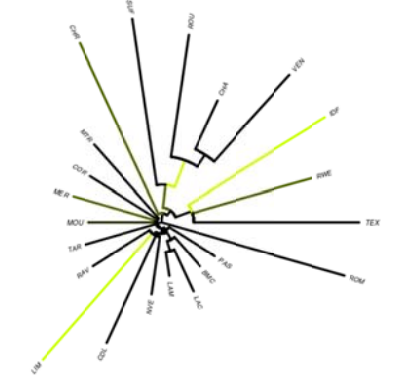
Best SNP: 28596396  
 Located in *SSBP3* [1].



SNP local tree

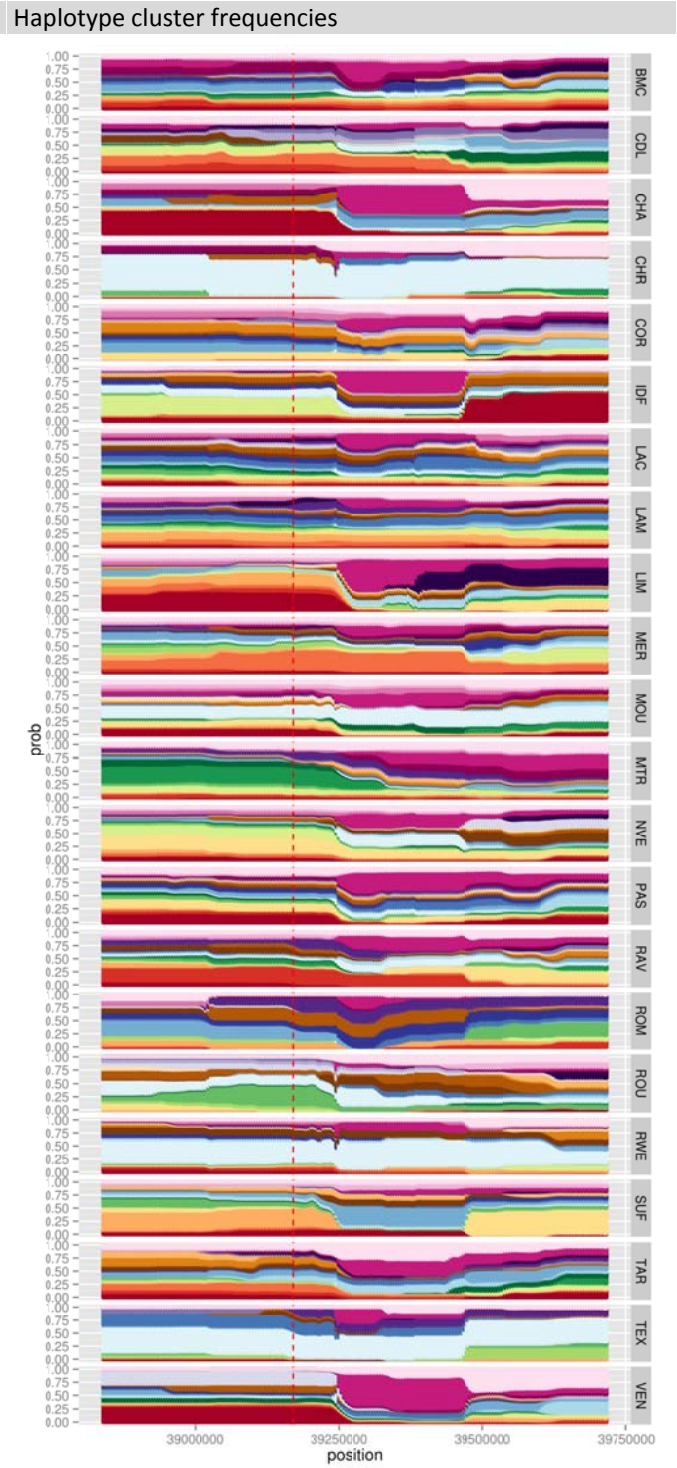


Haplotype local tree

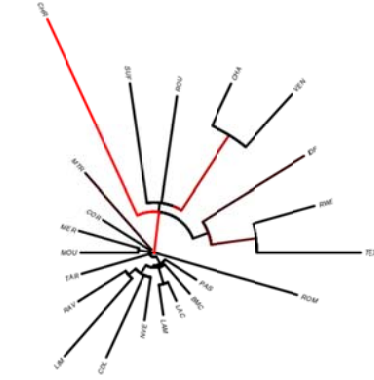


Region		
Chr	Begin	End
1	38836829	39720090

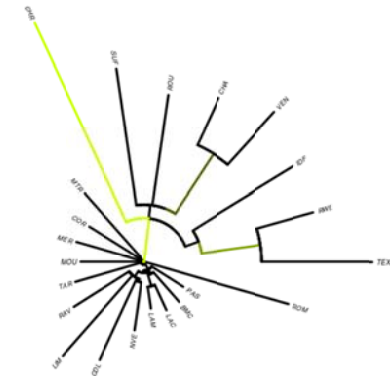
Best SNP: 39170368  
 Located in *ROR1* [1].

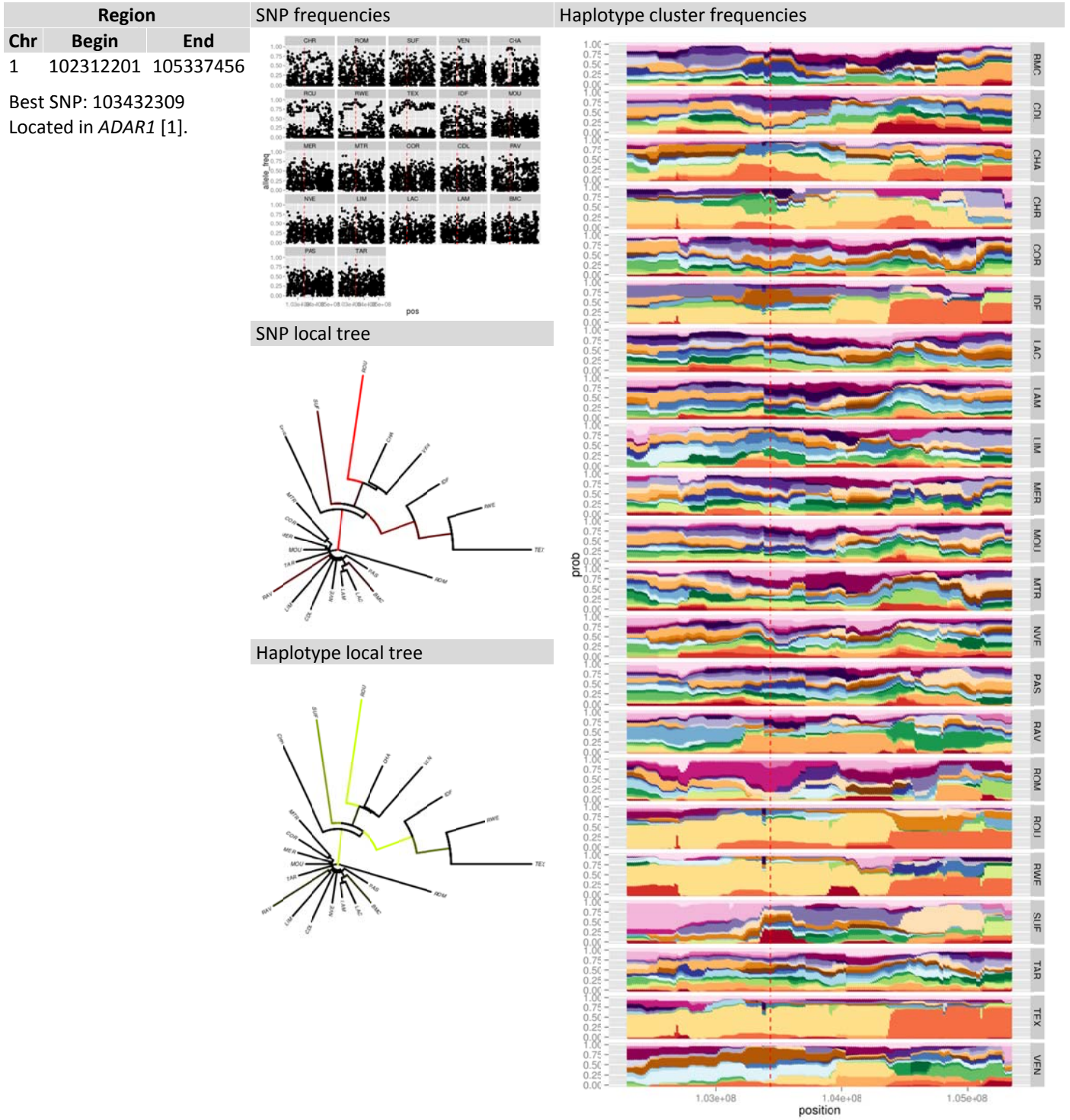


SNP local tree



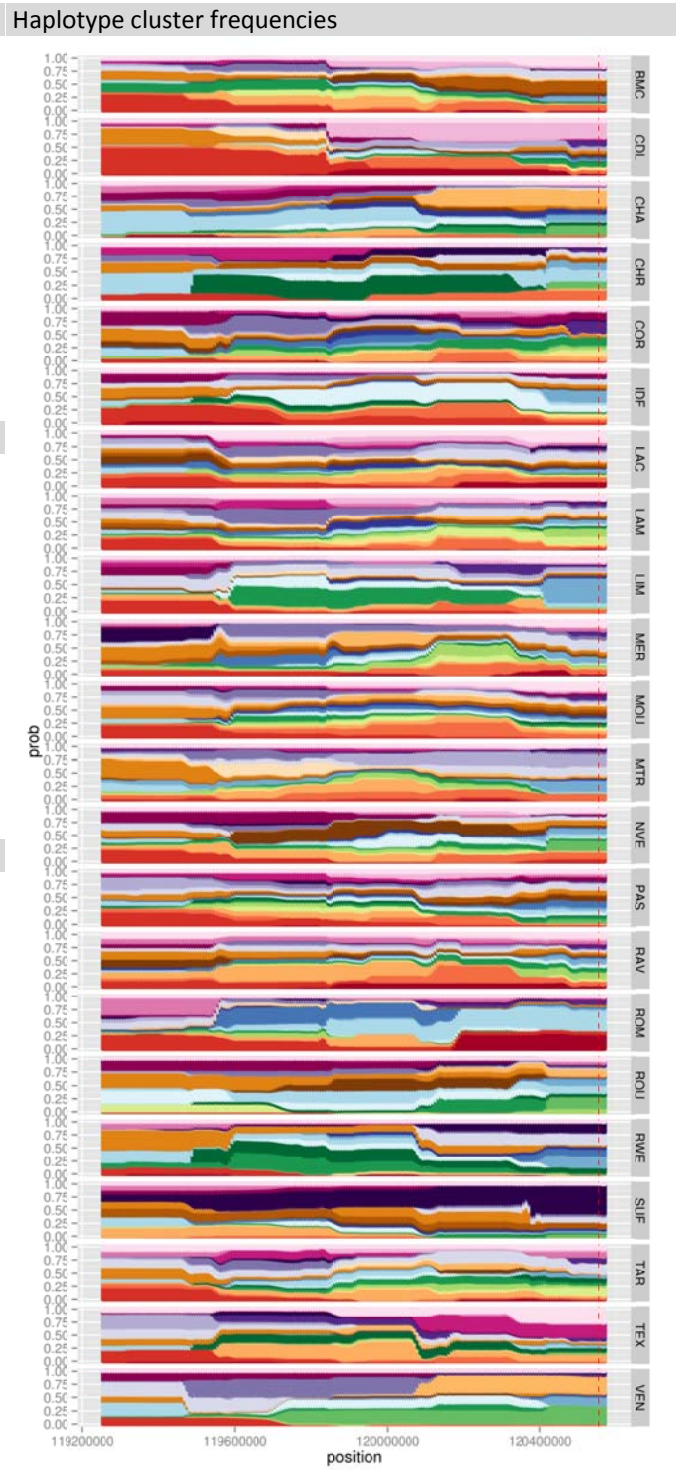
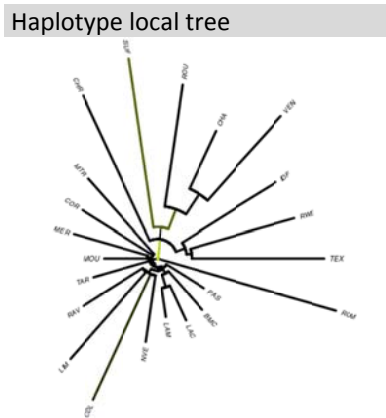
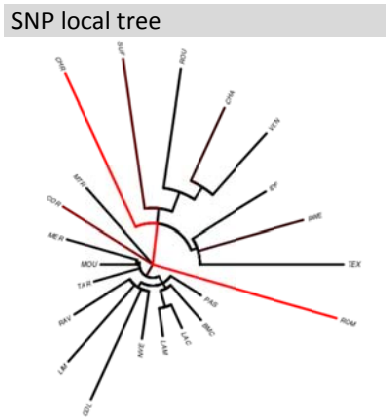
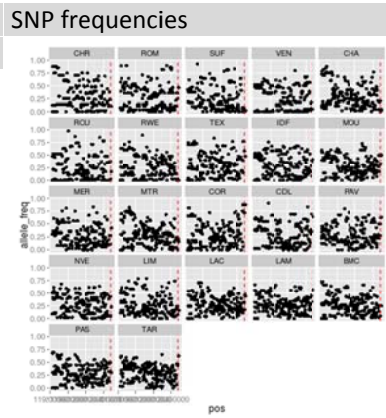
Haplotype local tree





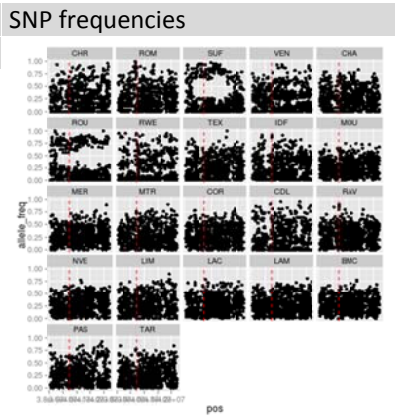
Region		
Chr	Begin	End
1	119252967	120575235

Best SNP: 120554658  
 Located in *IFNAR2* [1].

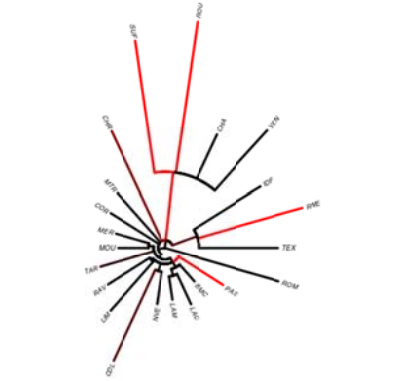


Region		
Chr	Begin	End
2	38096770	42417880

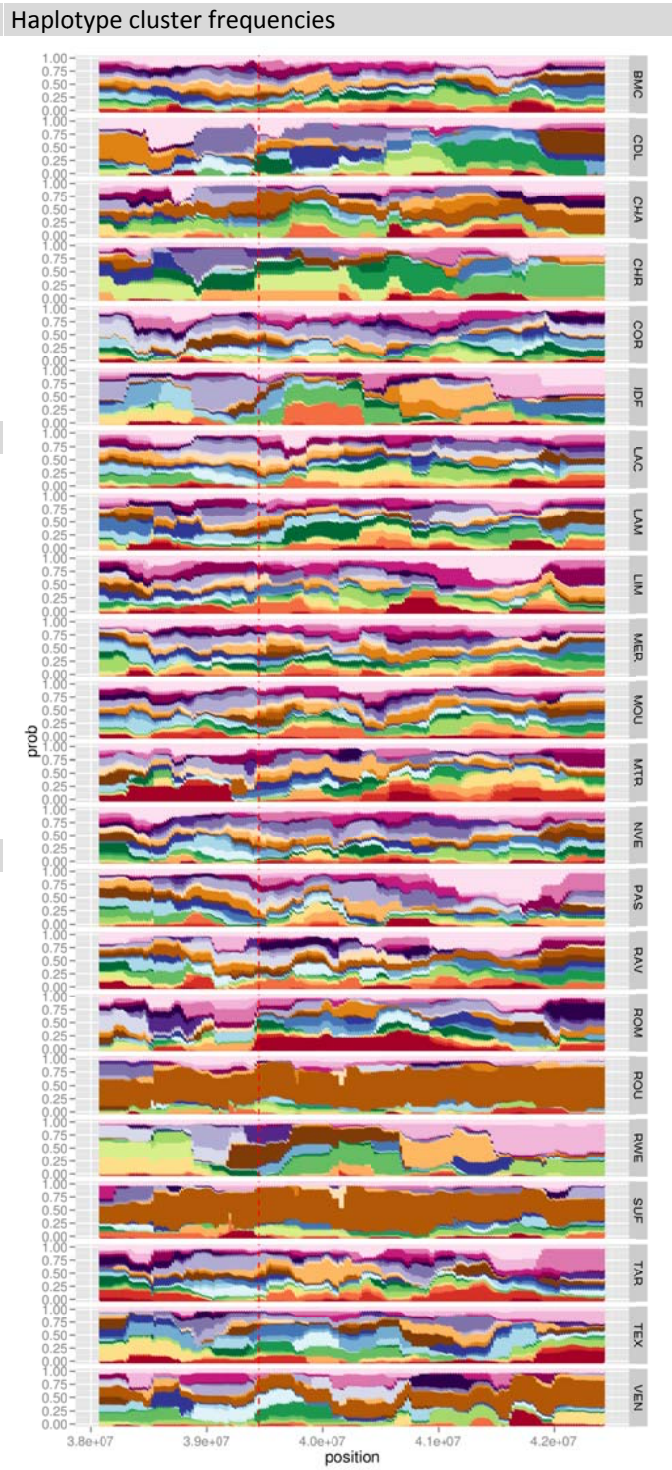
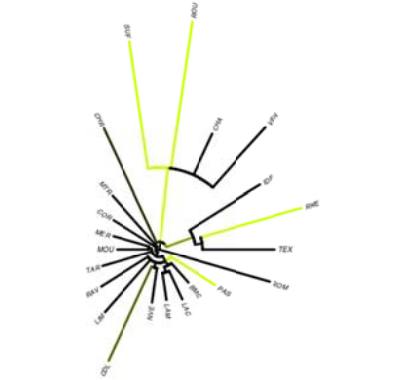
Best SNP: 39454479  
 Located in *EBF2* [1]  
 (involved in brown fat fate and function in mice [2]).



SNP local tree

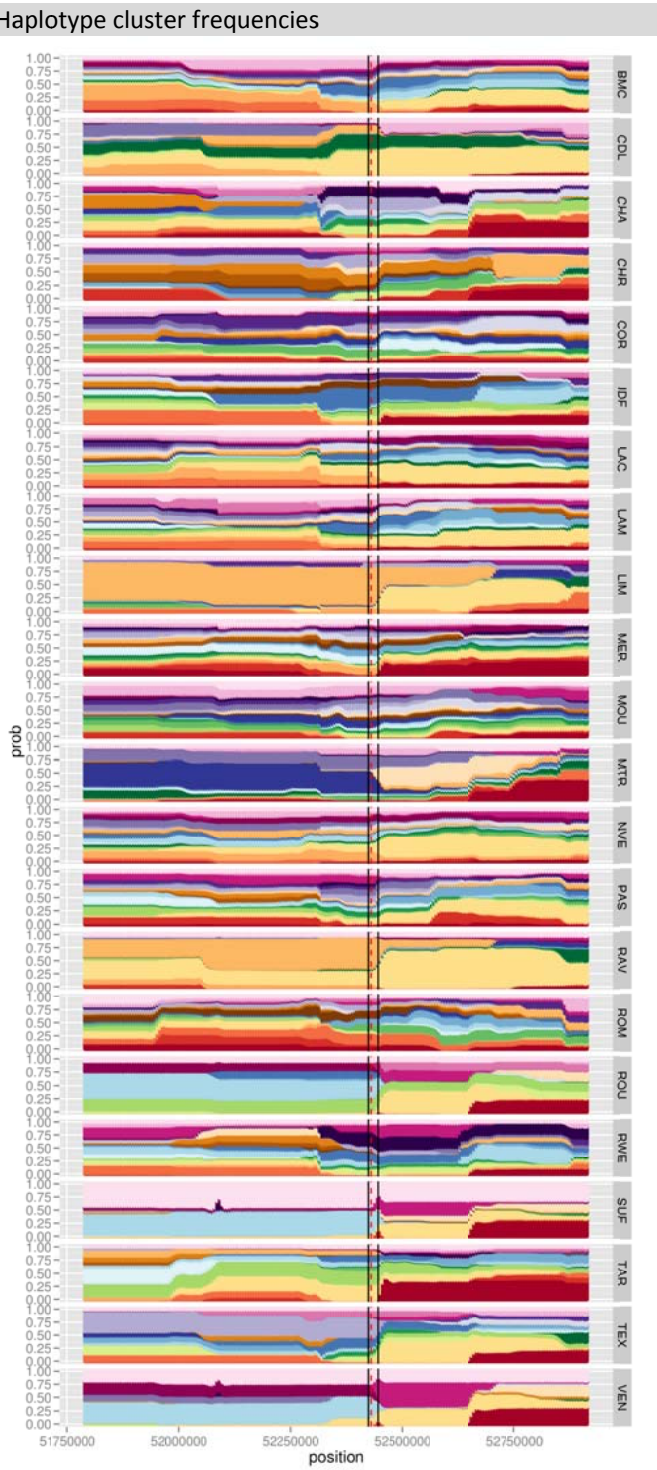
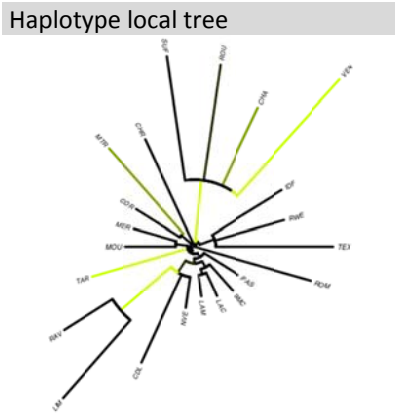
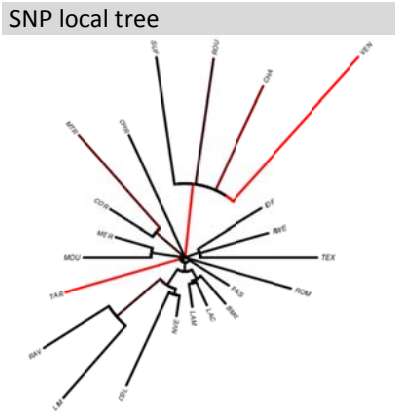
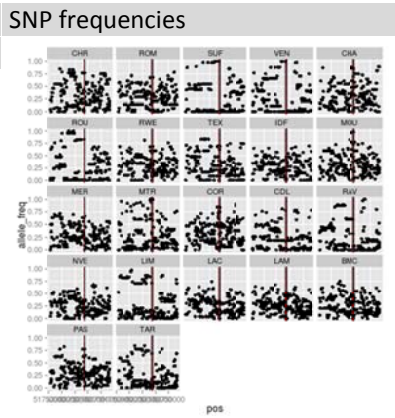


Haplotype local tree



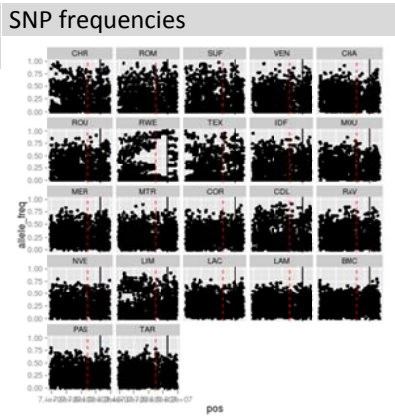
Region		
Chr	Begin	End
2	51788434	52911940

Best SNP: 52429848  
 Located in *NPR2* [1]  
 (mutations in *NPR2*  
 associated with height in  
 humans [3]).

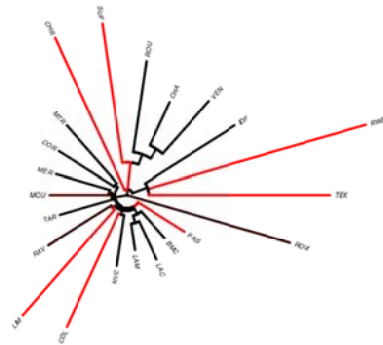


Region		
Chr	Begin	End
2	73868893	81869098

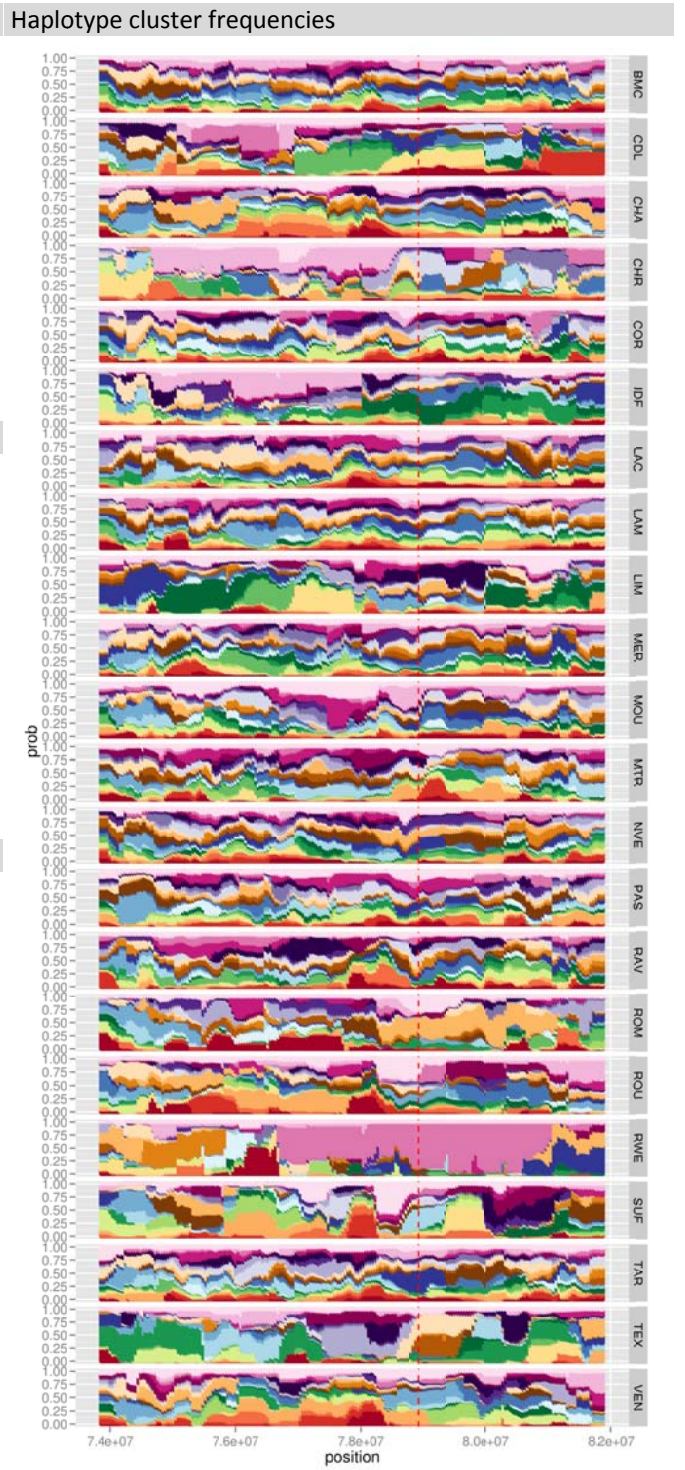
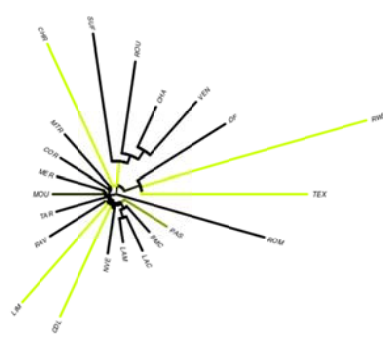
Best SNP: 78924564  
Candidate gene: *TYRP1* (a mutation in *TYRP1* in Soay sheep is associated with light coat colour [4]).



SNP local tree



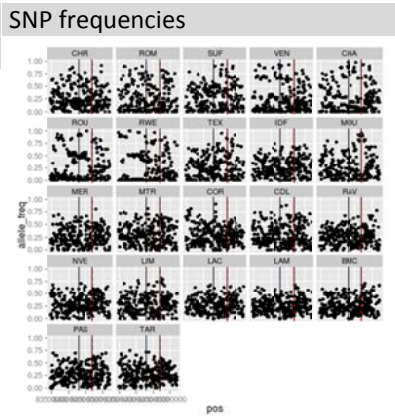
Haplotype local tree



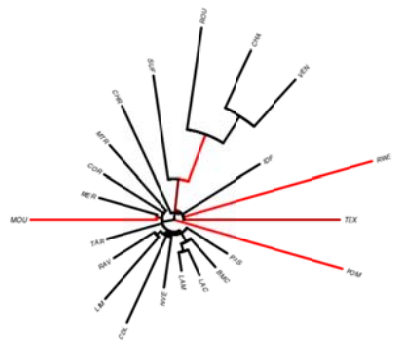


Region		
Chr	Begin	End
2	83470886	85199700

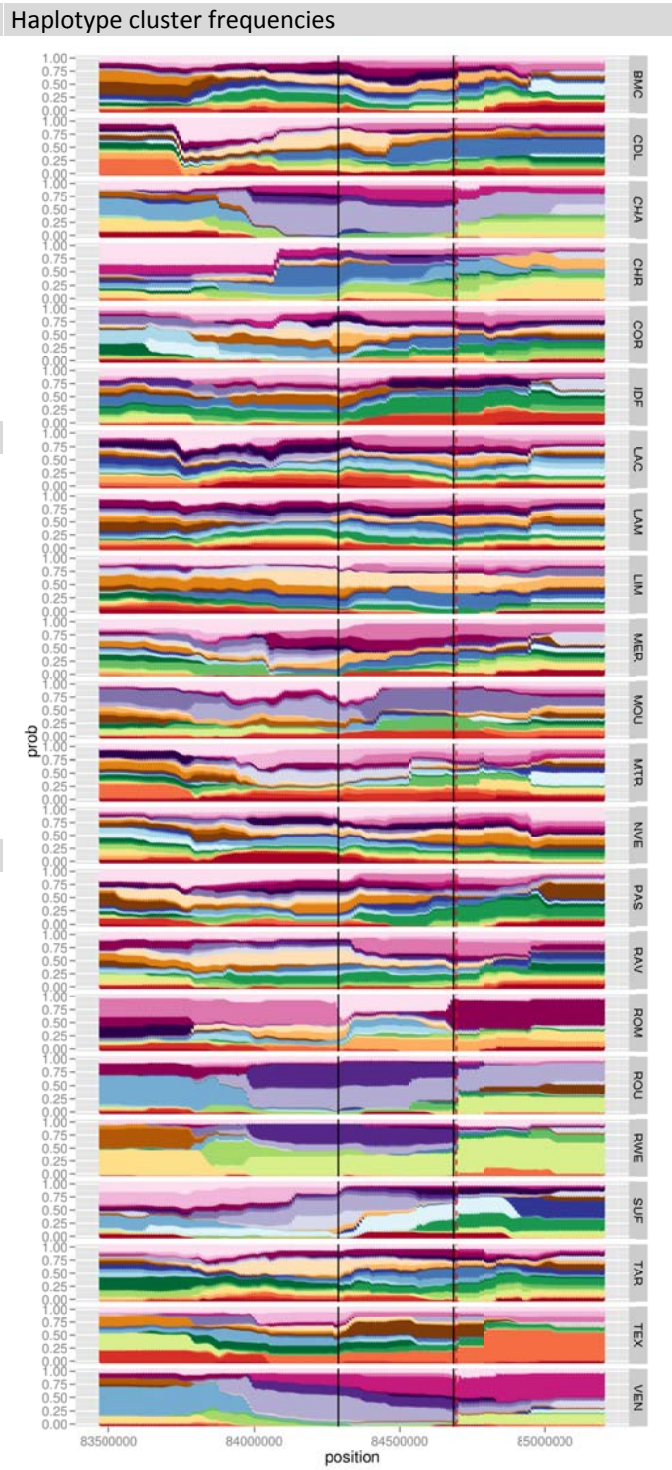
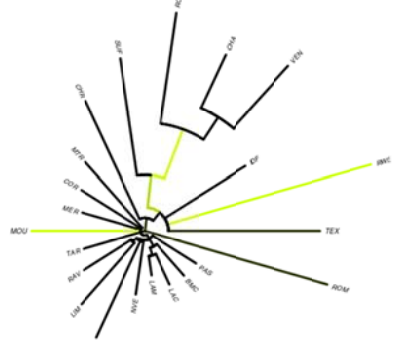
Best SNP: 84698214  
Candidate gene: *BNC2*  
(mutations in *BNC2* in humans is associated with skin colour in humans [5]).

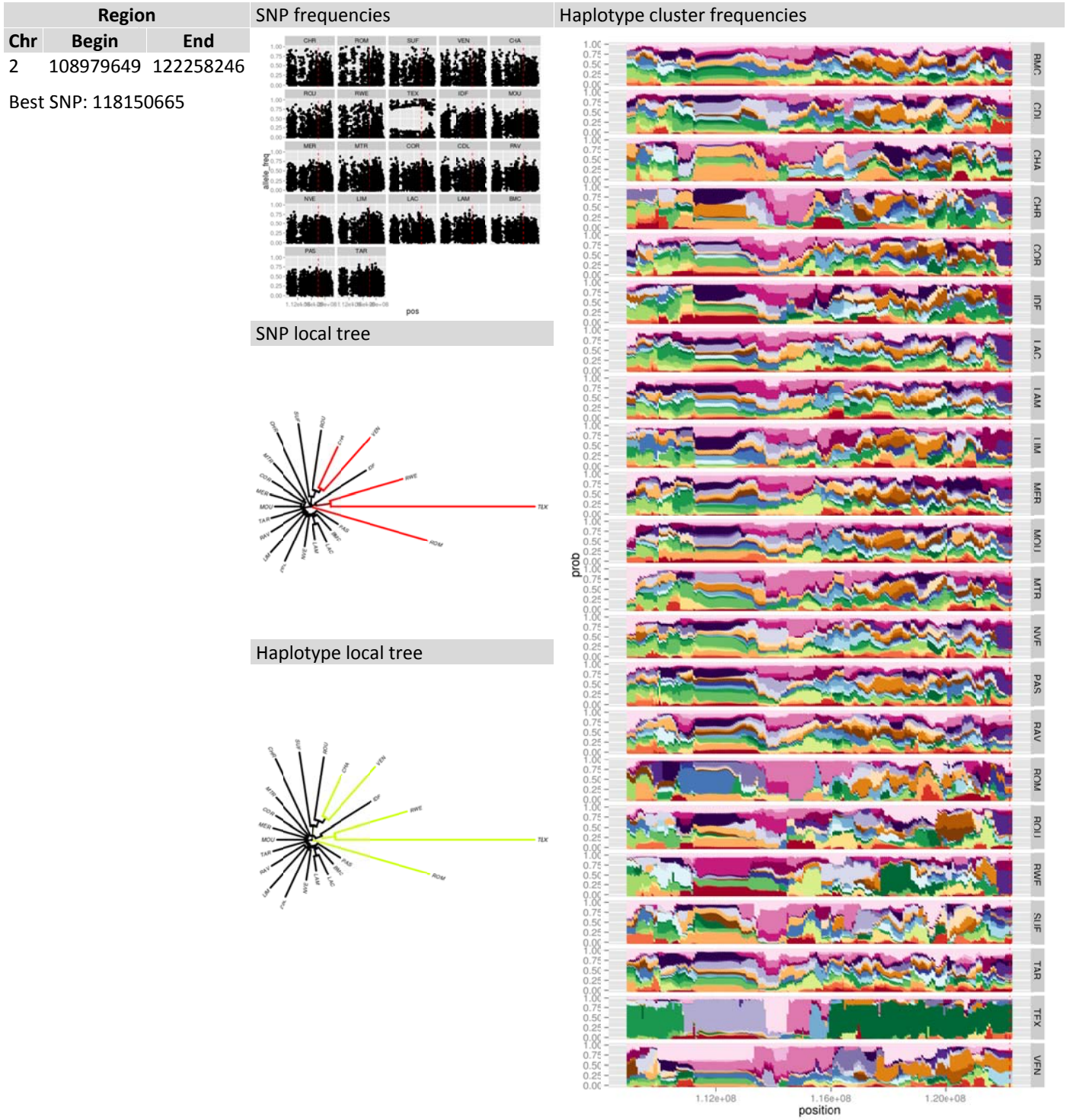


SNP local tree



Haplotype local tree



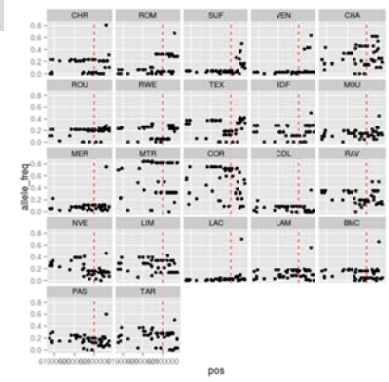




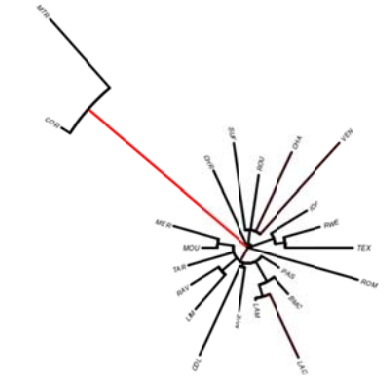
Region			SNP frequencies	Haplotype cluster frequencies
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Chr	Begin	End
3	61876792	62174495

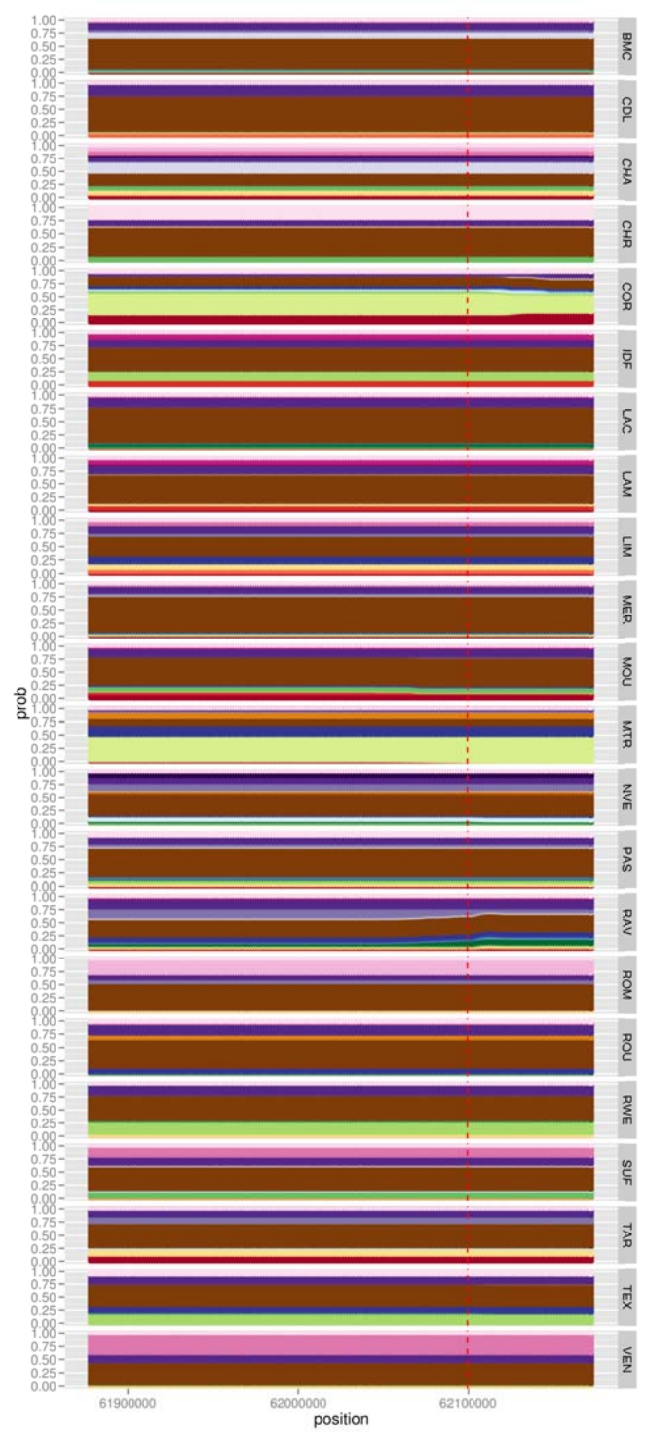
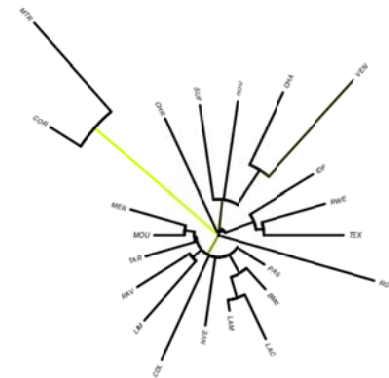
Best SNP: 62099364

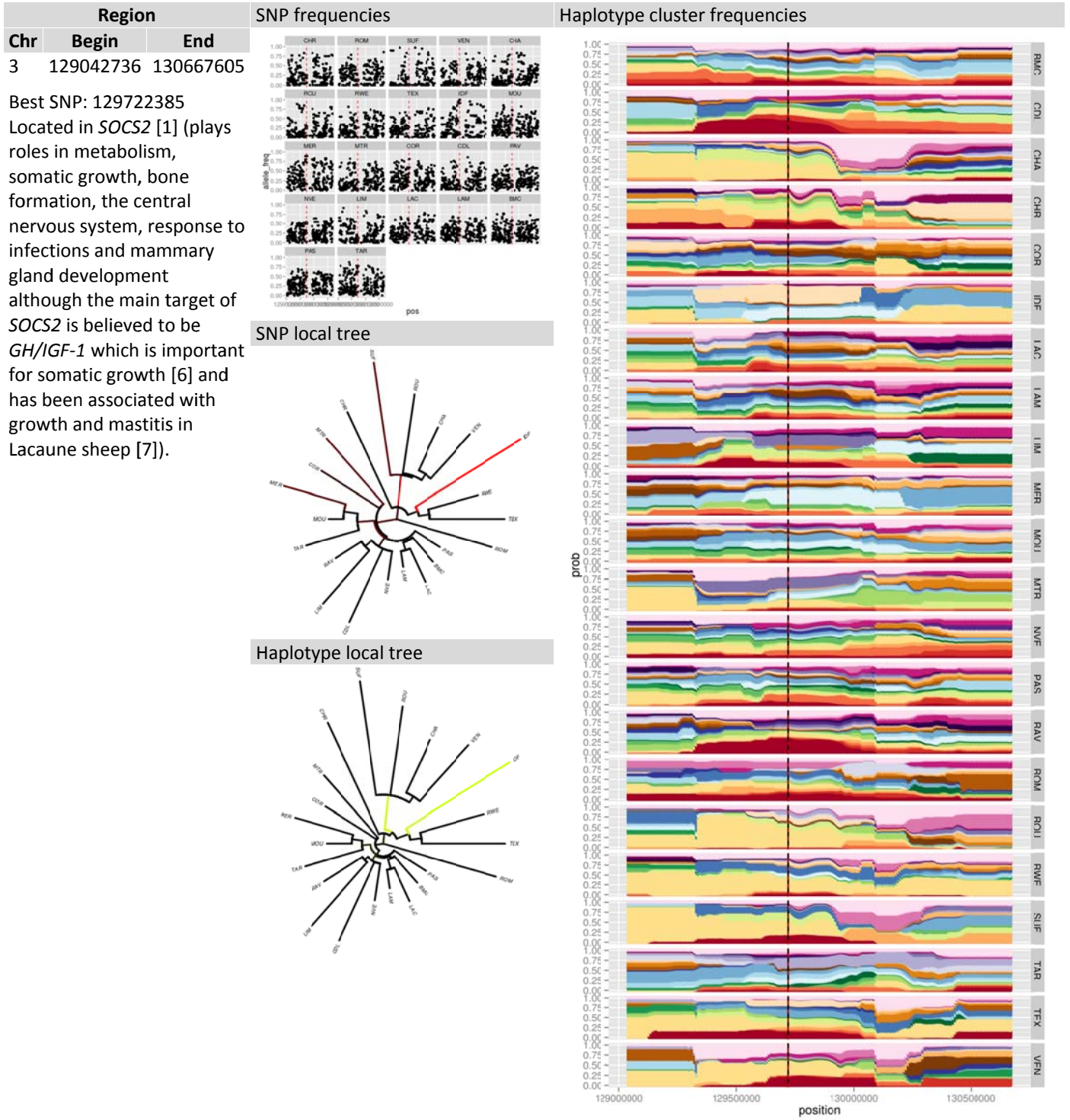


SNP local tree



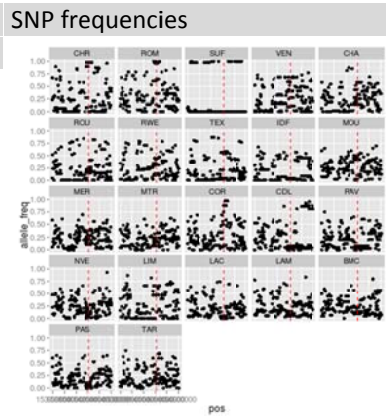
Haplotype local tree



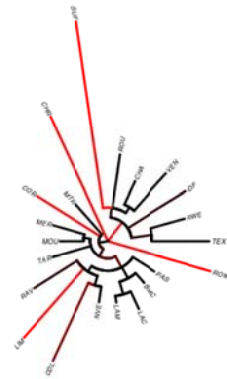


Region		
Chr	Begin	End
3	153596226	154607238

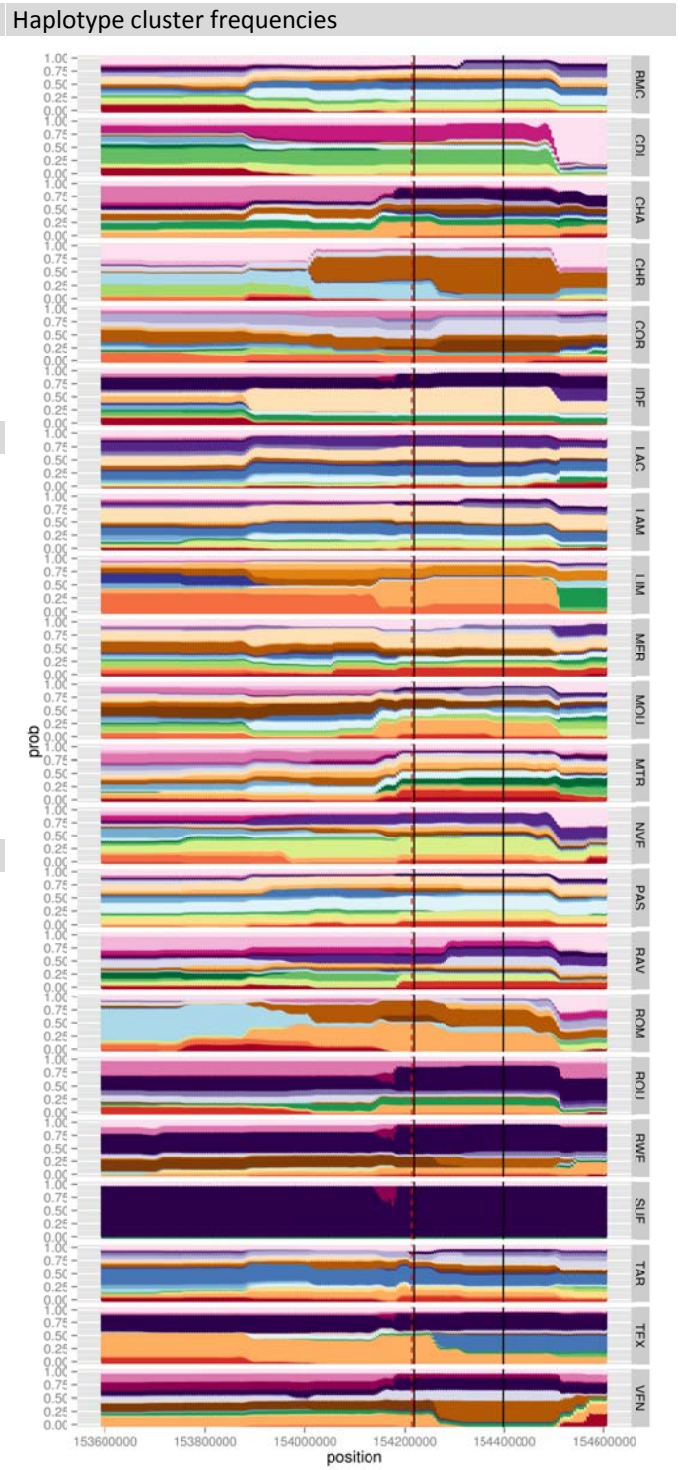
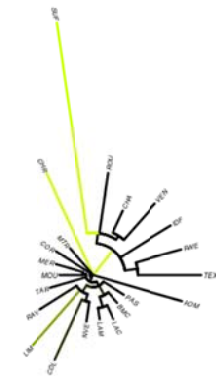
Best SNP: 154214608  
Candidate gene: *MSRB3*  
(associated with ear position in dogs [8] and ear size in pigs [9]).



SNP local tree



Haplotype local tree

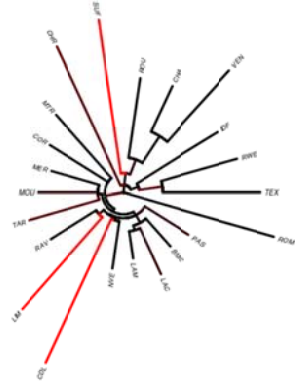


Region		
Chr	Begin	End
3	209486703	211328458

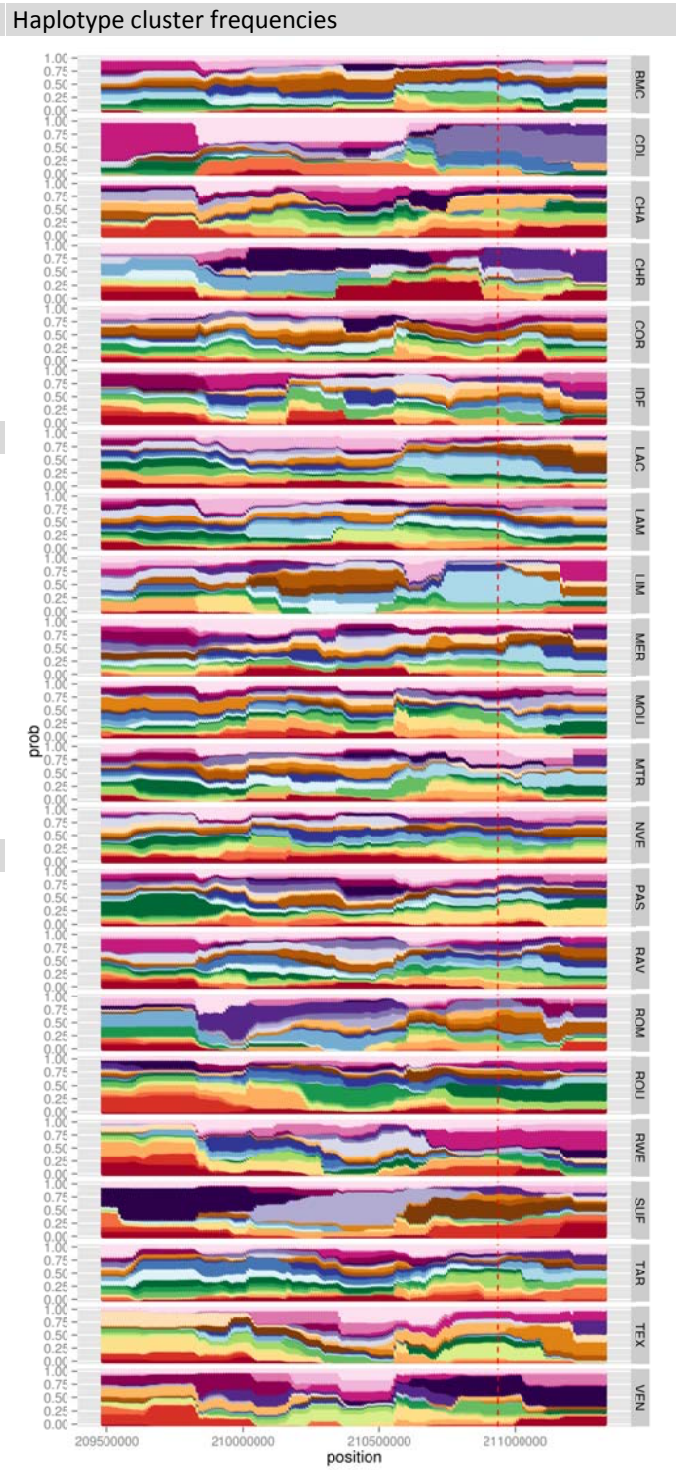
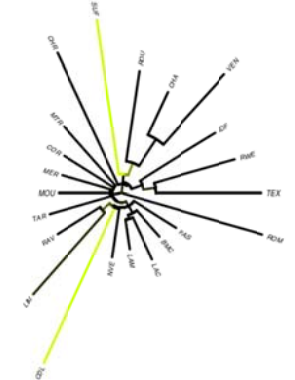
Best SNP: 210938692  
 Located in *FKBP4* [1].



SNP local tree



Haplotype local tree

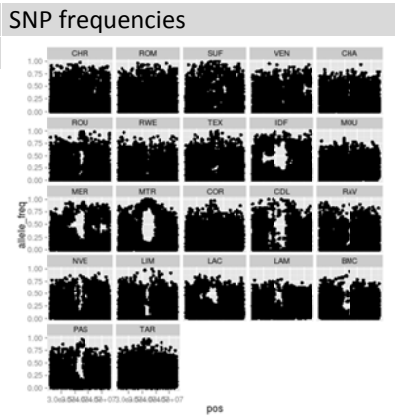




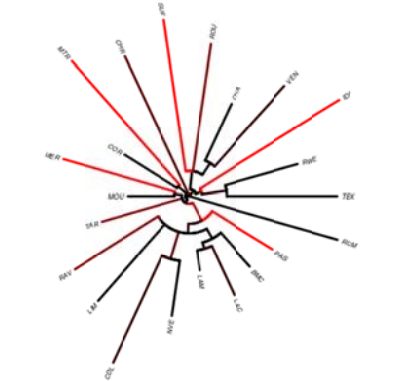


Region		
Chr	Begin	End
6	26112692	47828792

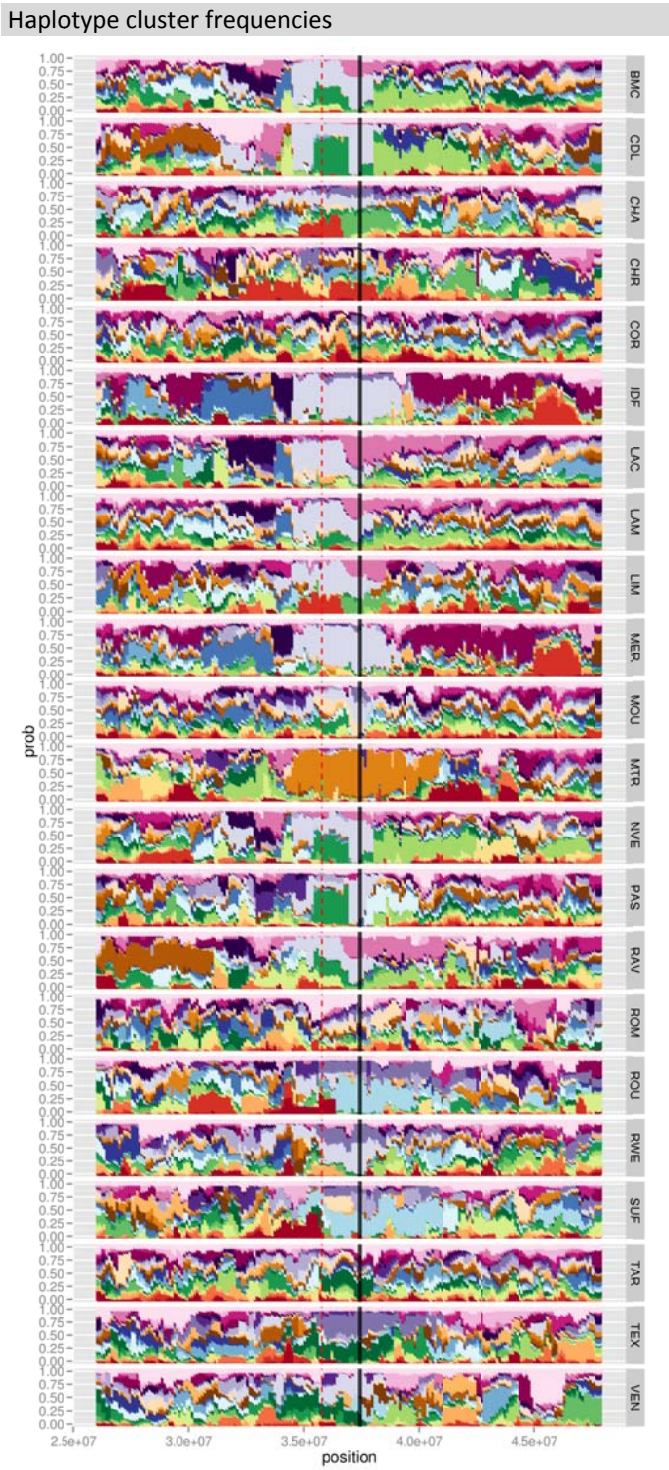
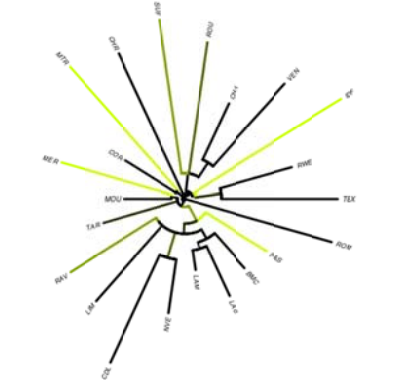
Best SNP: 35762202  
 Located in *FAM13A* [1].  
 Candidate genes: *ABCG2*  
 (associated with milk production in sheep [10])  
 and *NCAPG2/LCORL*  
 (associated with height in cattle [11]) outlined in black.



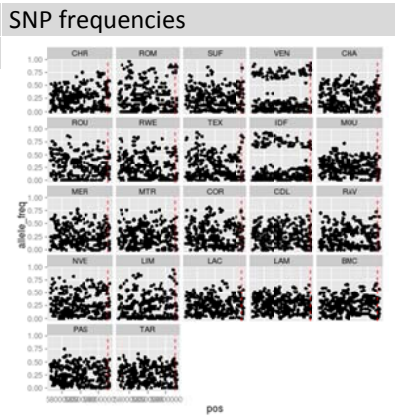
SNP local tree



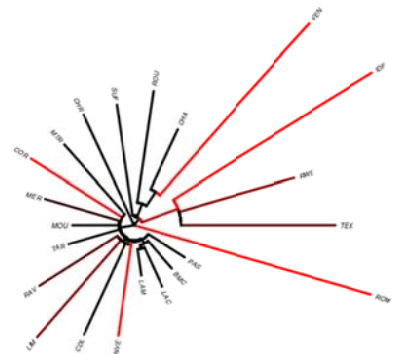
Haplotype local tree



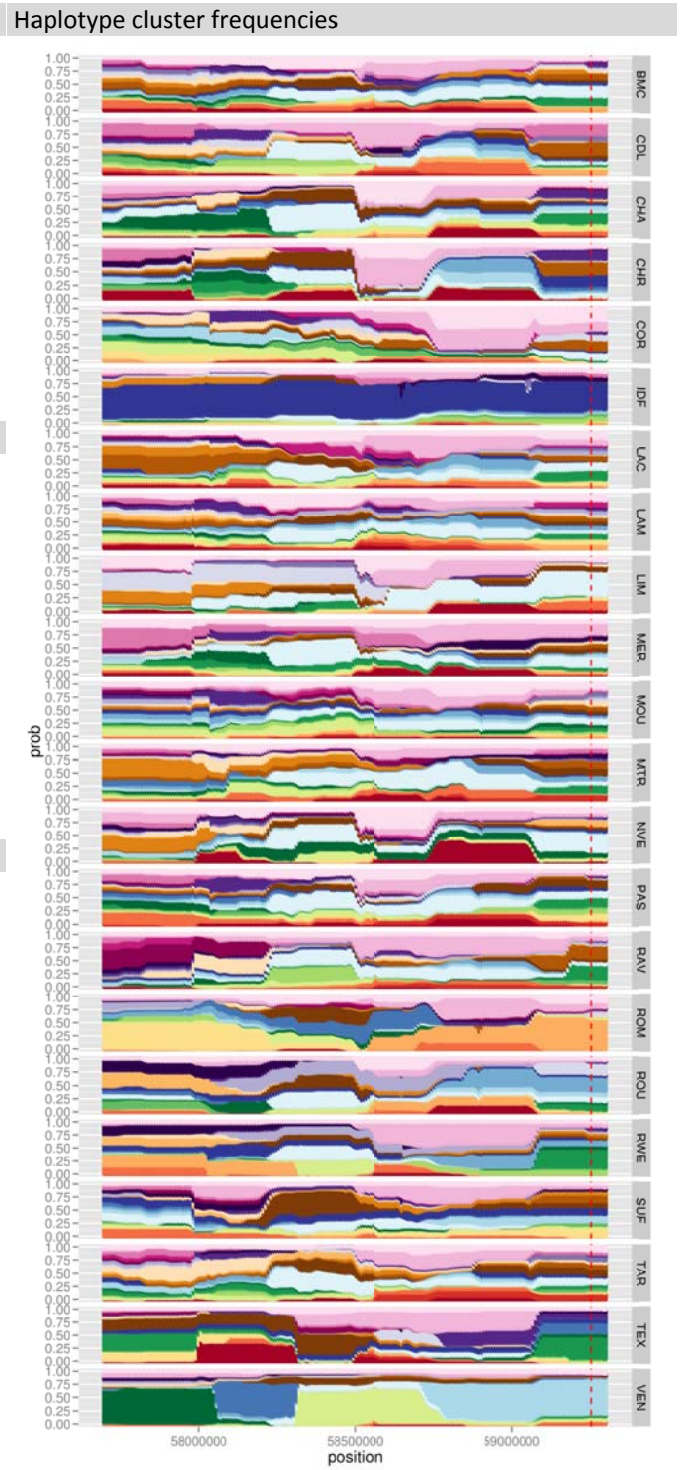
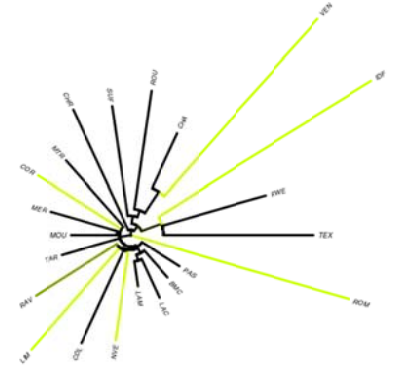
Region		
Chr	Begin	End
6	57693565	59301412
Best SNP: 59252594		



SNP local tree

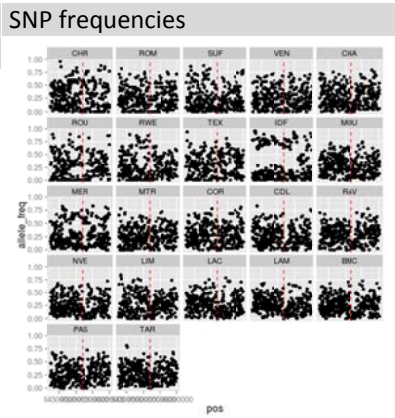


Haplotype local tree

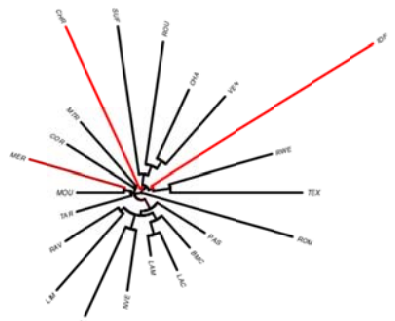


Region		
Chr	Begin	End
6	94242119	96008214

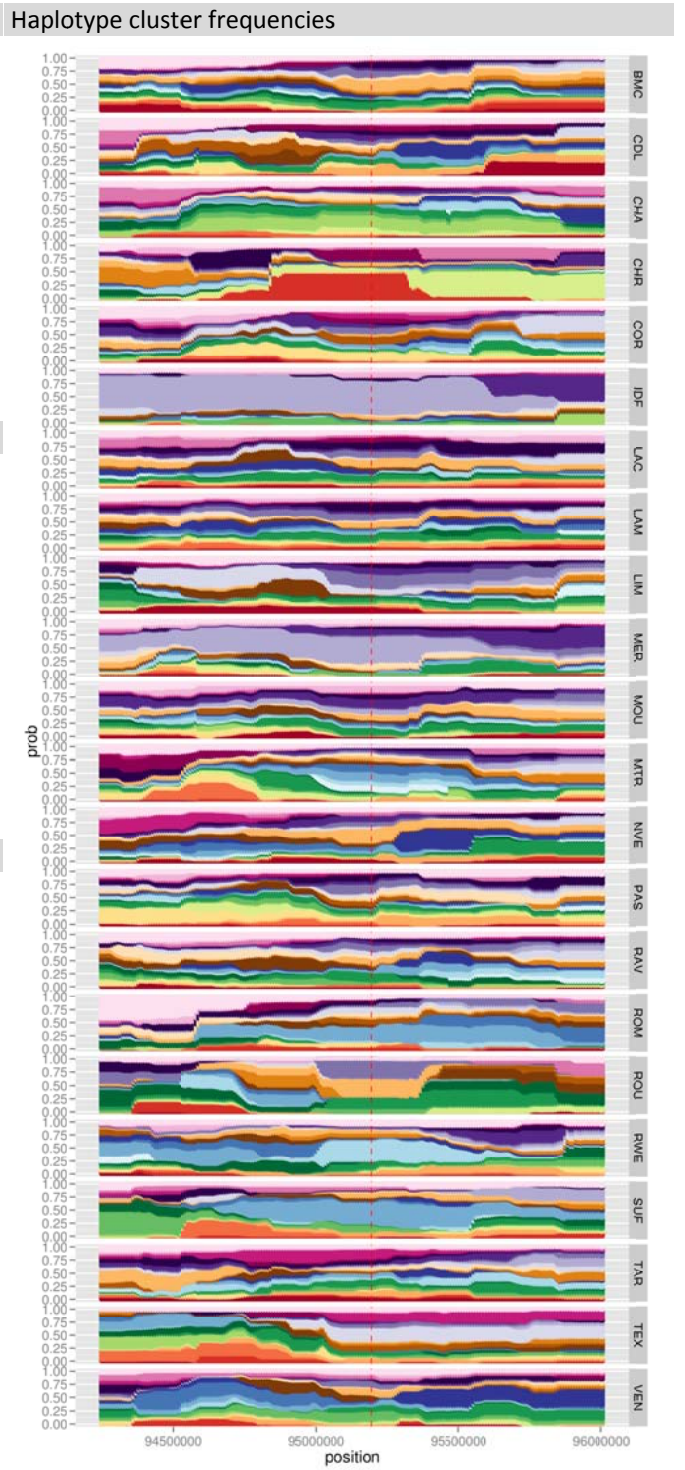
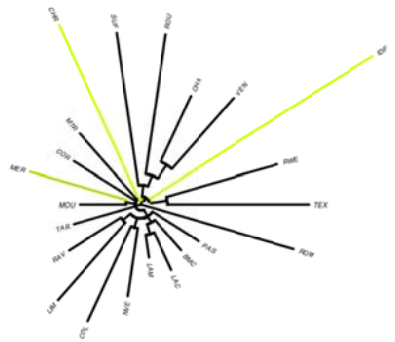
Best SNP: 95193314  
 Located in *C4orf22* [1].



SNP local tree



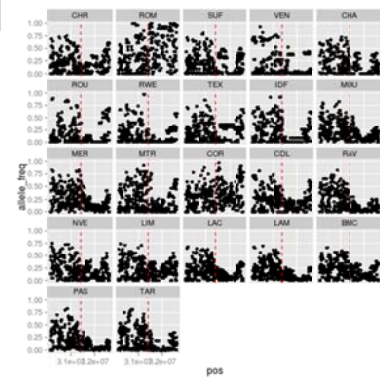
Haplotype local tree



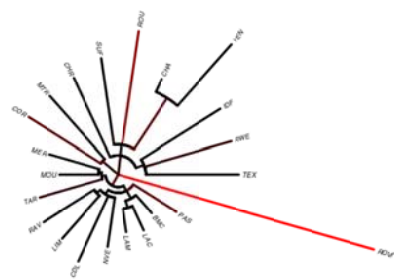
Region			SNP frequencies	Haplotype cluster frequencies
Chr	Begin	End		

8 30158735 32611917

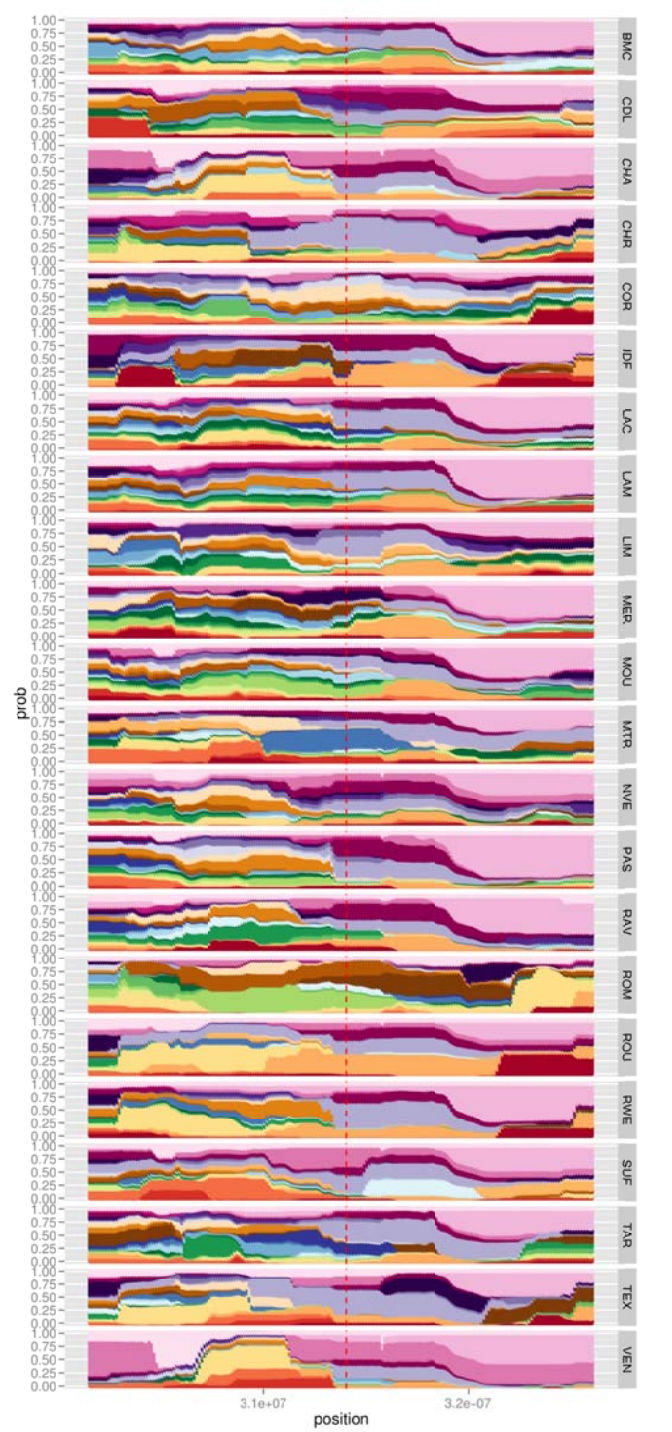
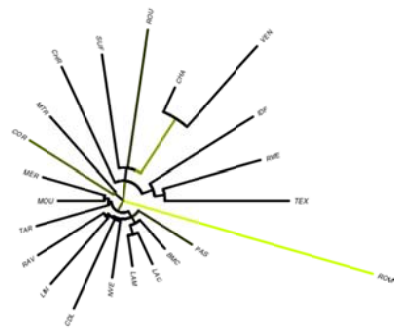
Best SNP: 31402984



SNP local tree

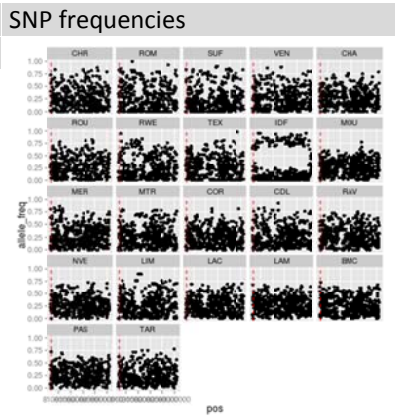


Haplotype local tree

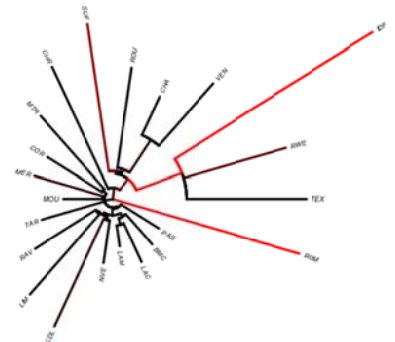


Region		
Chr	Begin	End
8	80676681	83105269

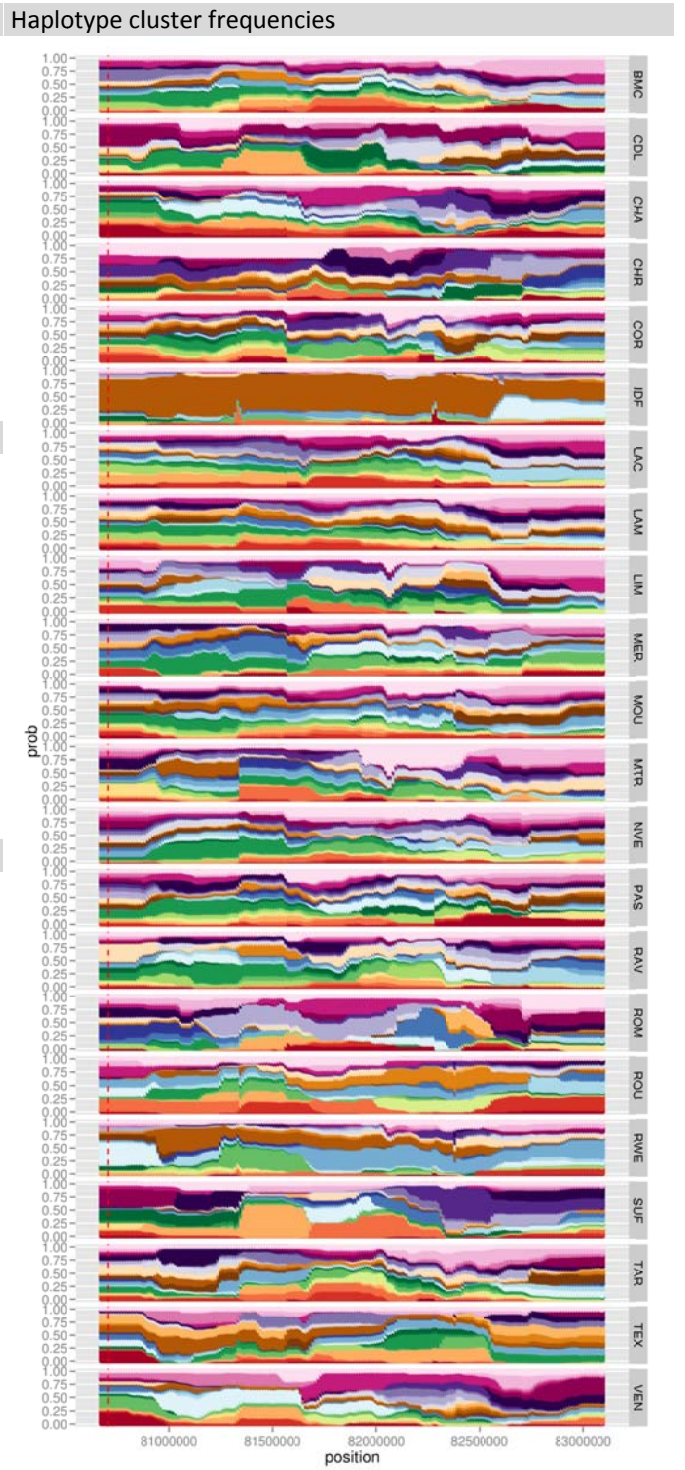
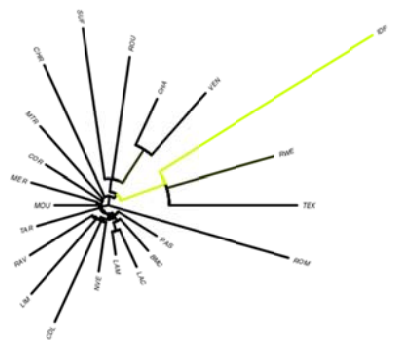
Best SNP: 80707878  
 Located in *zdhhc14* [1].

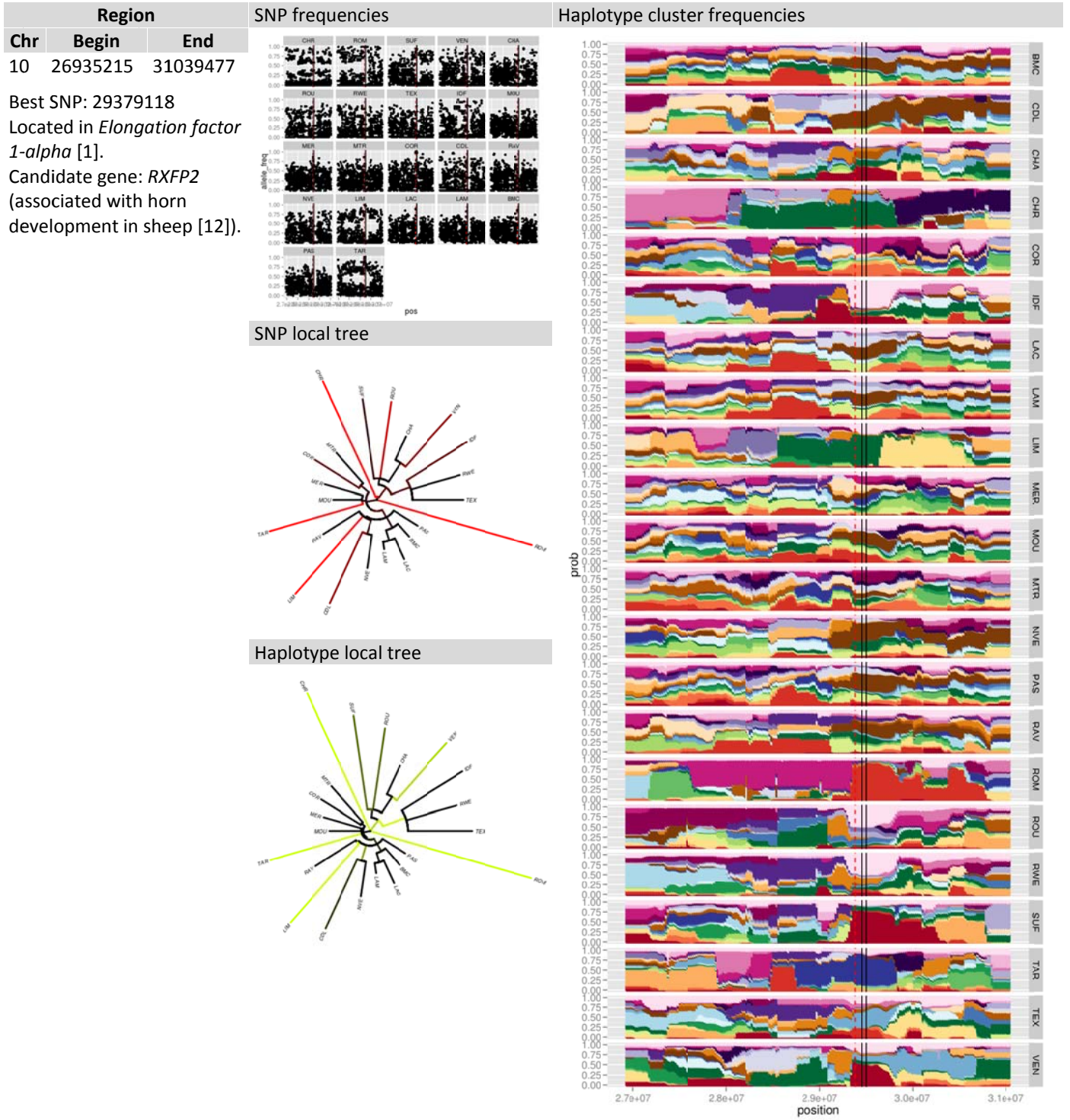


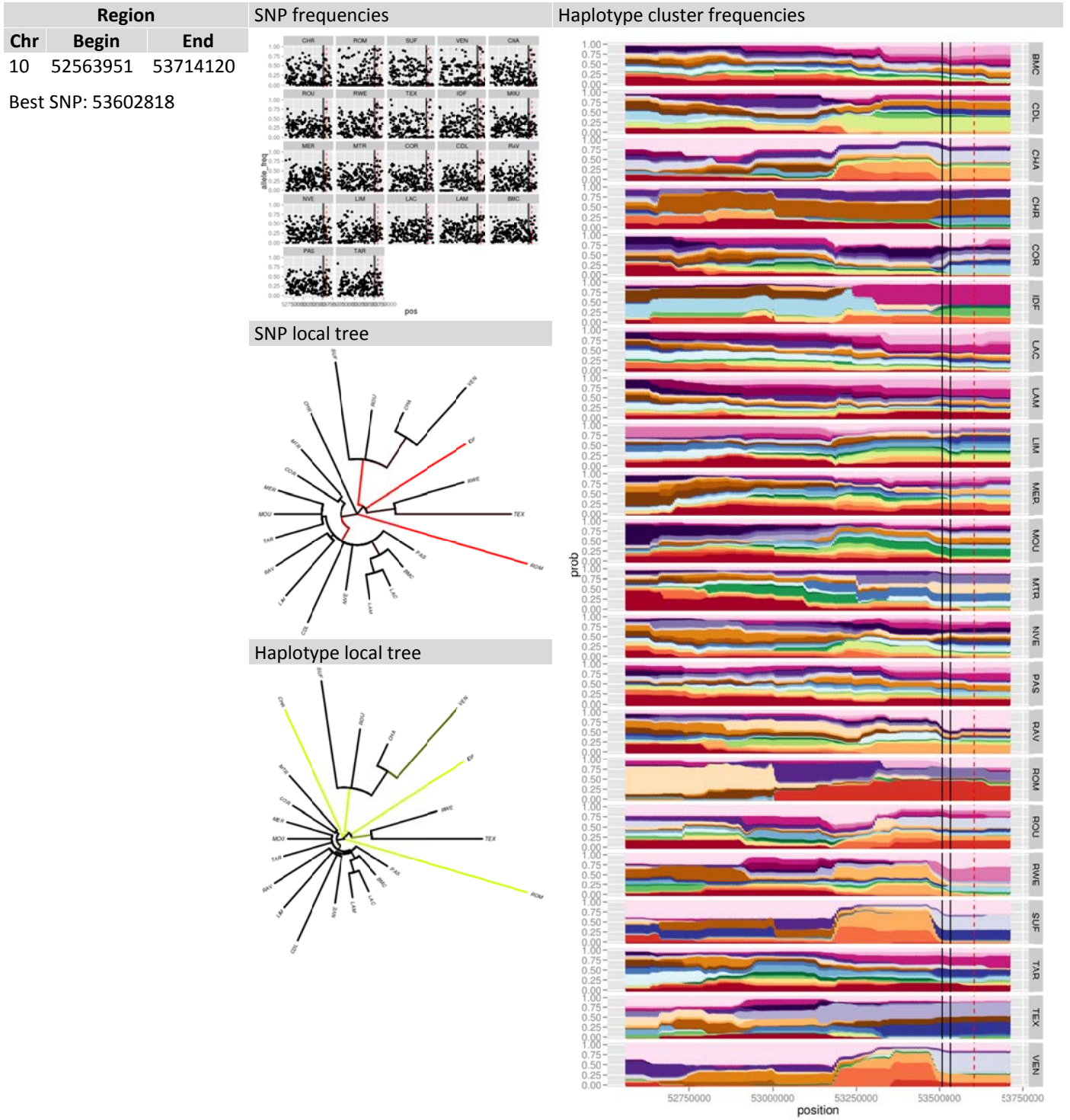
SNP local tree



Haplotype local tree

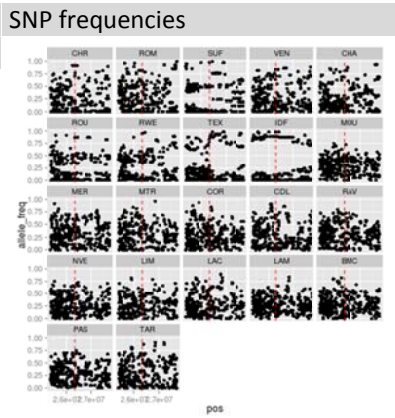




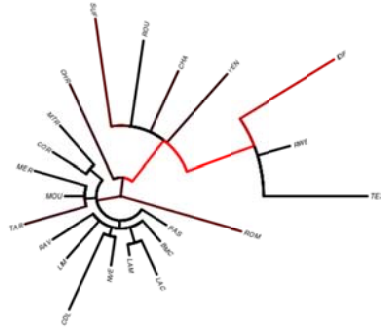


Region		
Chr	Begin	End
11	25369914	27740997

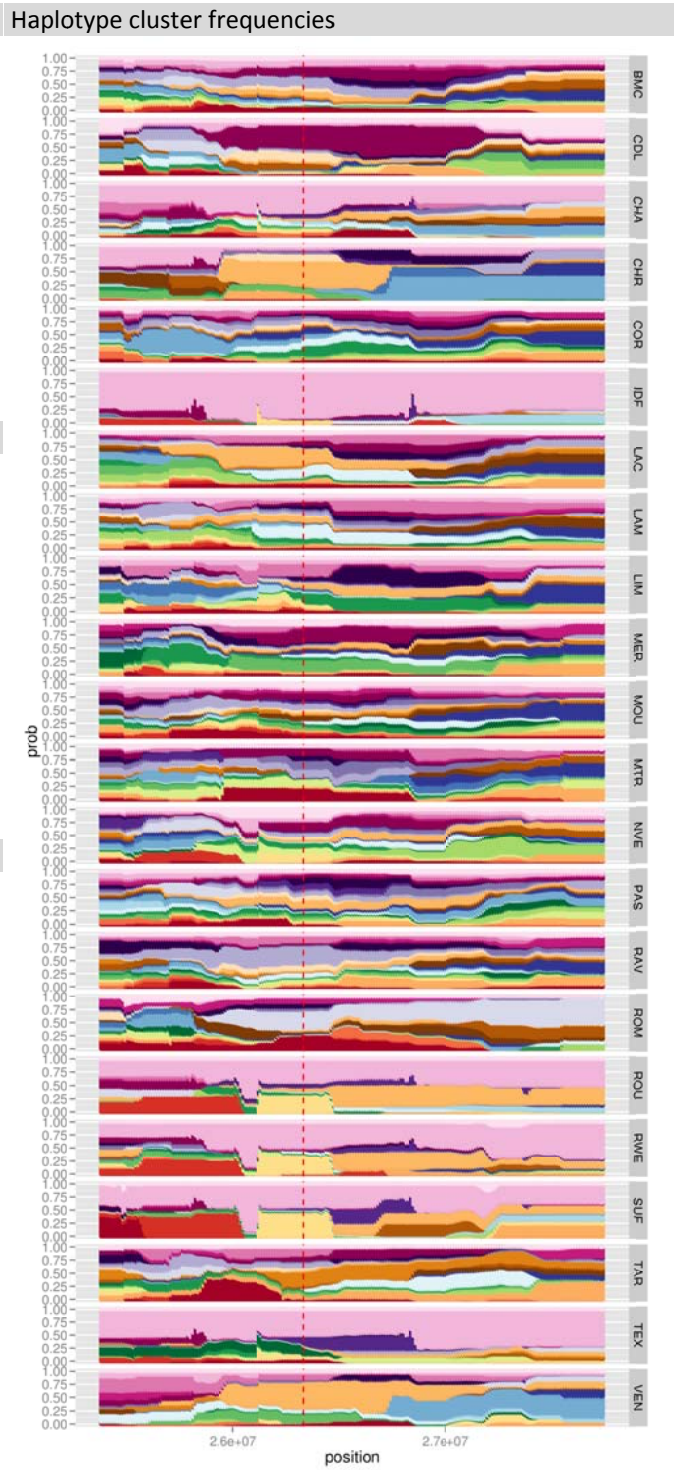
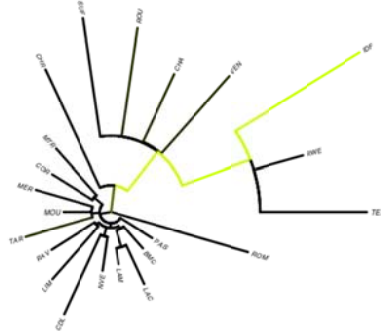
Best SNP: 26333173  
 Located in *ALOX12* [1].



SNP local tree



Haplotype local tree

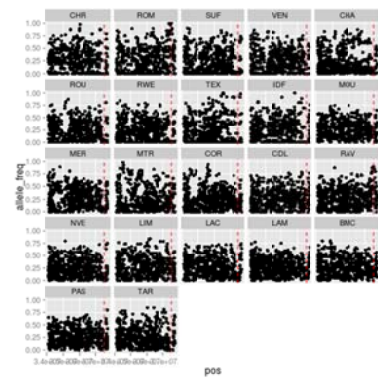




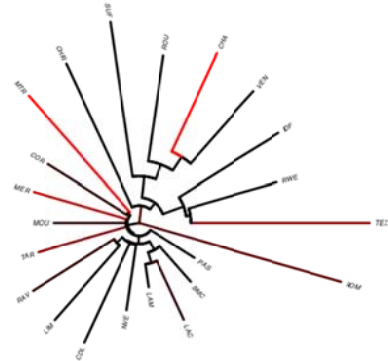
Region			SNP frequencies	Haplotype cluster frequencies
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Chr	Begin	End
13	34108089	37740655

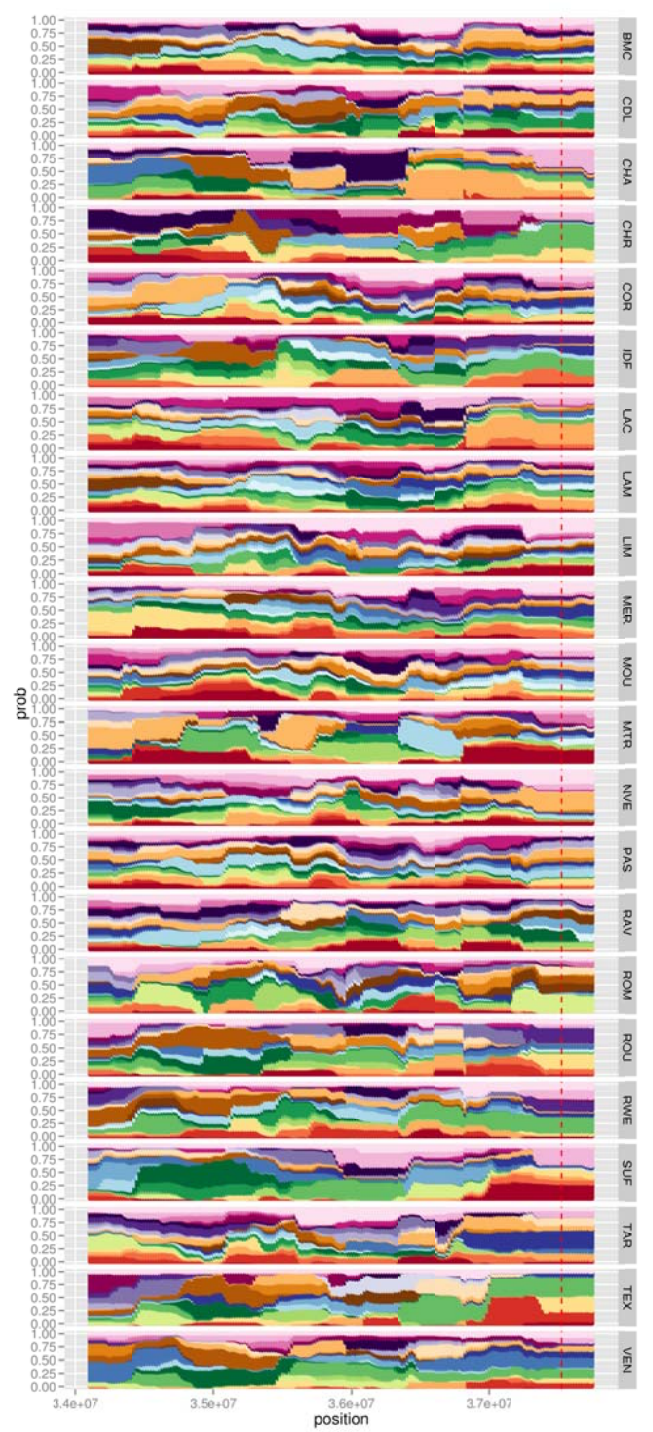
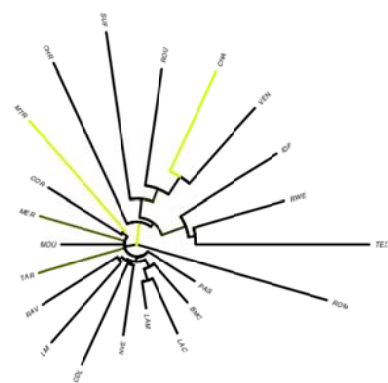
Best SNP: 37524442



SNP local tree

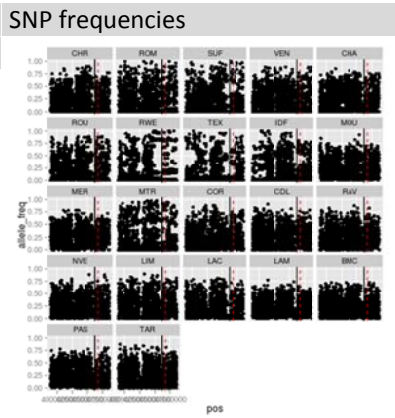


Haplotype local tree

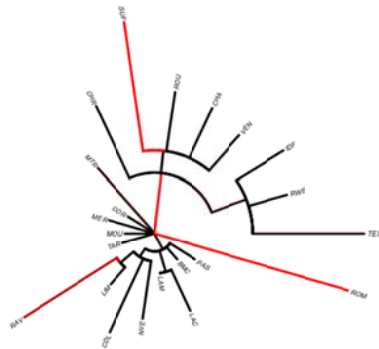


Region		
Chr	Begin	End
13	38955039	48646582

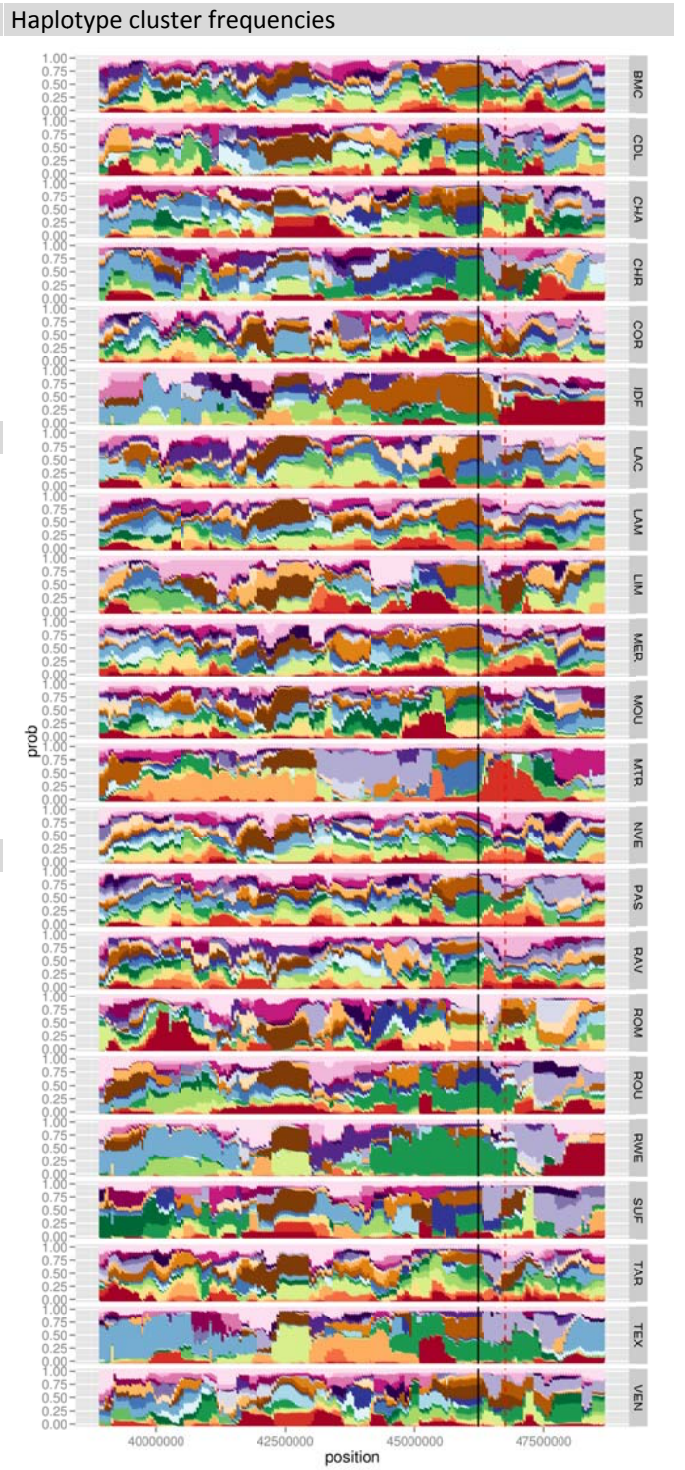
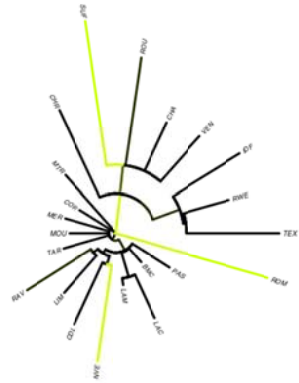
Best SNP: 46759682  
 Located in *pcna* [1].



SNP local tree

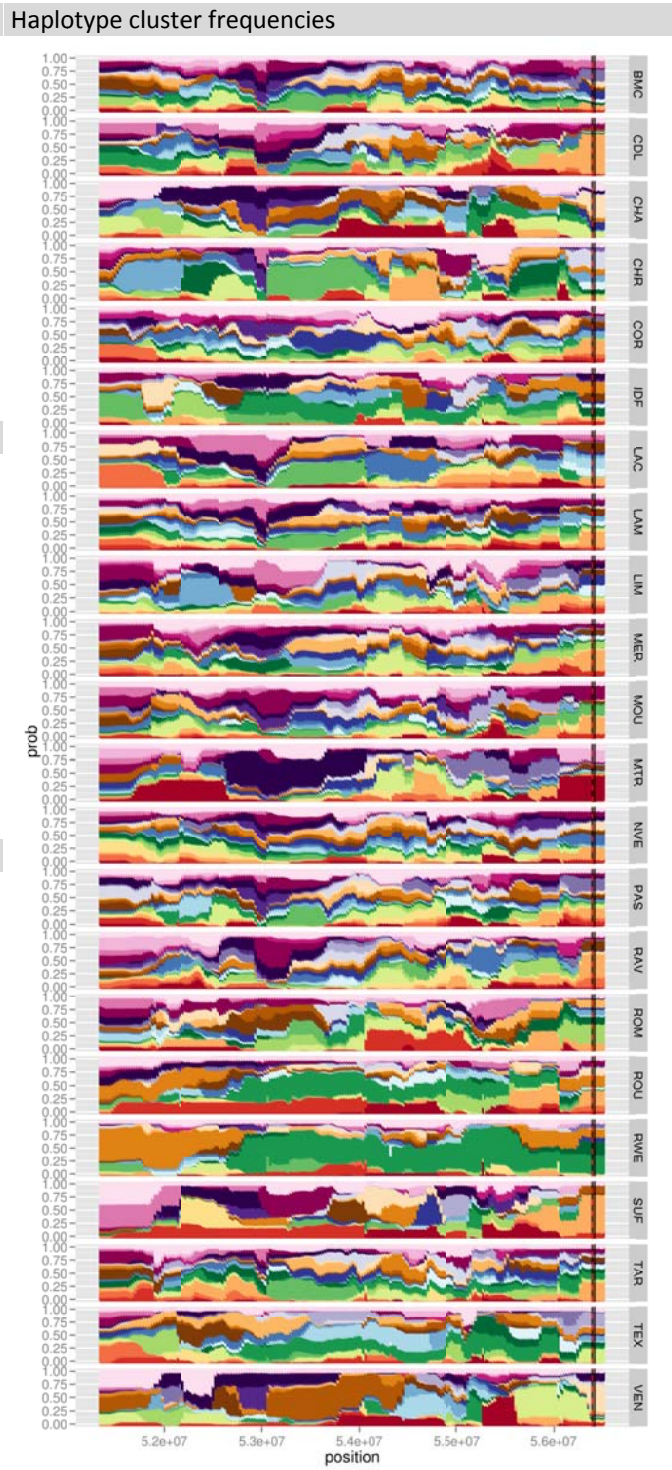
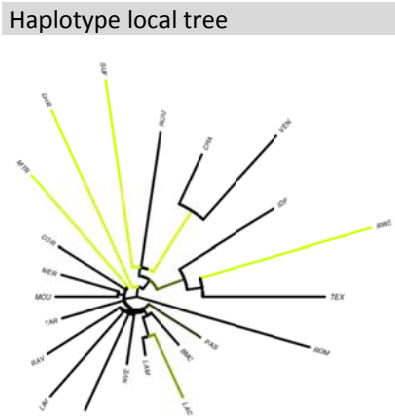
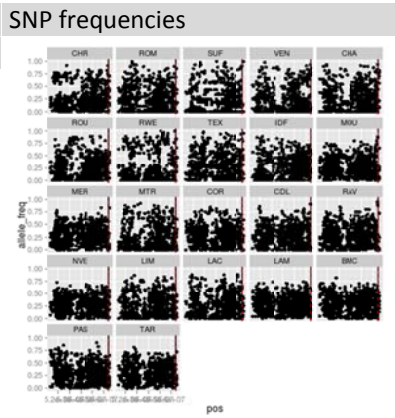


Haplotype local tree



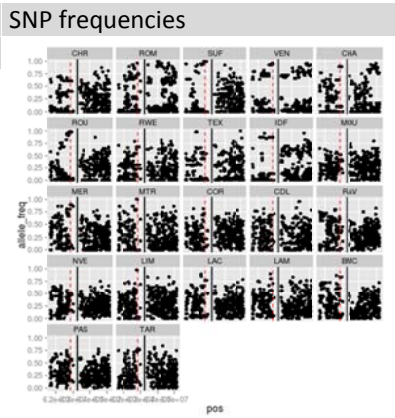
Region		
Chr	Begin	End
13	51357557	56499047

Best SNP: 56389183  
 Located in candidate gene *EDN3* [1] (involved in melanocyte development and differentiation [13]).

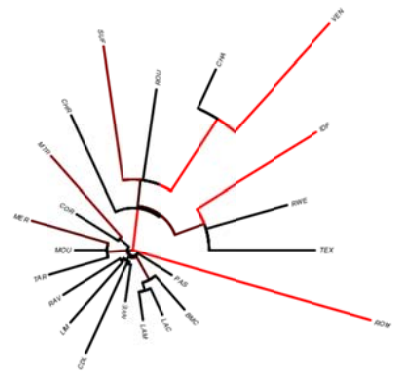


Region		
Chr	Begin	End
13	61688330	65155663

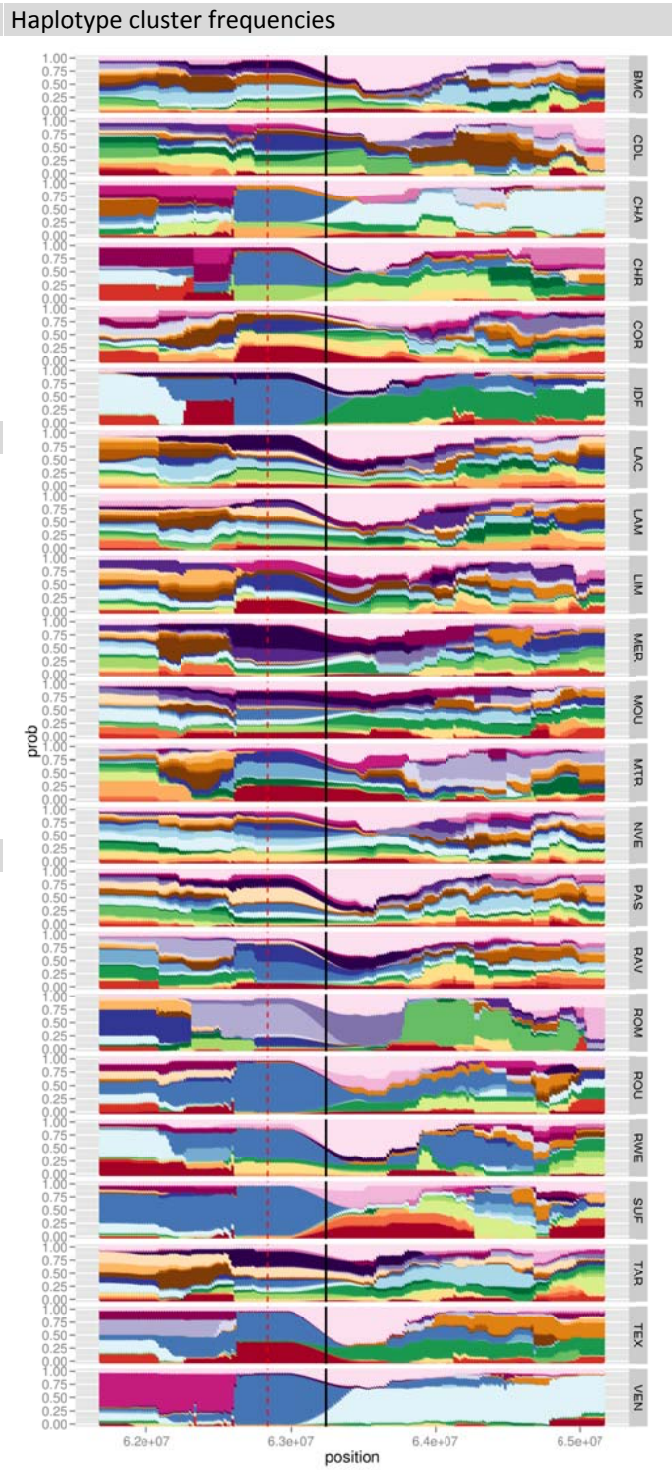
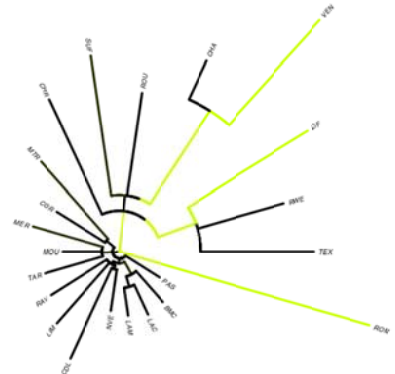
Best SNP: 62839711  
 Located in *RALY* [1].  
 Candidate gene: *ASIP*  
 (involved in melanin production [14]).

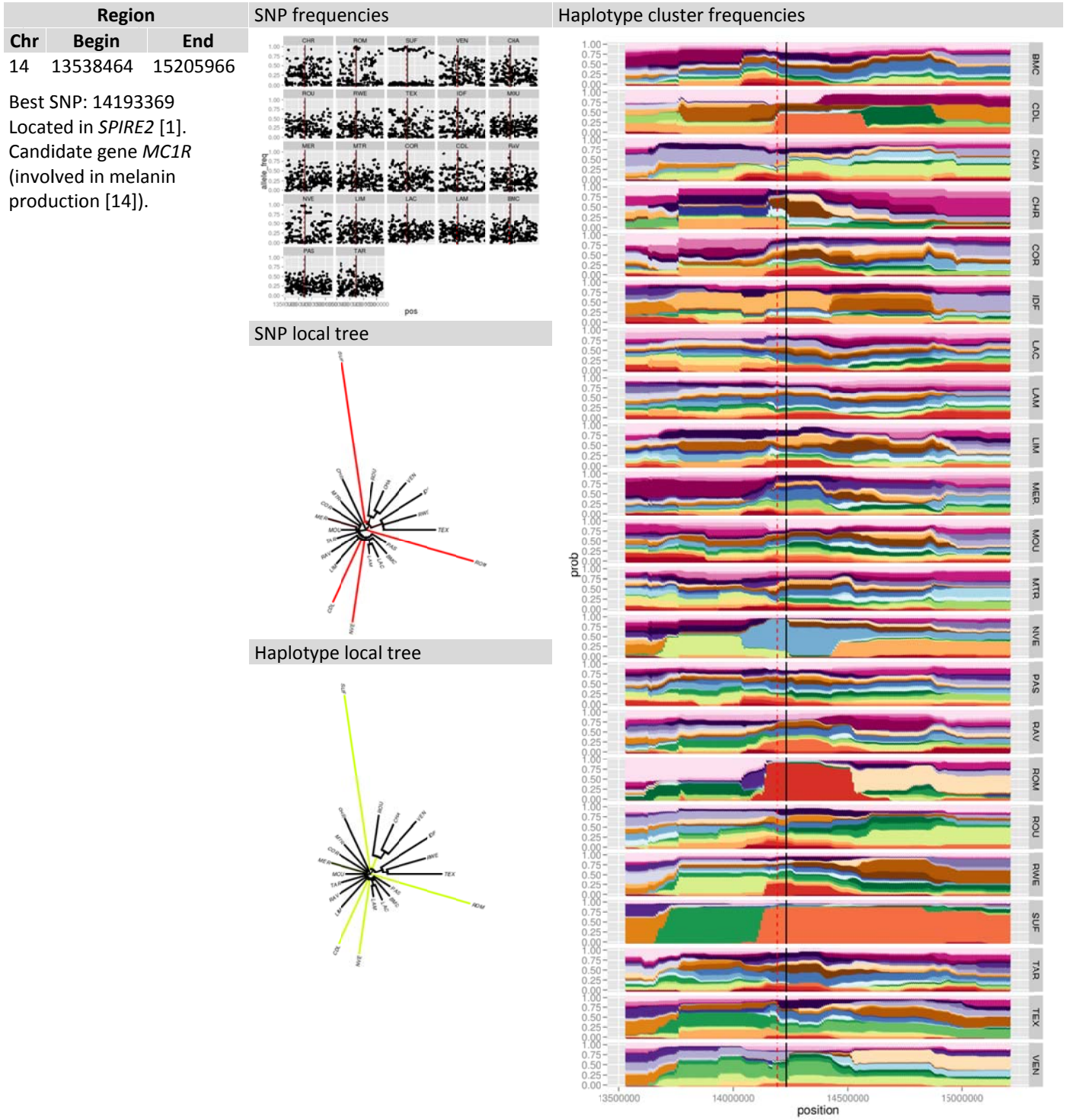


SNP local tree



Haplotype local tree

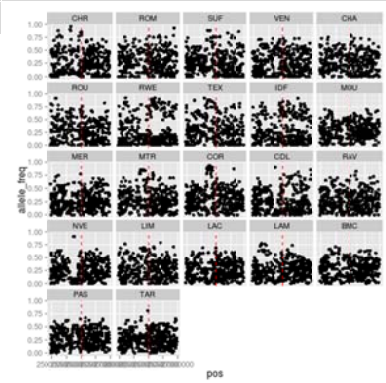




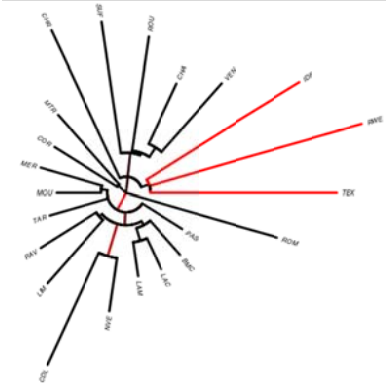
Region			SNP frequencies	Haplotype cluster frequencies
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Chr	Begin	End
14	24961598	26974355

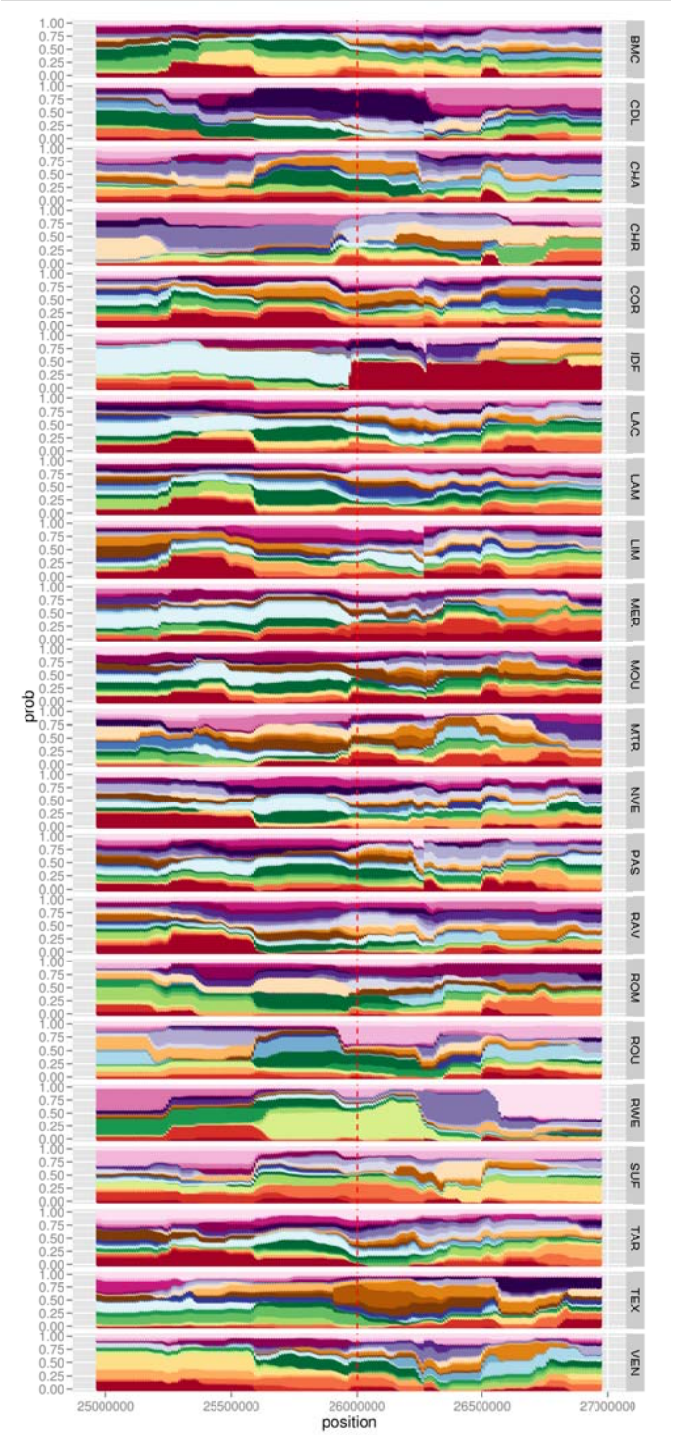
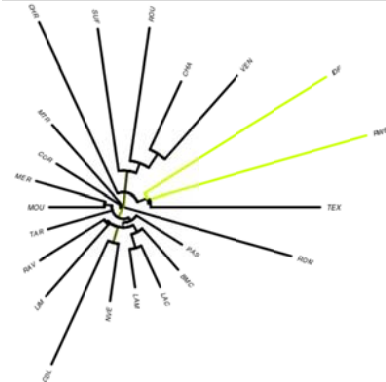
Best SNP: 26000318



SNP local tree

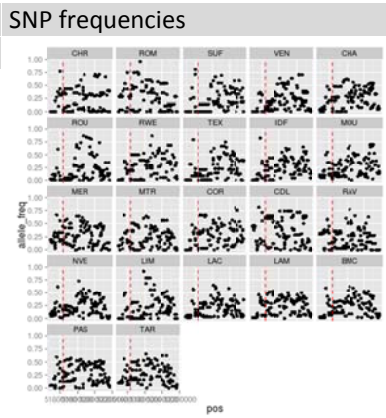


Haplotype local tree

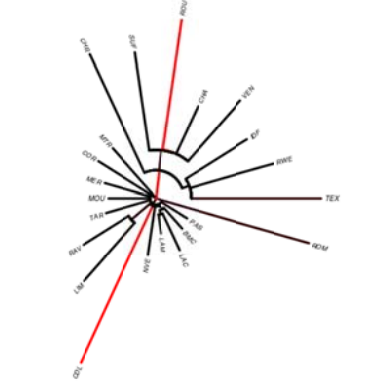


Region		
Chr	Begin	End
14	51491696	52169340

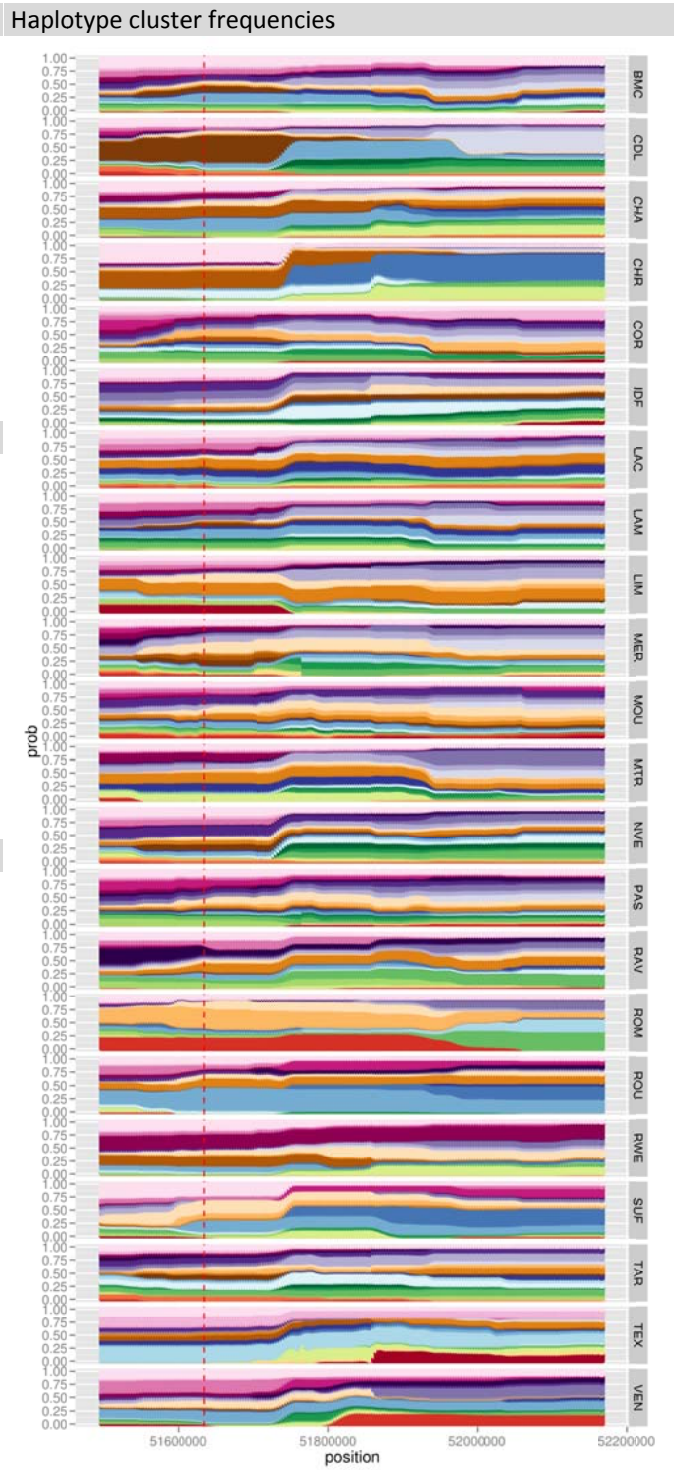
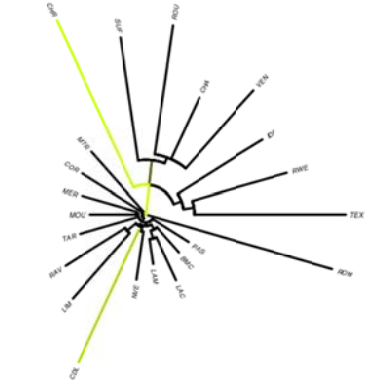
Best SNP: 51634415  
 Located in *BCAM* [1].



SNP local tree

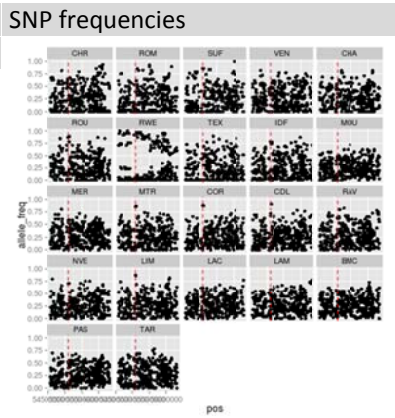


Haplotype local tree

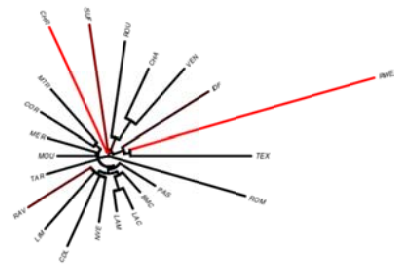


Region		
Chr	Begin	End
14	54580893	56319878

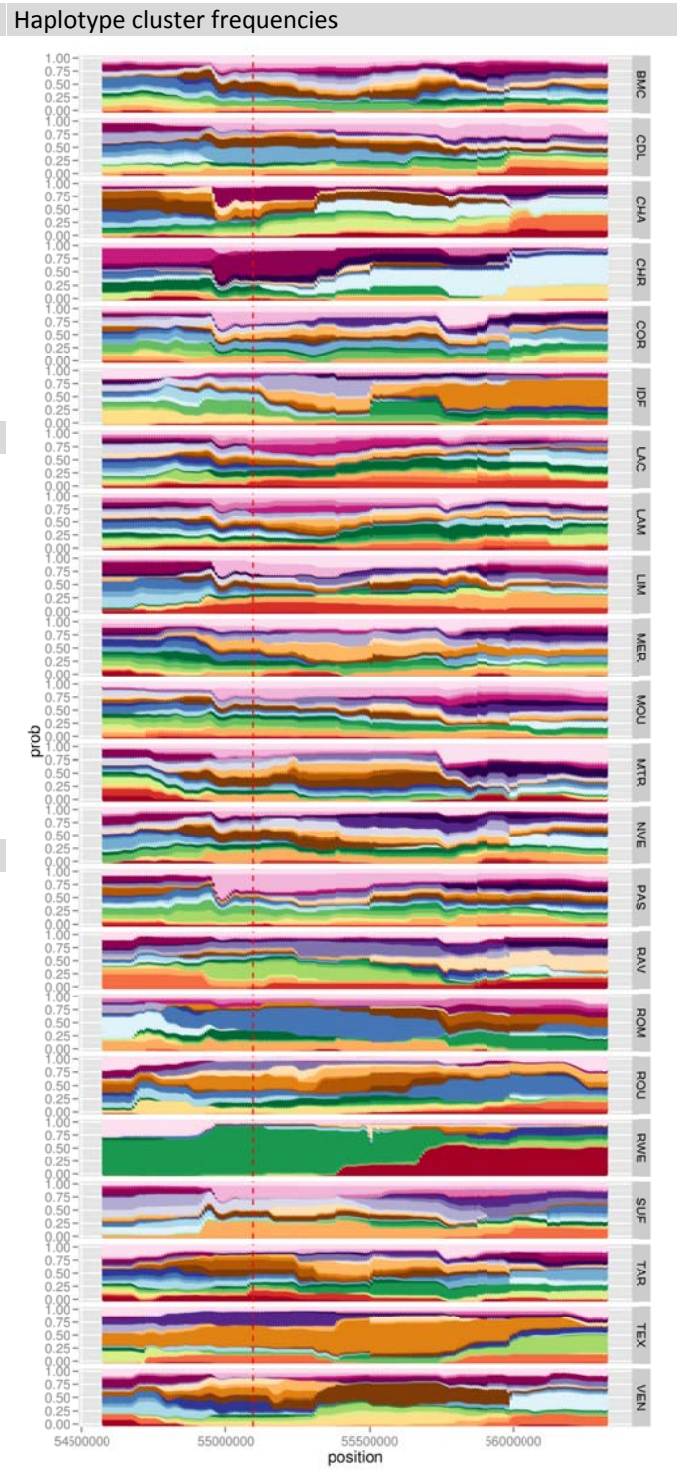
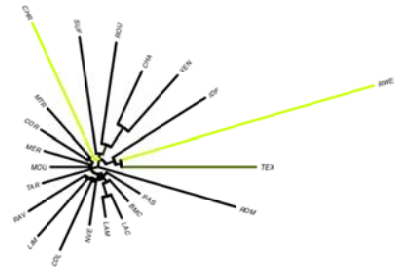
Best SNP: 55094151  
 Located in *IRF3* [1].



SNP local tree



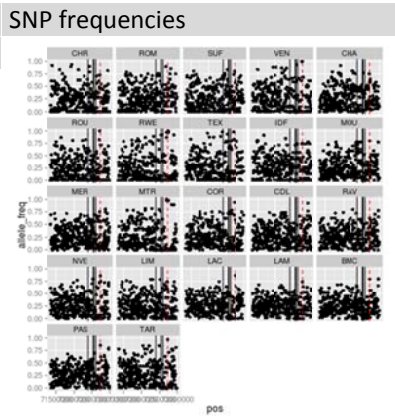
Haplotype local tree



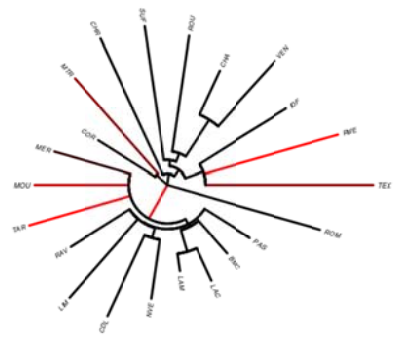


Region		
Chr	Begin	End
15	71351365	72991175

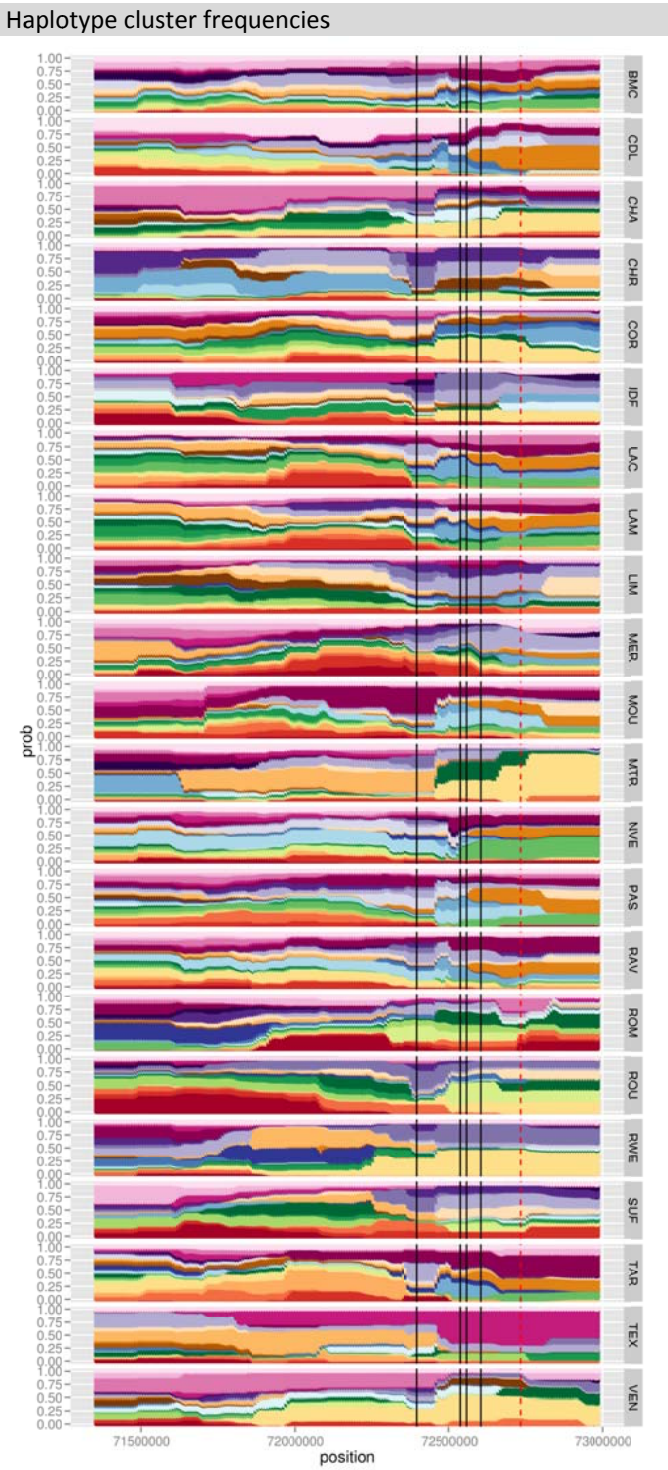
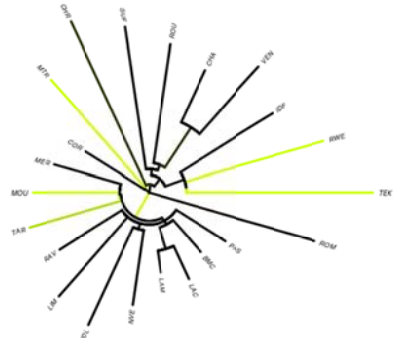
Best SNP: 72735040  
Candidate genes: *ALX4* and *EXT2* (involved in limb and skeletal development [15]).



SNP local tree

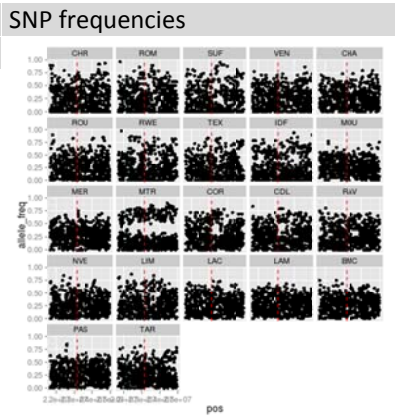


Haplotype local tree

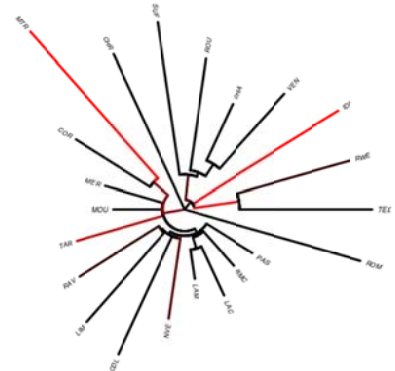


Region		
Chr	Begin	End
16	21691437	24960722

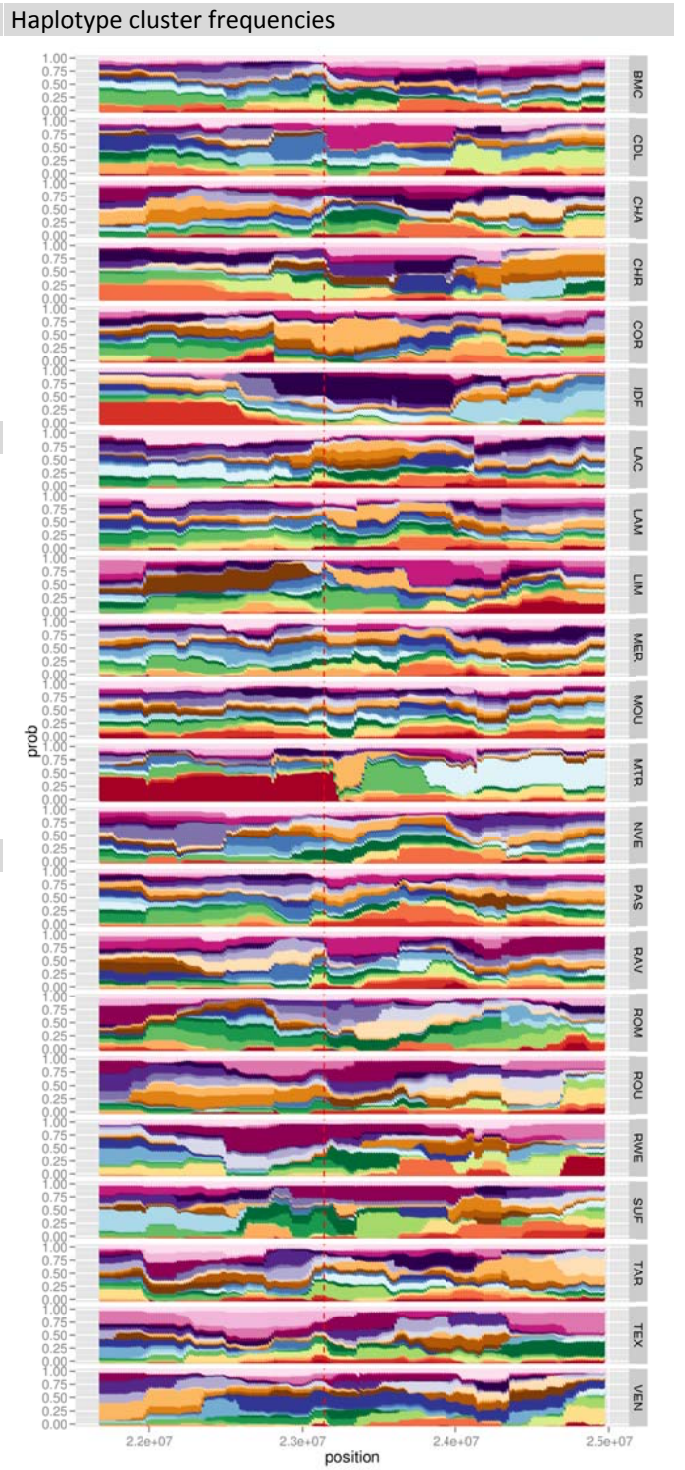
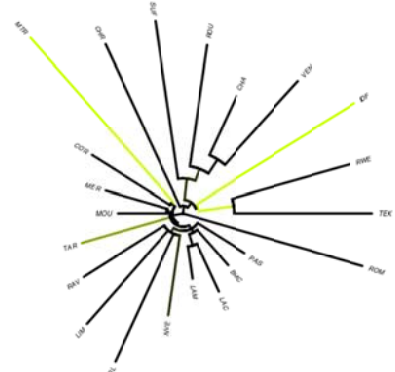
Best SNP: 23137683  
 Located in *Ankrd55* [1].



SNP local tree



Haplotype local tree

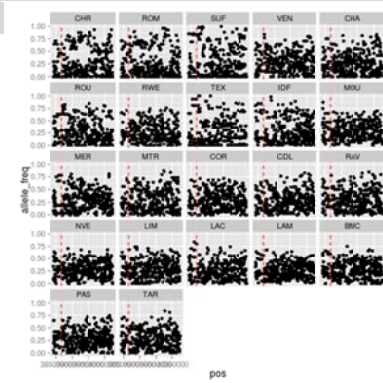




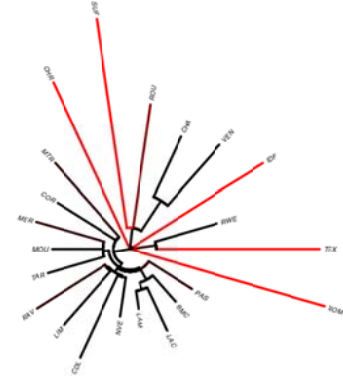
Region			SNP frequencies	Haplotype cluster frequencies
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Chr	Begin	End
16	38429345	40246375

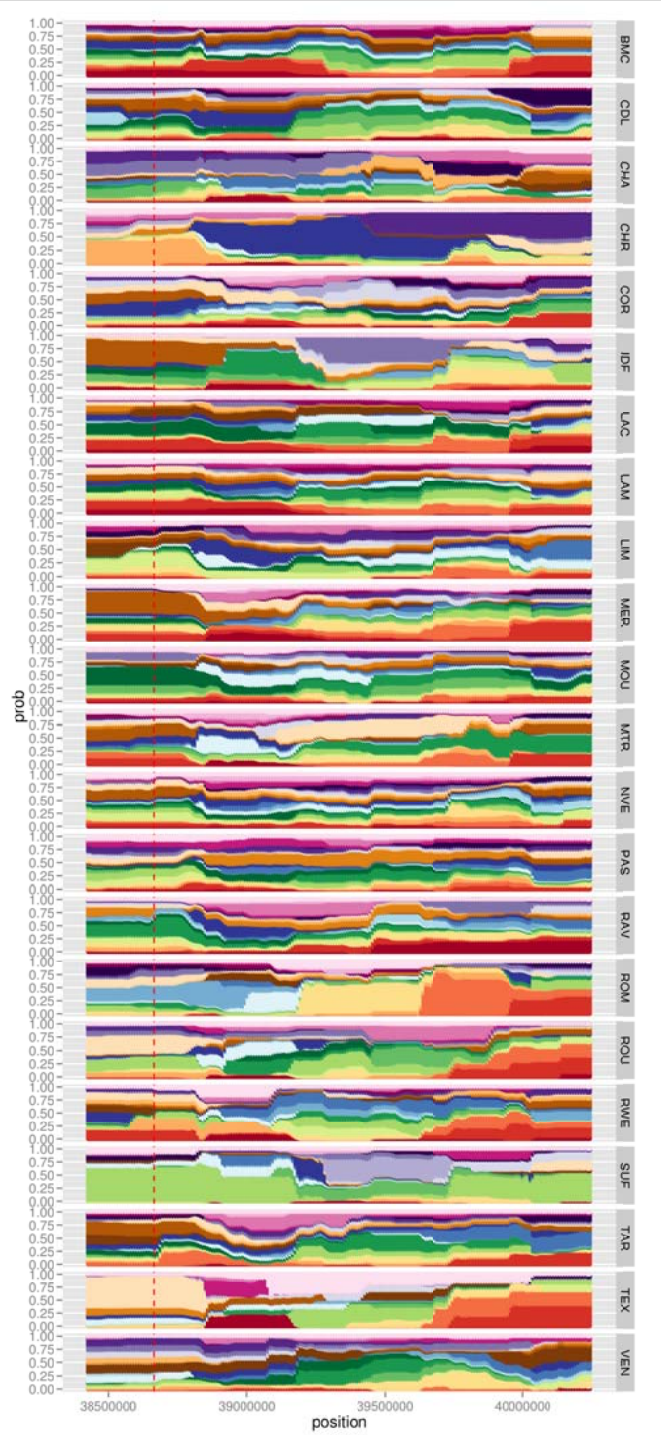
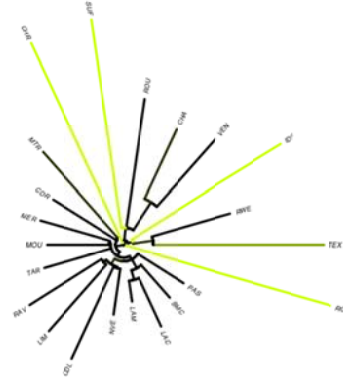
Best SNP: 38664205



SNP local tree

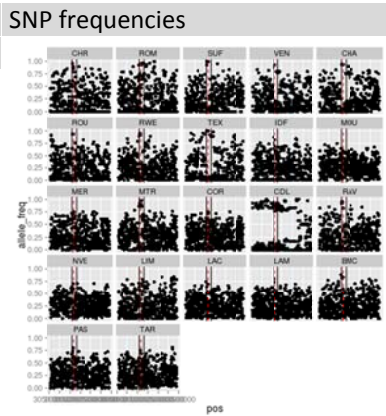


Haplotype local tree

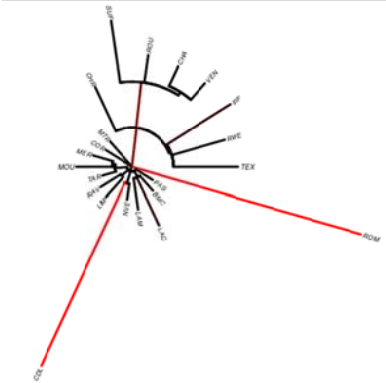


Region		
Chr	Begin	End
19	30571699	33417522

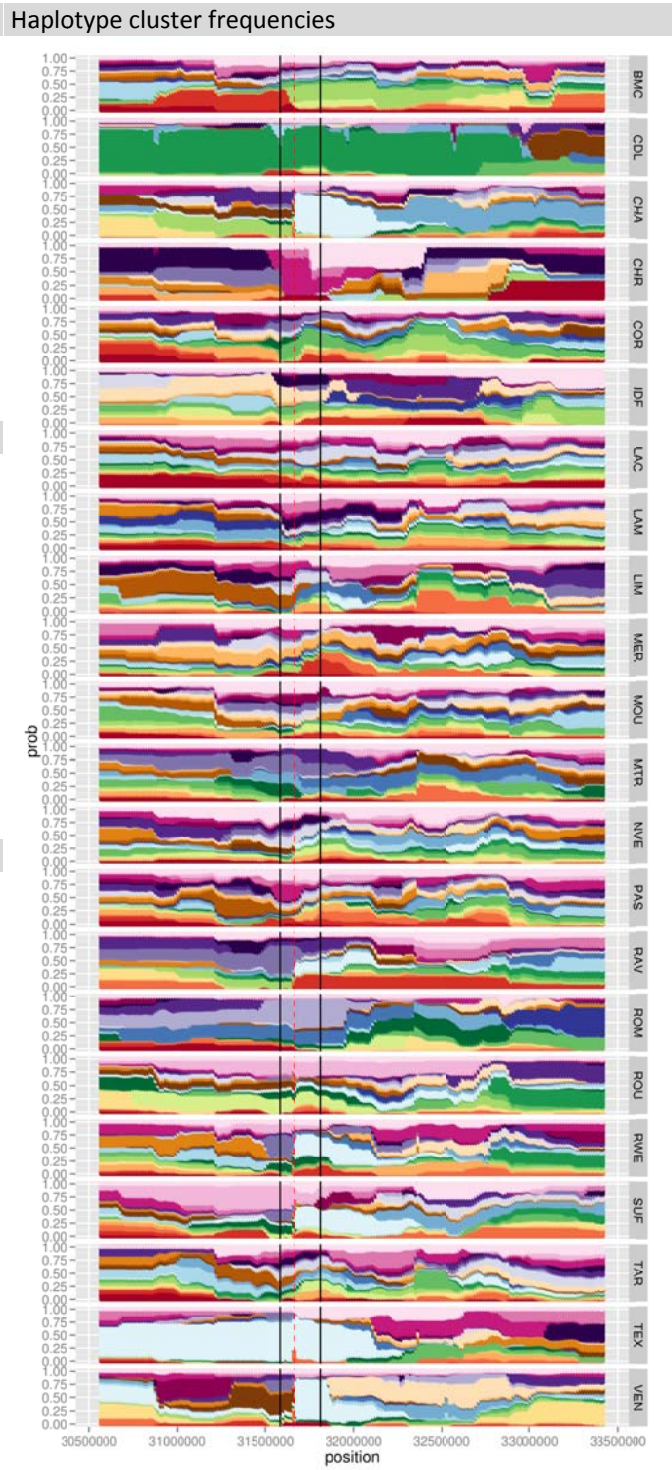
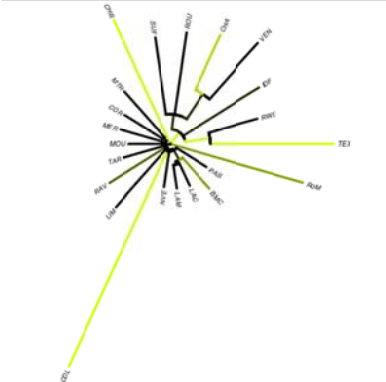
Best SNP: 31666785  
 Located in candidate gene:  
*MITF* (involved in melanocyte development [17]).



SNP local tree



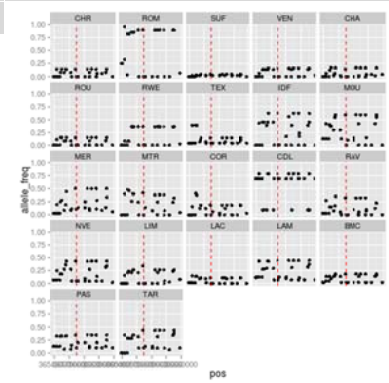
Haplotype local tree



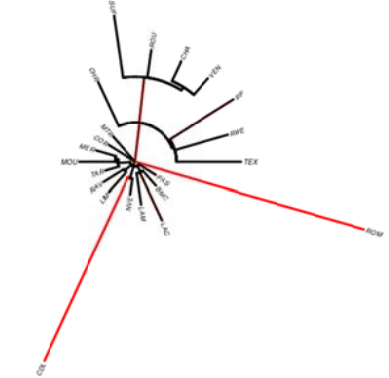
Region			SNP frequencies	Haplotype cluster frequencies
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Chr	Begin	End
19	36538771	36657385

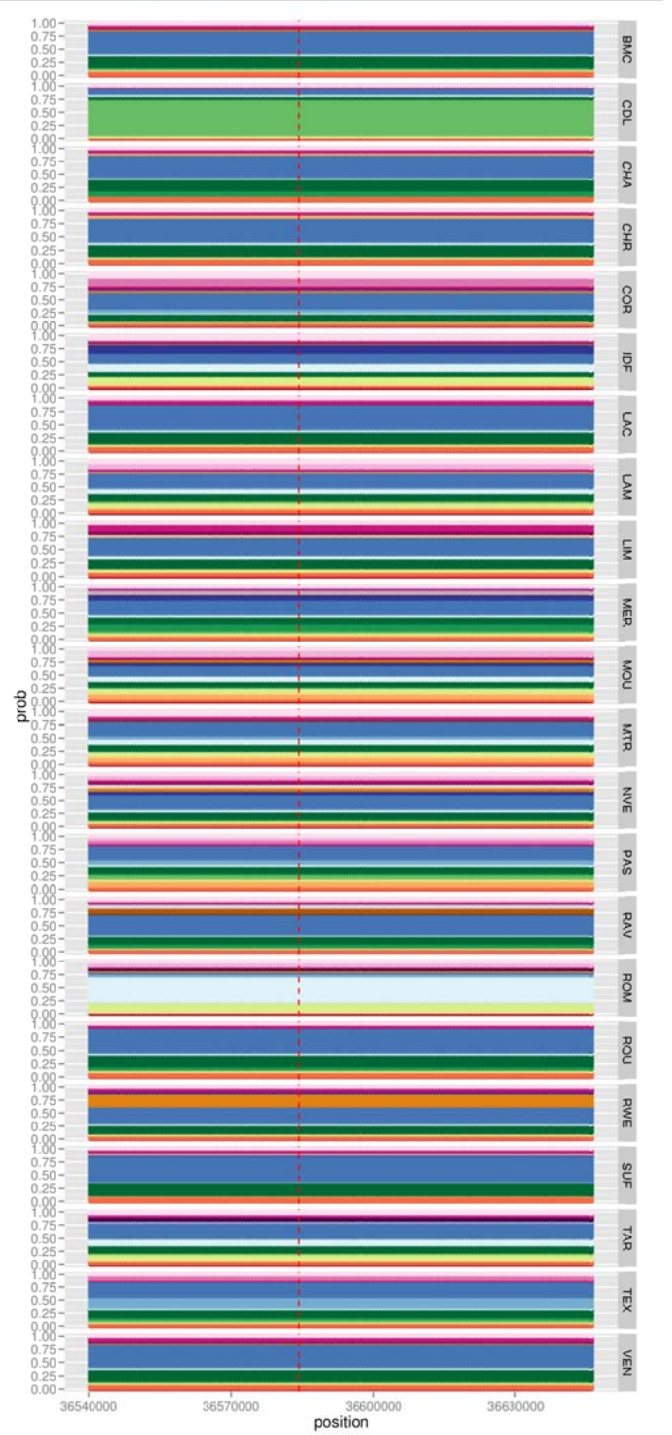
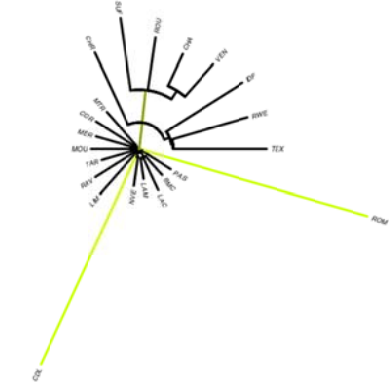
Best SNP: 36584288  
 Located in candidate gene *ADAMTS9* [1] (involved both in cardiovascular development and homeostasis [18]).



SNP local tree

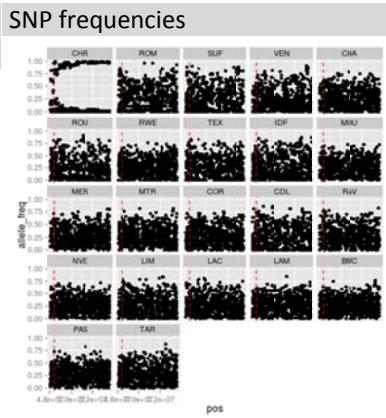


Haplotype local tree

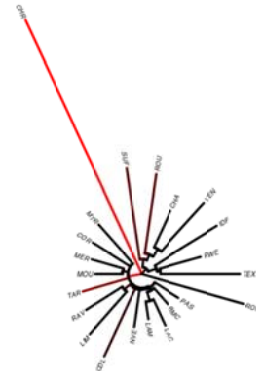


Region		
Chr	Begin	End
19	48086301	53558368

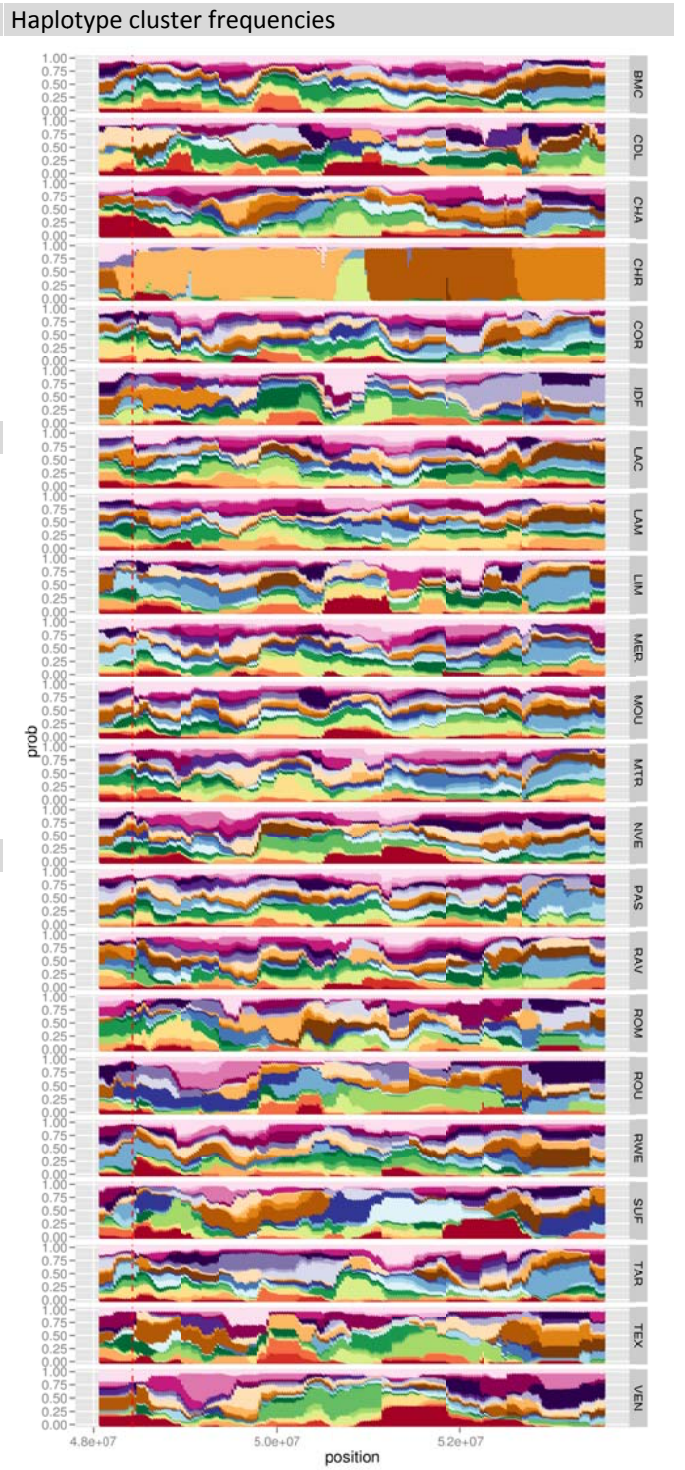
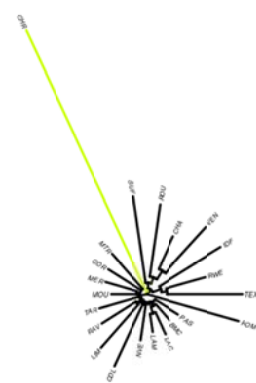
Best SNP: 48422940  
 Located in *SEMA3G* [1].



SNP local tree

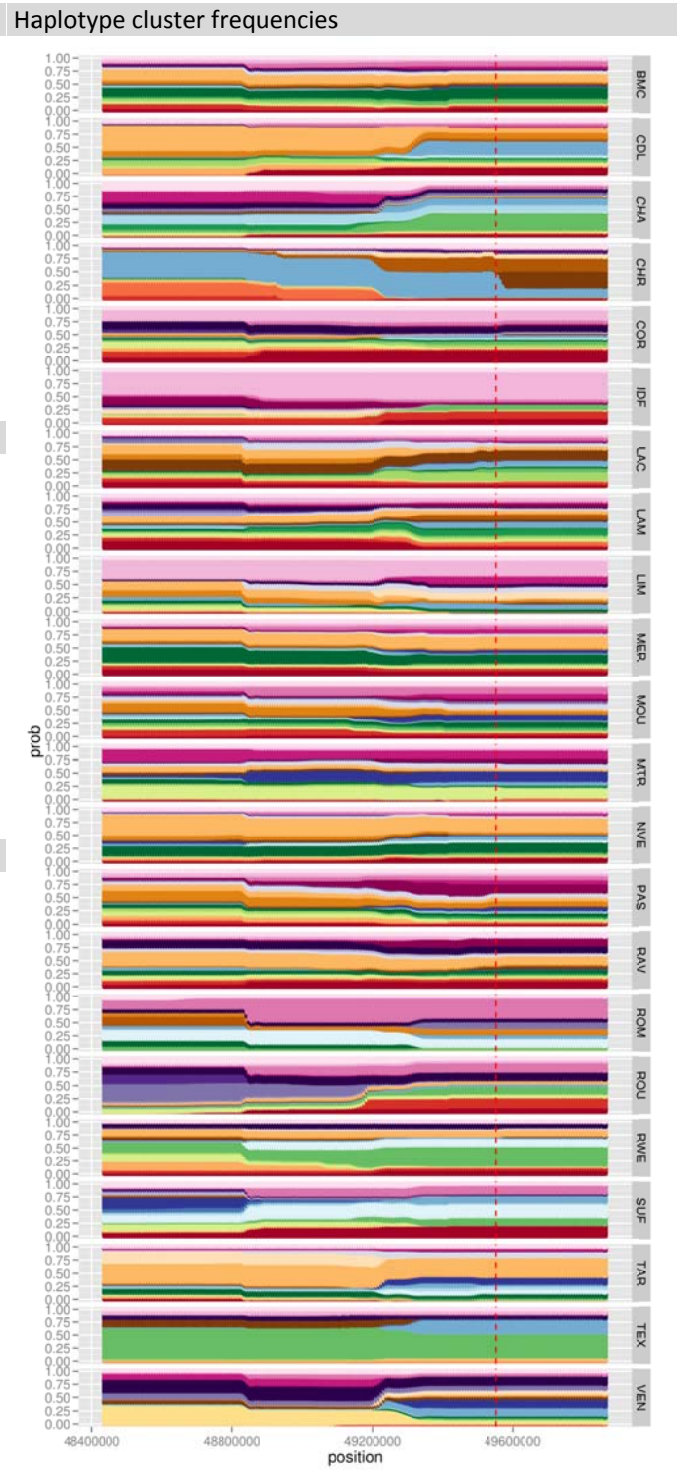
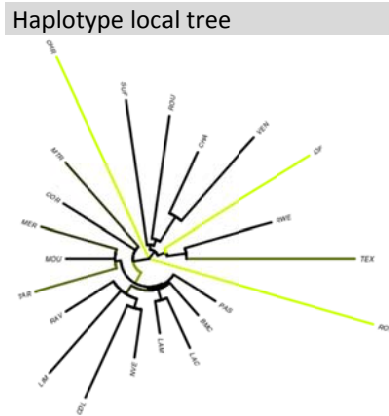
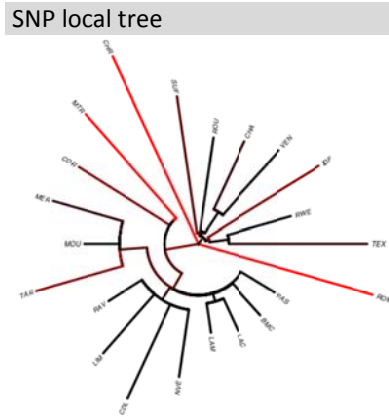
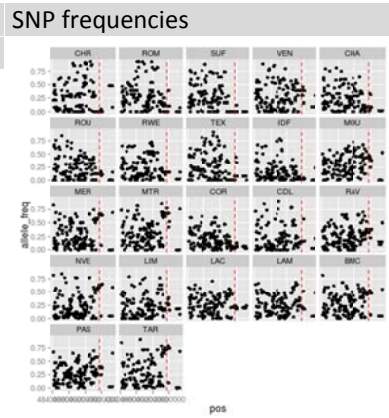


Haplotype local tree



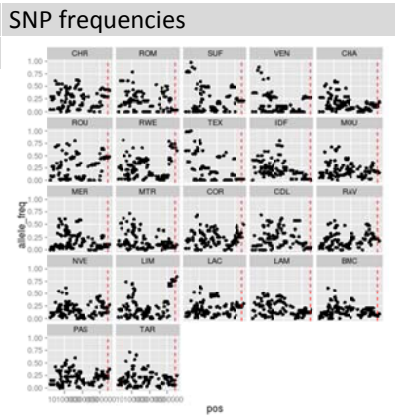
Region		
Chr	Begin	End
21	48425709	49872592

Best SNP: 49553506

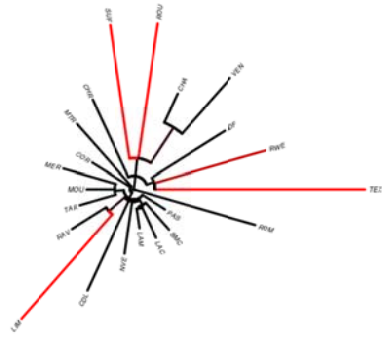




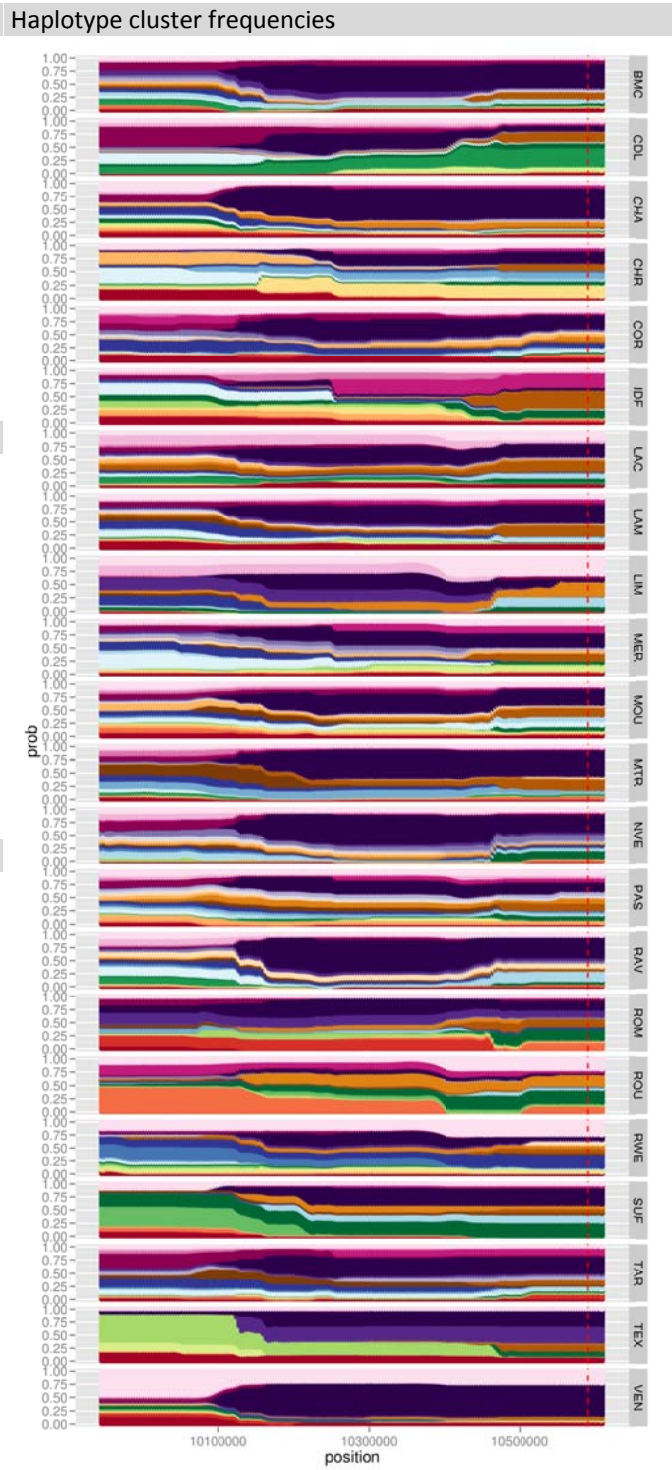
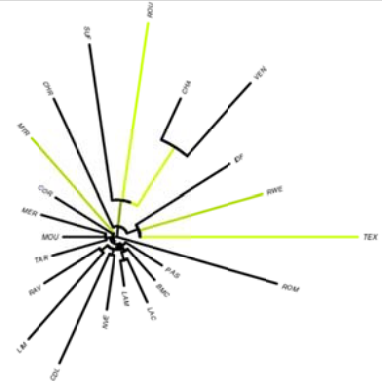
Region		
Chr	Begin	End
24	9946422	10609666
Best SNP: 10590023		



SNP local tree

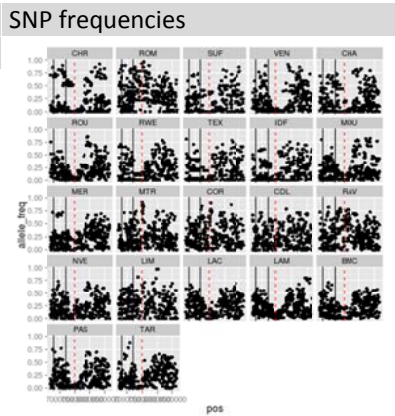


Haplotype local tree

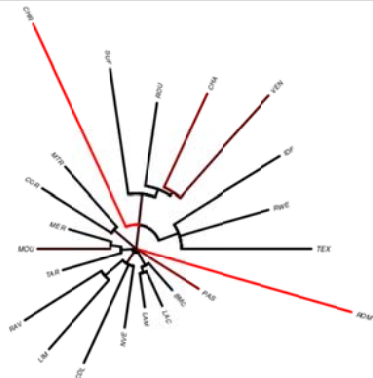


Region		
Chr	Begin	End
25	6698813	8658779

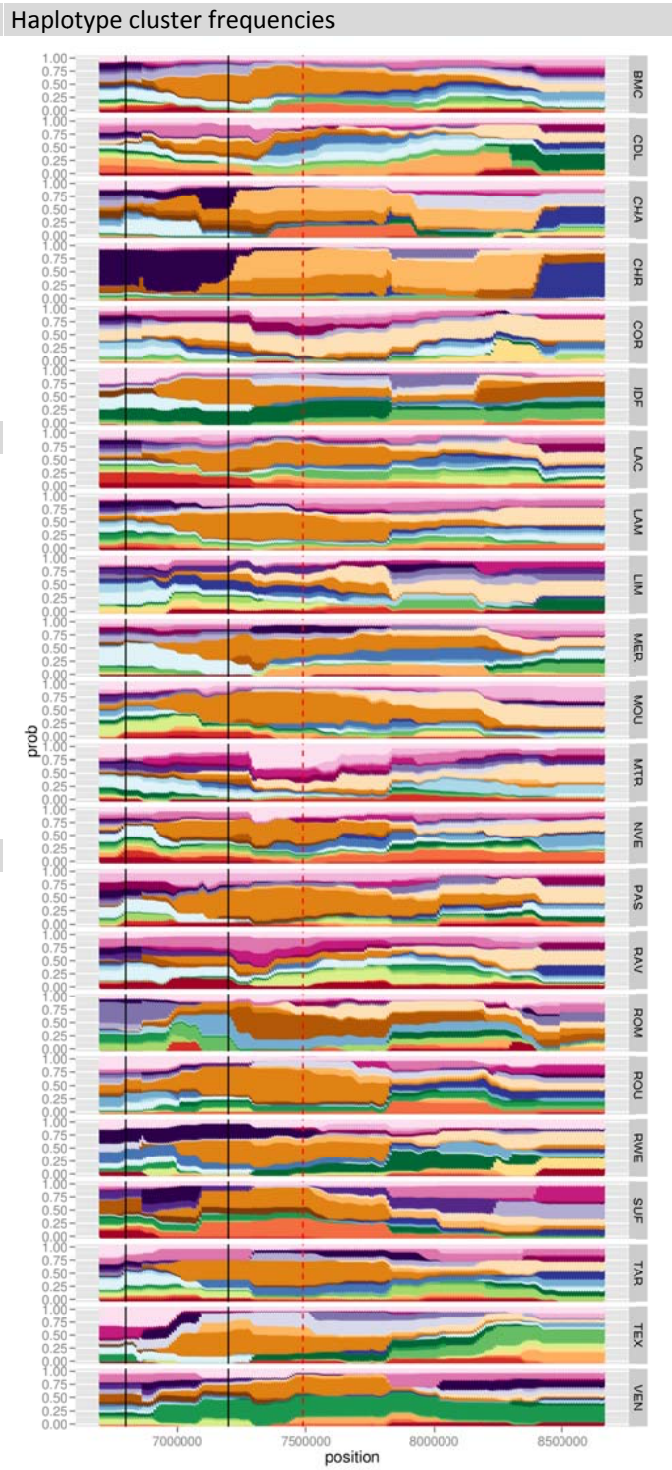
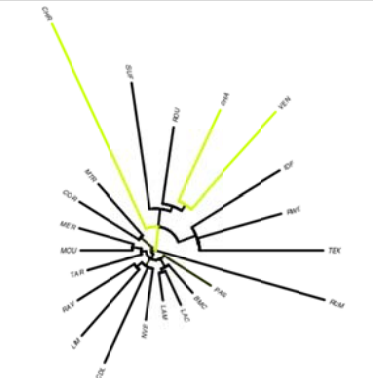
Best SNP: 7489792  
Candidate gene *IRF2BP2*  
(associated with fleece variation in sheep [19]).



SNP local tree

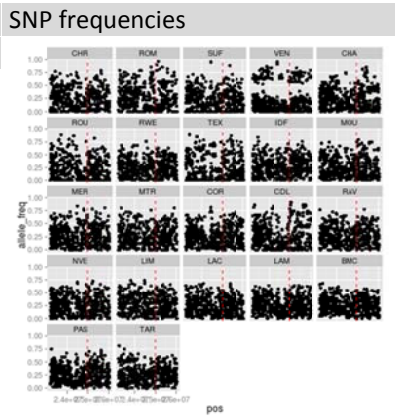


Haplotype local tree

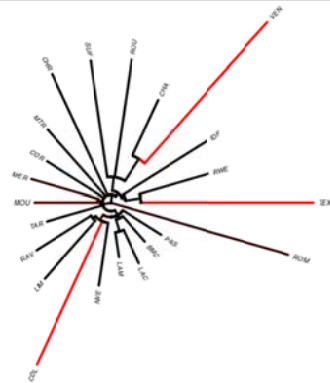


Region		
Chr	Begin	End
25	23213400	26042495

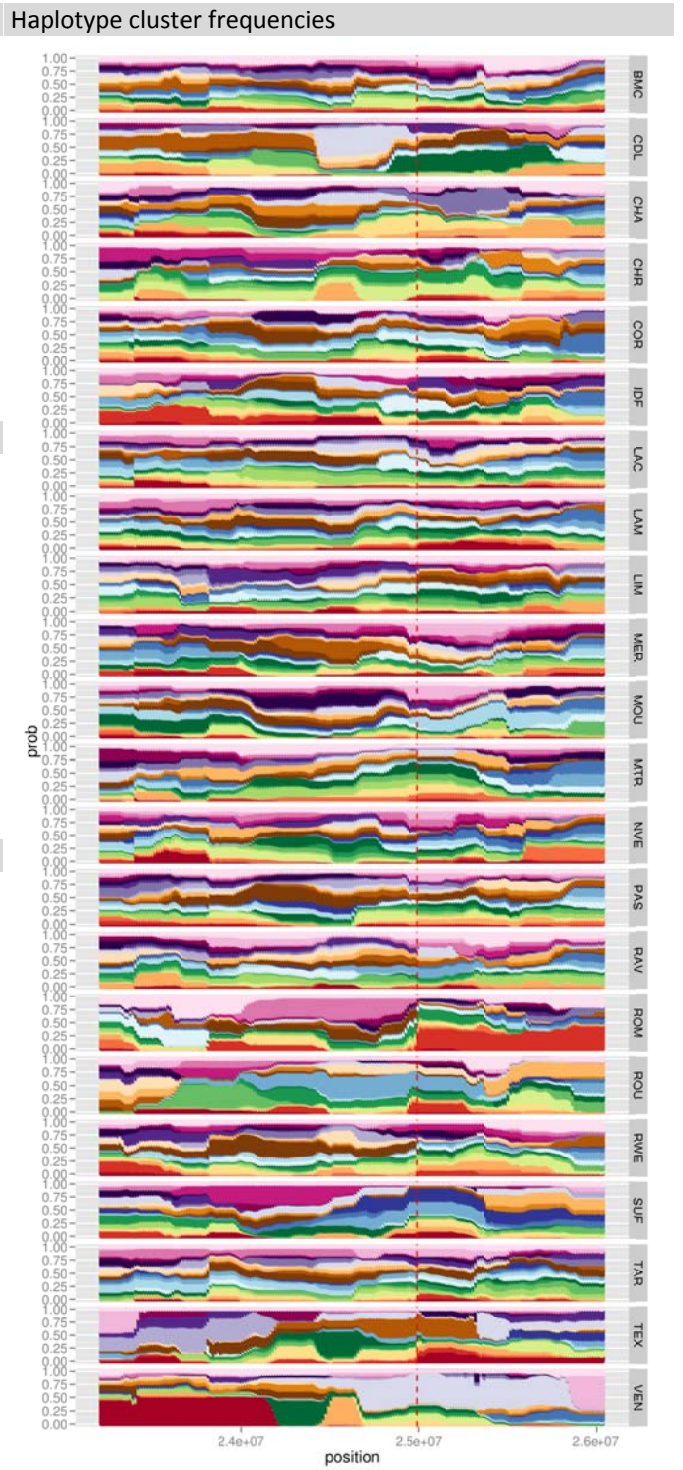
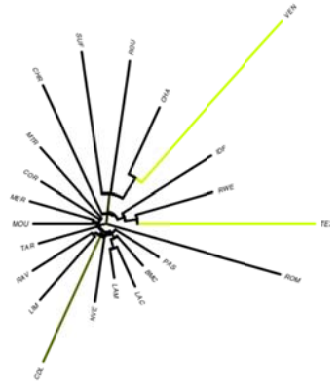
Best SNP: 24991189  
 Located in *STOX1* [1].



SNP local tree



Haplotype local tree



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