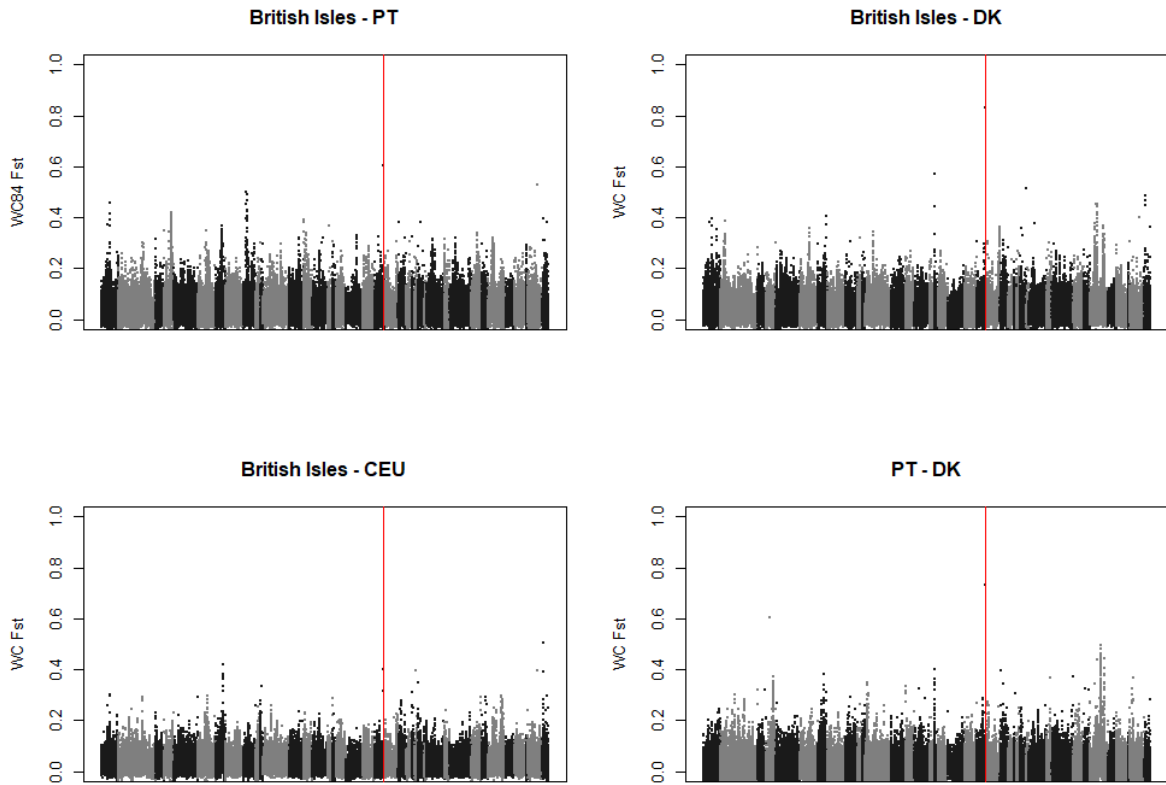


1 **APPENDIX 3 – Genome-wide scans and focus on colour-linked genes**

2



3

4 **Appendix 3 Figure 1** - Genome-wide F_{ST} scans. between differently coloured populations, averaged
5 over 20 kbp sliding windows in 5 kbp step. Alternation in colours indicates change of scaffold.
6 The red line shows the position of *MC1R* in the genome.

7

8 In addition to *MC1R*, we mapped 22 other autosomal genes (Appendix 3 Table 1) shown to be
9 linked to melanin colouration in other organisms onto the barn owl genome. Our goal was to see
10 if, in the absence of any signal at *MC1R*, any of these genes showed signals of particular
11 differentiation between plumage colour morphs. The figures of the following pages are organised
12 as follows: each page concerns one gene (or specific exons of a gene) indicated on the title of the
13 left-hand side plots. Plots on the left show pairwise F_{ST} between pairs of populations indicated on
14 the title, and on the right nucleotide diversity (π), both estimated over 5kbp sliding windows in

15 1kbp step. Brit – British Isles, includes Great Britain and Ireland; PT – Portugal; DK – Denmark;
16 CEU – Central Europe, includes France and Switzerland.

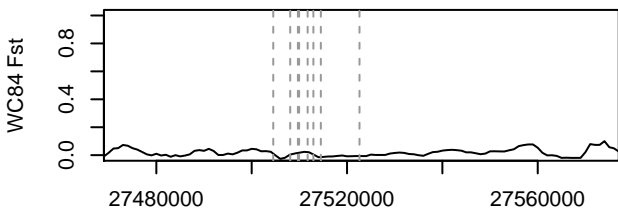
17

18 **Appendix 3 Table 1** – List of 23 candidate genes analysed in this study. The references indicated
19 are examples of each gene’s link to melanin-based colouration.

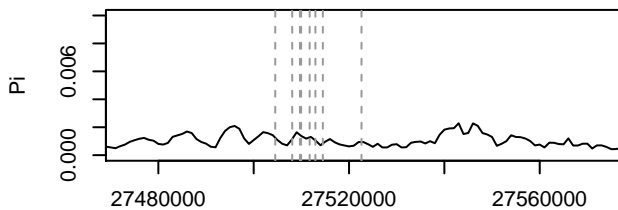
#	Gene	Reference
1	AGRP	(Li et al. 2011)
2	ASIP-ACD	(San-Jose et al. 2017)
3	ATP6V1C2	(Schweizer et al. 2016)
4	CORIN	(Bourgeois et al. 2016)
5	CREB1	(San-Jose et al. 2017)
6	CTHRC1	(Zheng et al. 2020)
7	DCT	(San-Jose et al. 2017)
8	EDNRB2	(Li et al. 2015)
9	GPER1	(Natale et al. 2016)
10	GPR143	(Shi et al. 2012)
11	GR	(Béziers et al. 2019)
12	KIT	(San-Jose et al. 2017)
13	MC1R	(San-Jose et al. 2017)
14	MFSD12	(Aguillon et al. 2021)
15	MGRN1	(Walker and Gunn 2010)
16	MITF-M	(Li et al. 2012)
17	MR	(Béziers et al. 2019)
18	OCA2	(Kratochwil et al. 2019)
19	PCSK2	(San-Jose et al. 2017)
20	POMC	(Li et al. 2011)
21	RAB38	(Abolins-Abols et al. 2018)
22	SOX10	(Li et al. 2011)
23	TYR	(San-Jose et al. 2017)

20

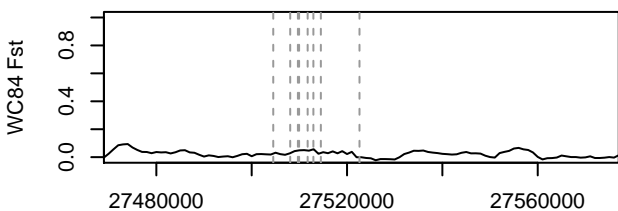
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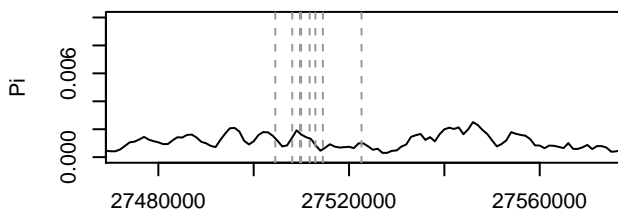
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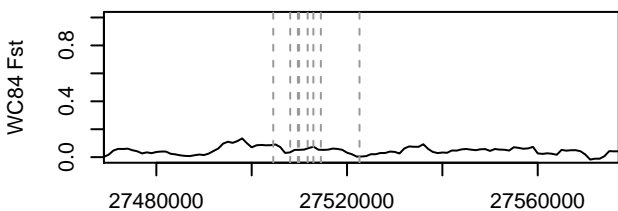
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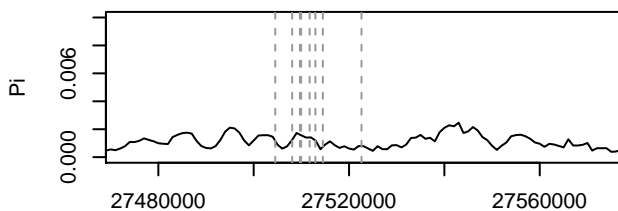
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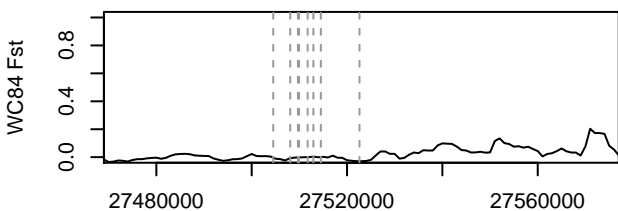
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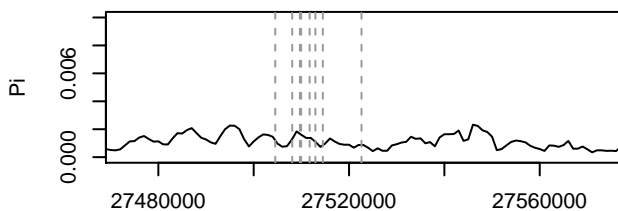
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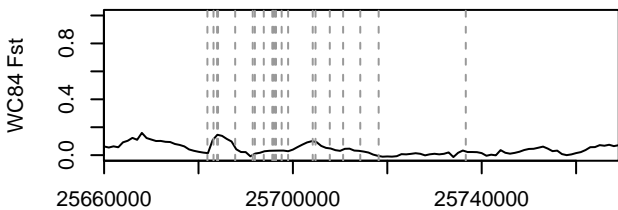
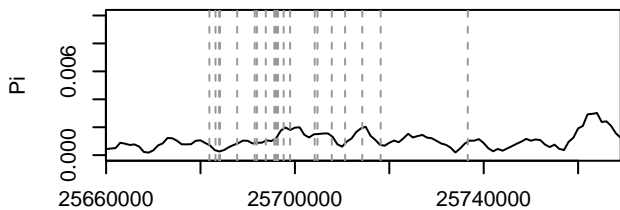
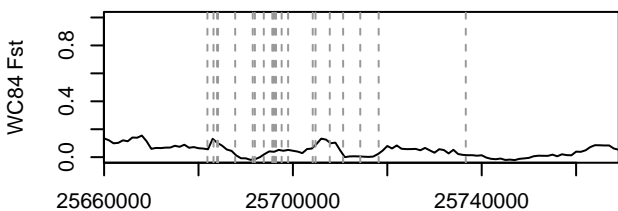
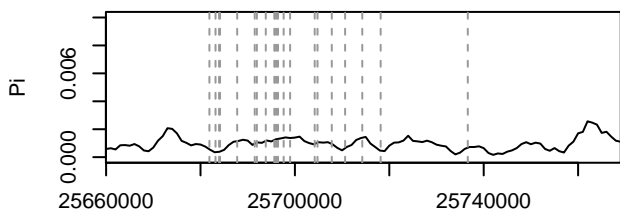
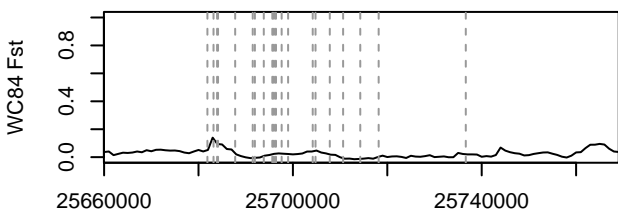
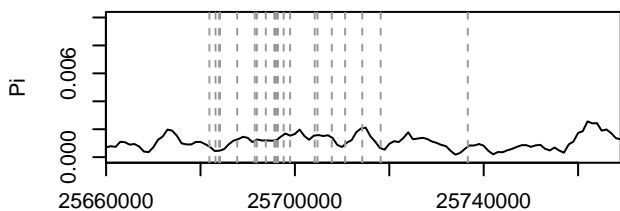
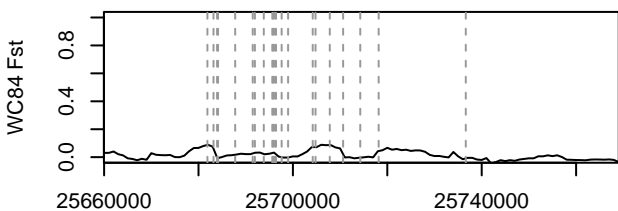
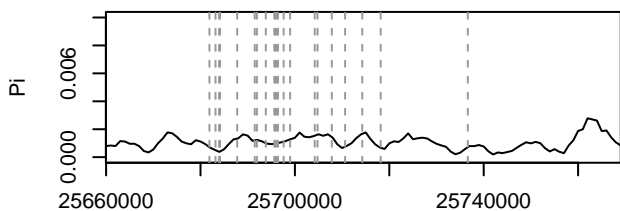


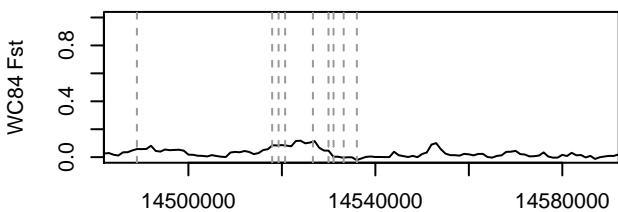
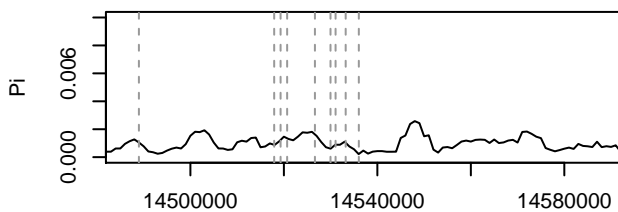
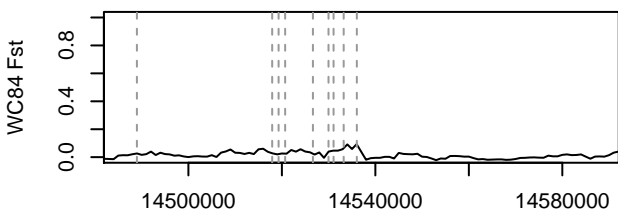
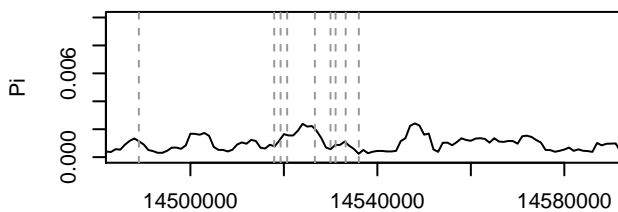
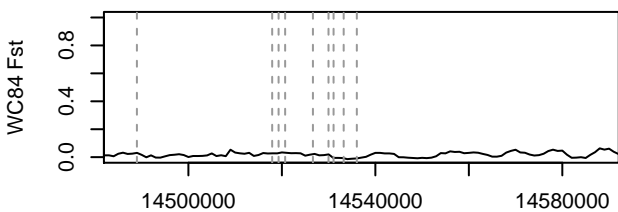
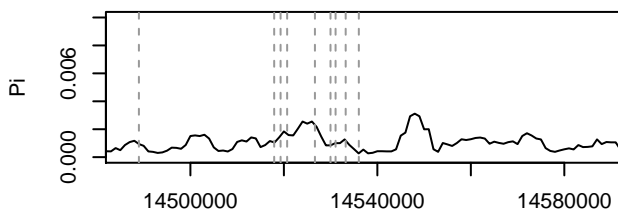
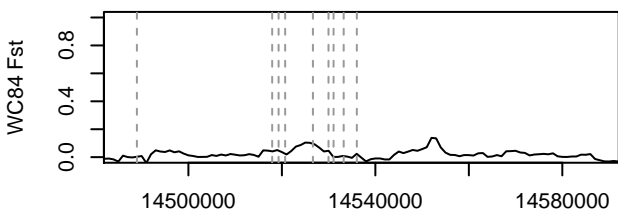
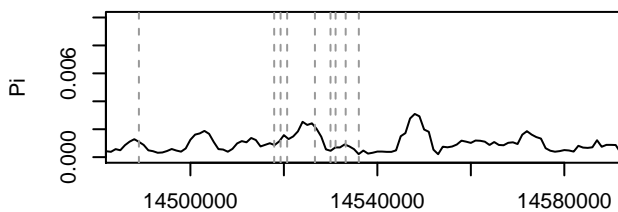
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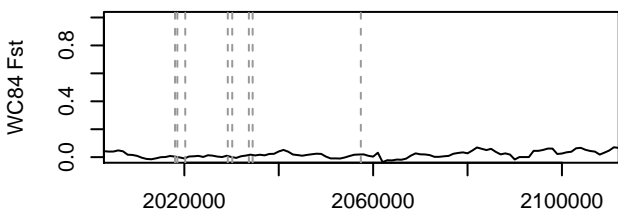
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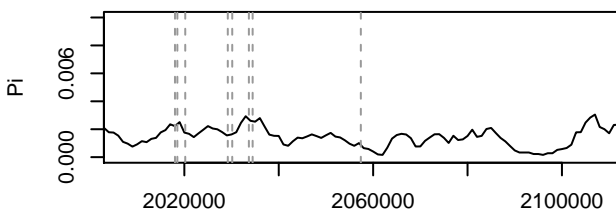
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MITF-M : Brit - PT**British Isles****MITF-M : Brit - DK****Denmark****MITF-M : Brit - CEU****C Europe****MITF-M : PT - DK****Portugal**

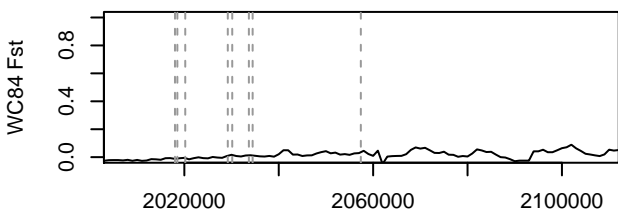
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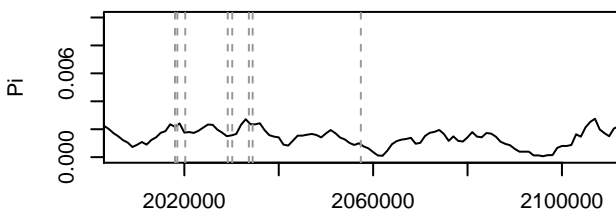
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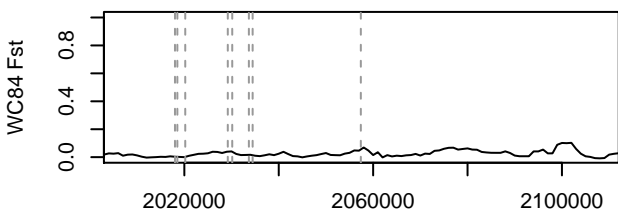
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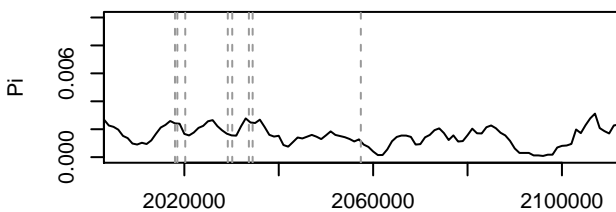
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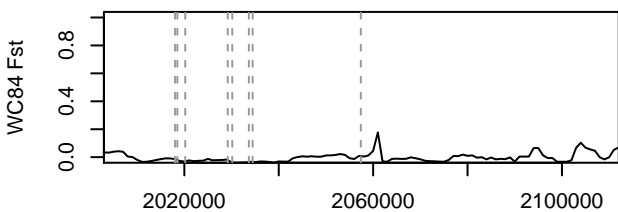
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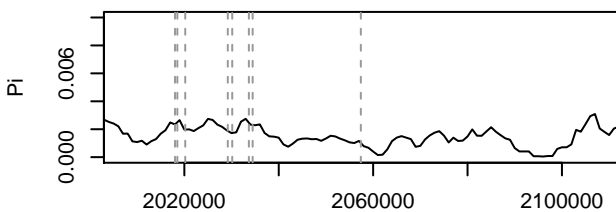
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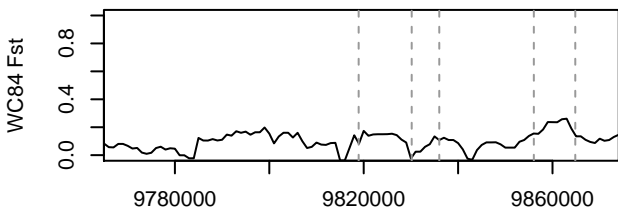
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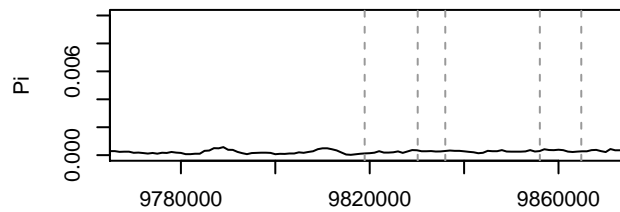
Portugal



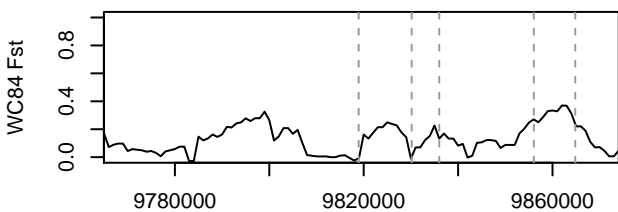
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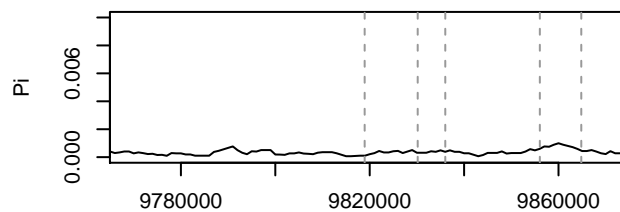
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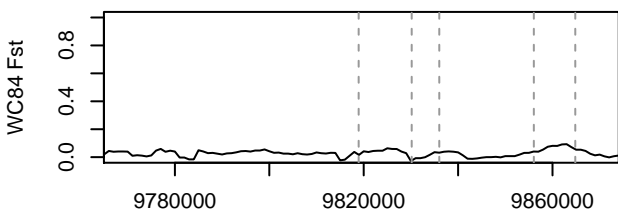
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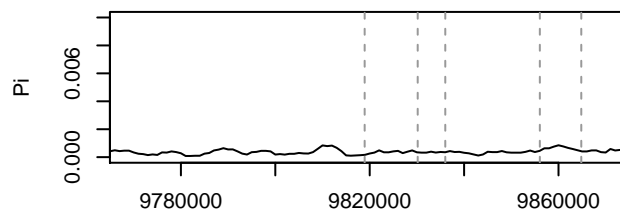
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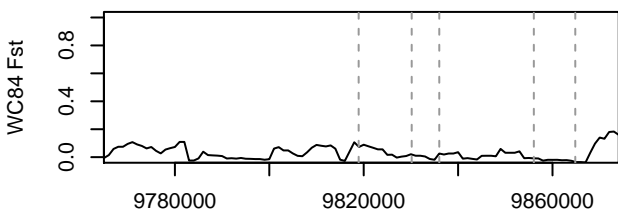
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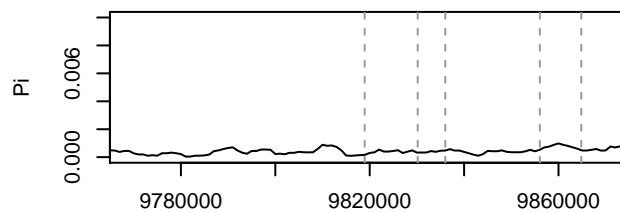
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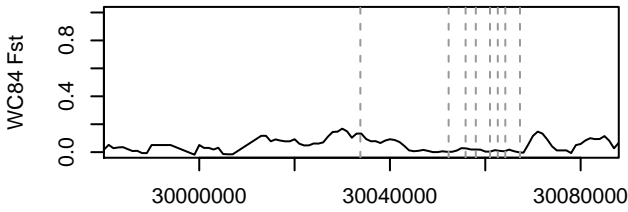
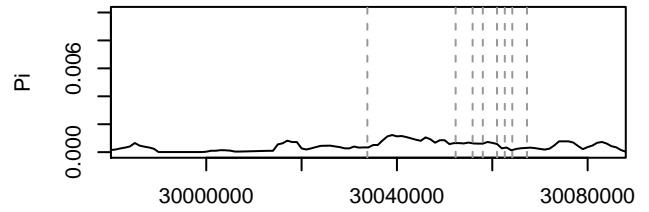
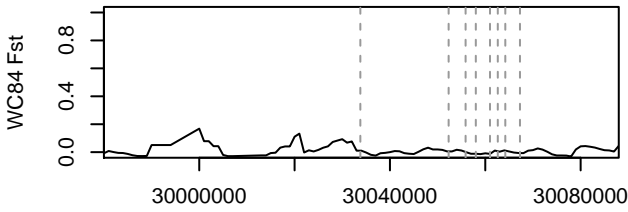
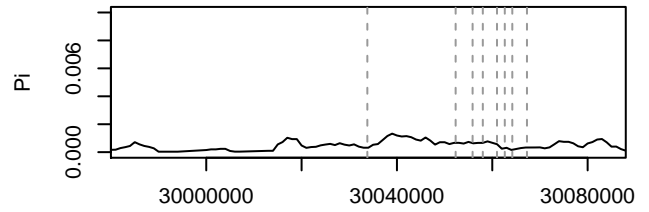
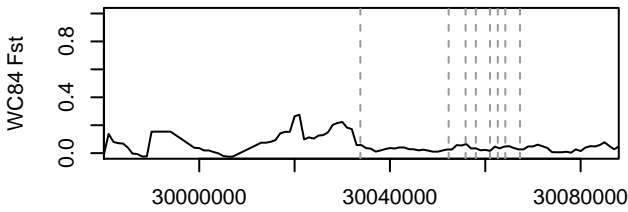
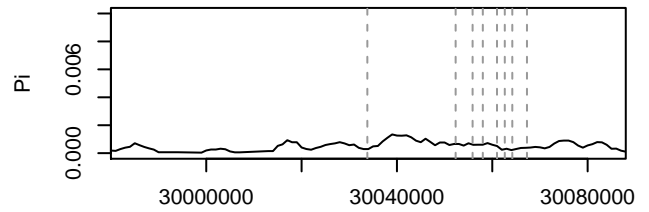
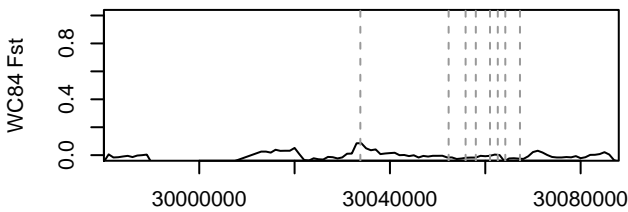
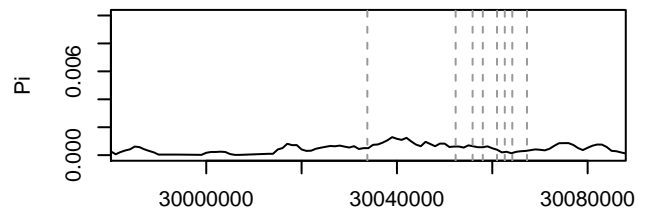


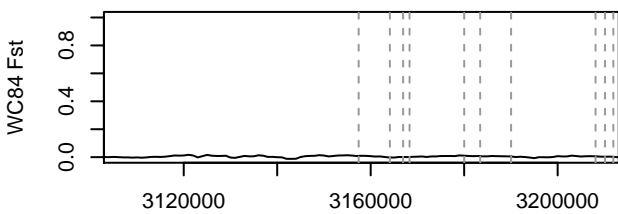
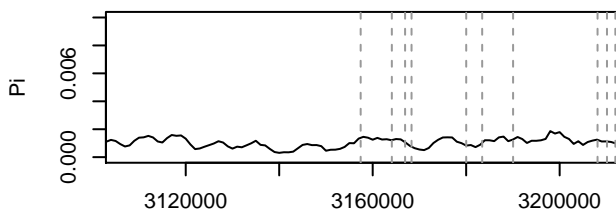
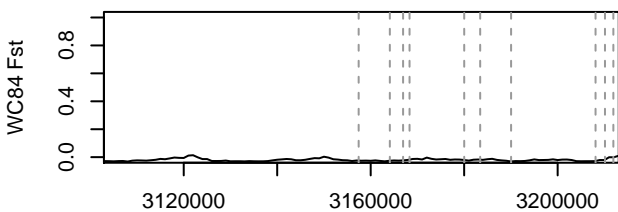
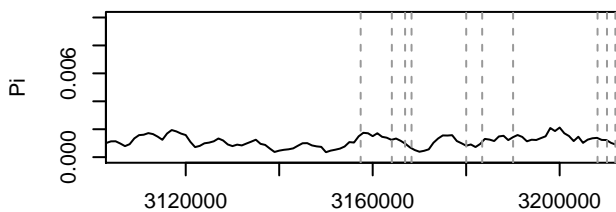
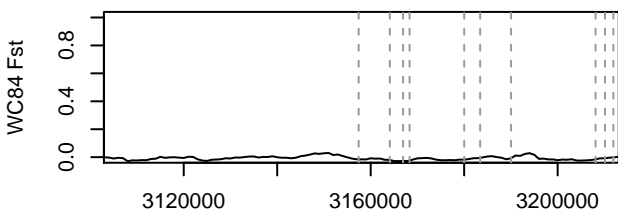
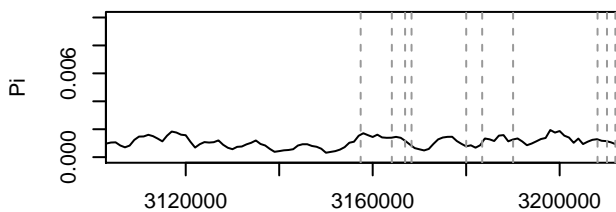
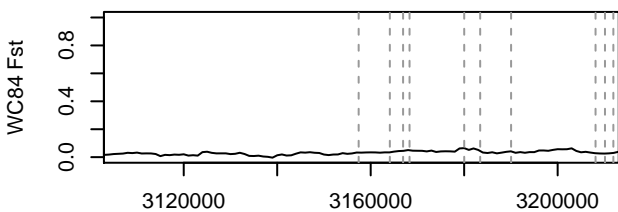
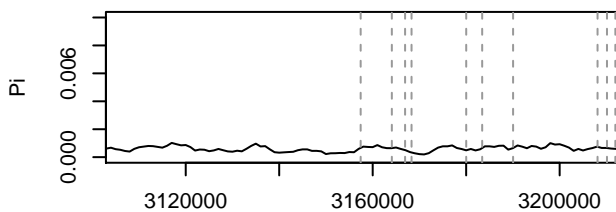
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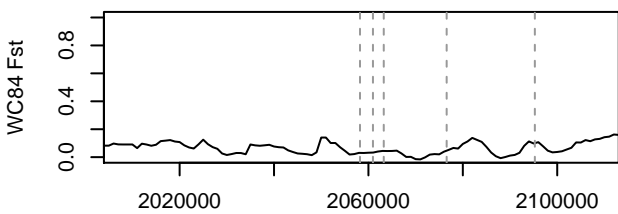
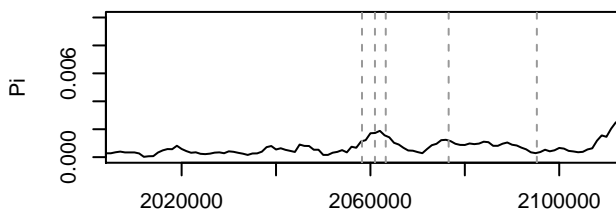
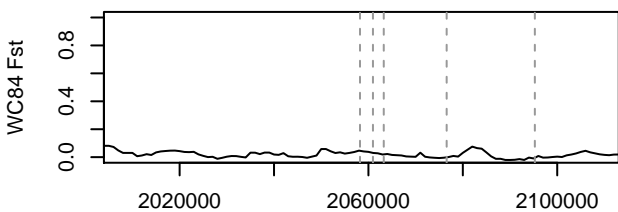
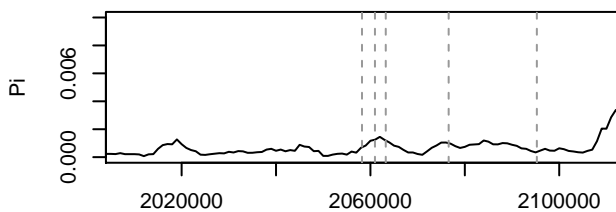
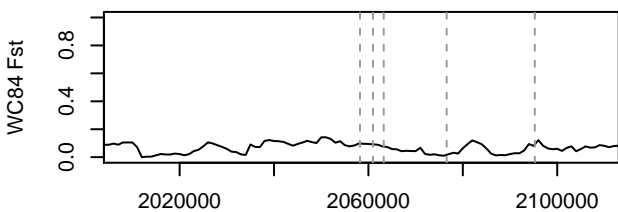
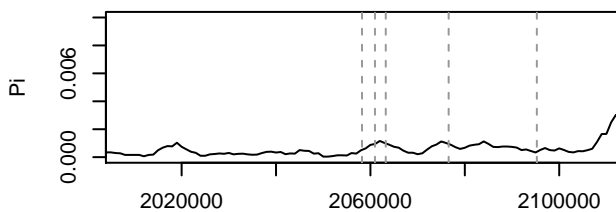
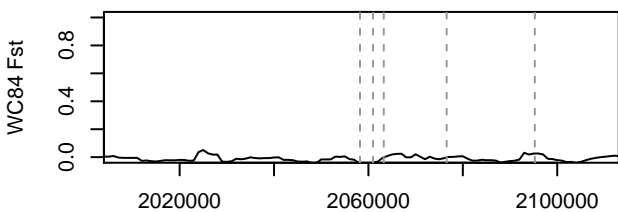
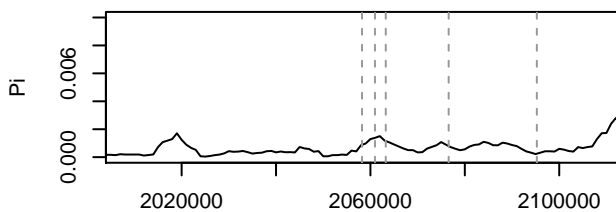


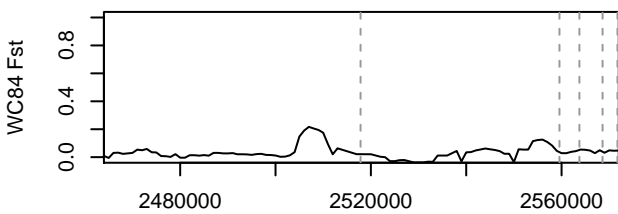
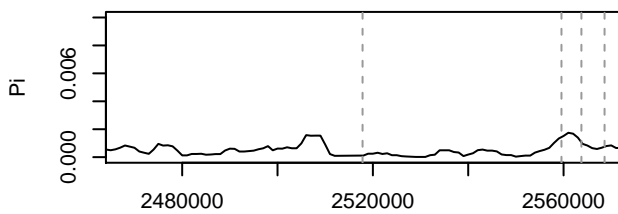
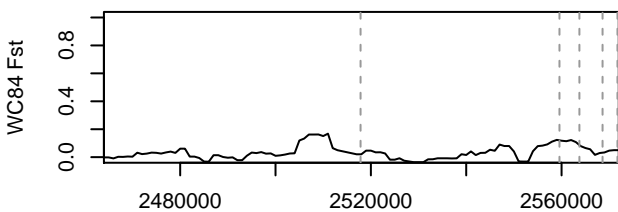
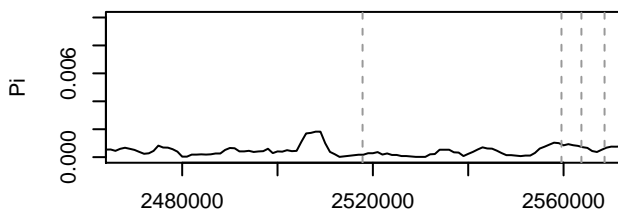
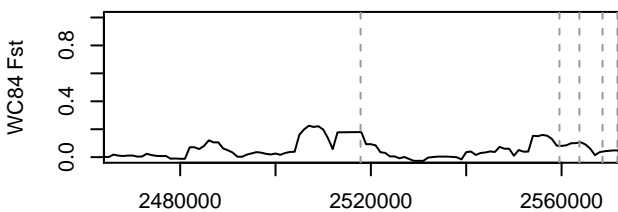
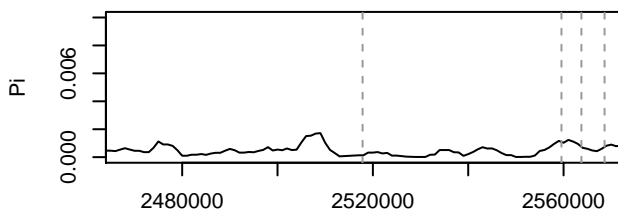
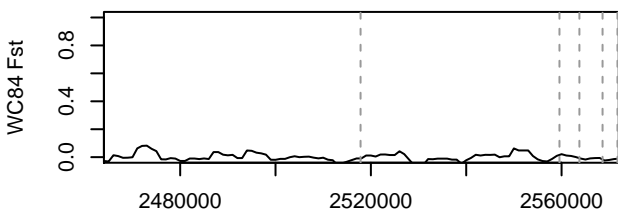
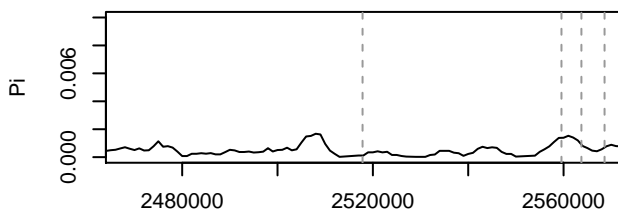
Portugal



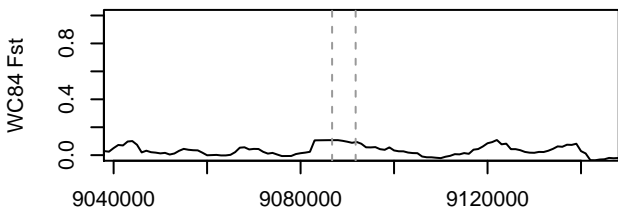
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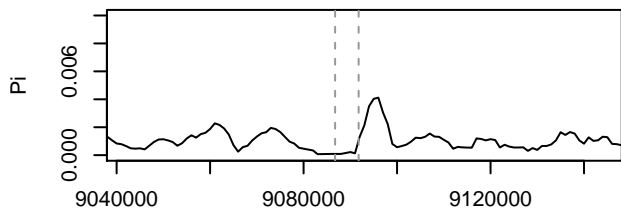
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GR : Brit – PT**British Isles****GR : Brit – DK****Denmark****GR : Brit – CEU****C Europe****GR : PT – DK****Portugal**

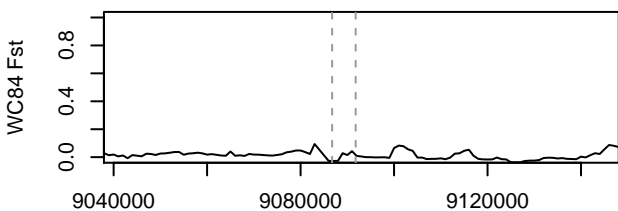
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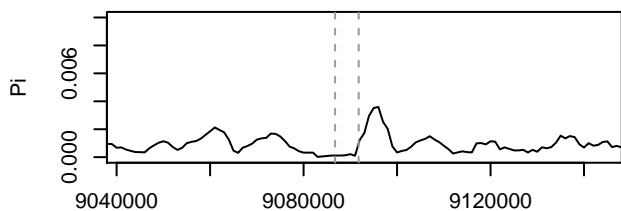
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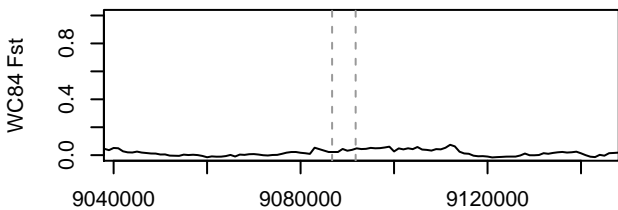
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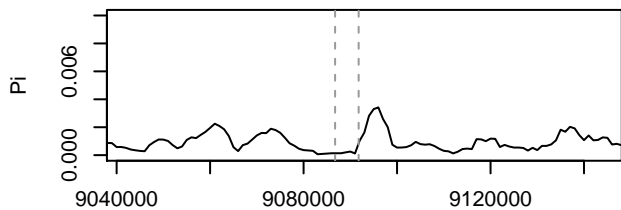
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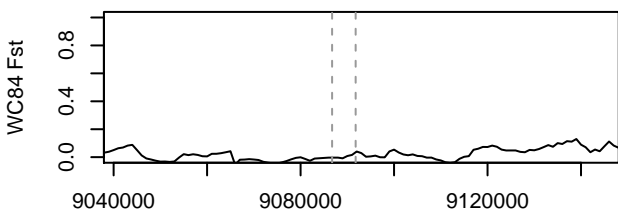
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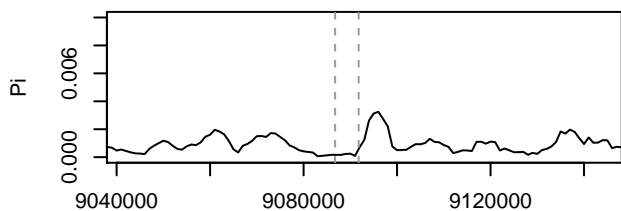
C Europe



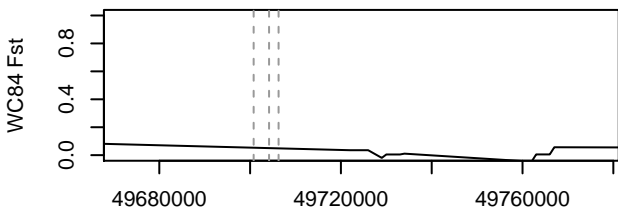
MR : PT – DK



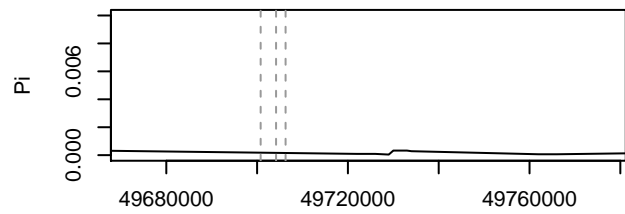
Portugal



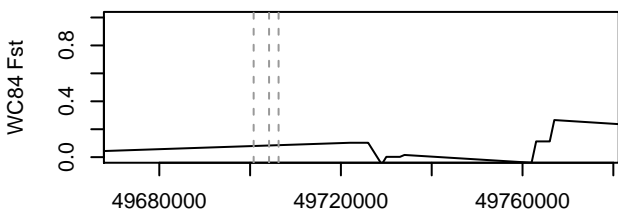
POMC : Brit – PT



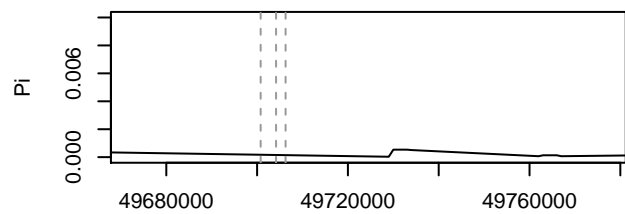
British Isles



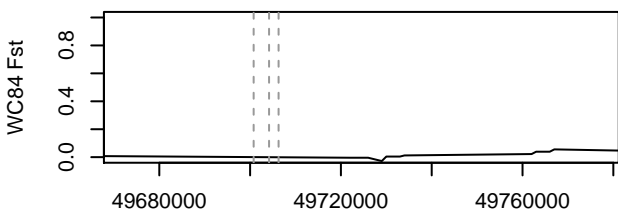
POMC : Brit – DK



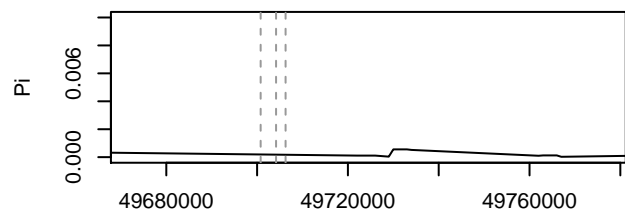
Denmark



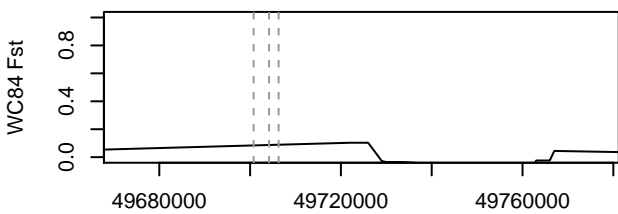
POMC : Brit – CEU



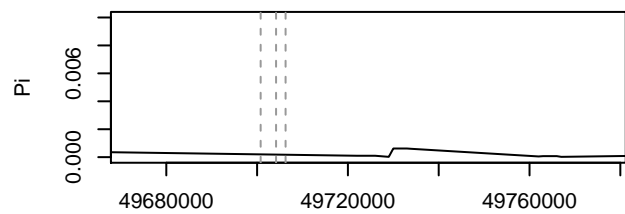
C Europe



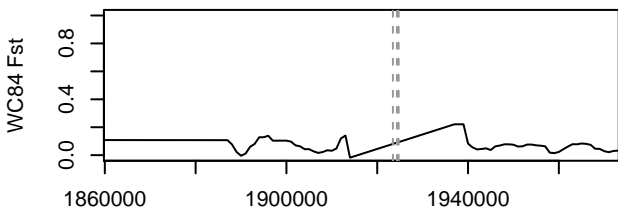
POMC : PT – DK



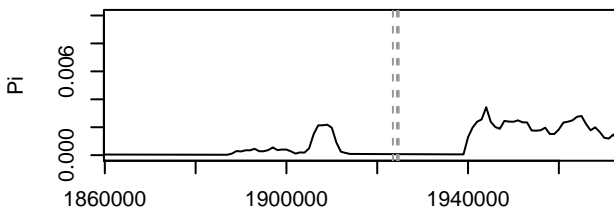
Portugal



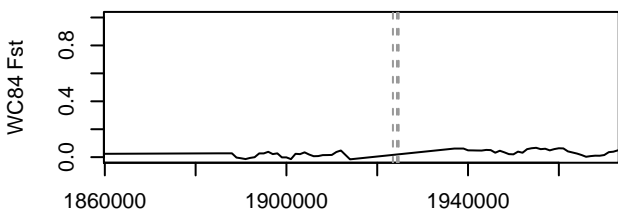
AGRP : Brit – PT



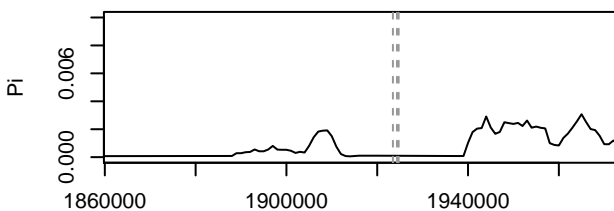
British Isles



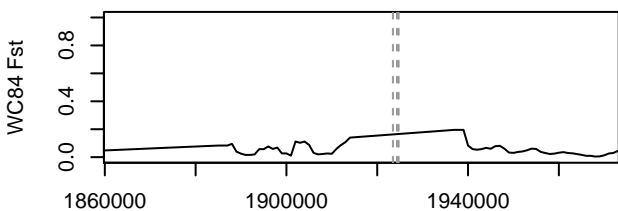
AGRP : Brit – DK



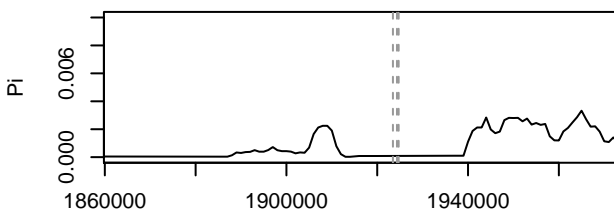
Denmark



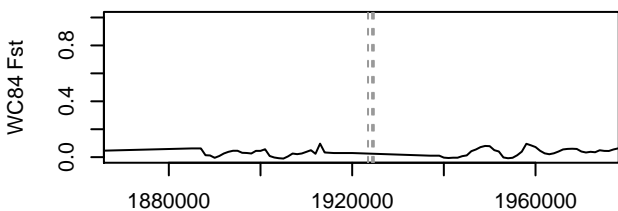
AGRP : Brit – CEU



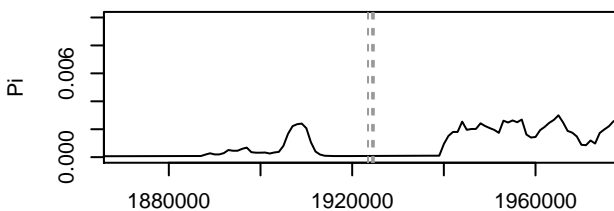
C Europe



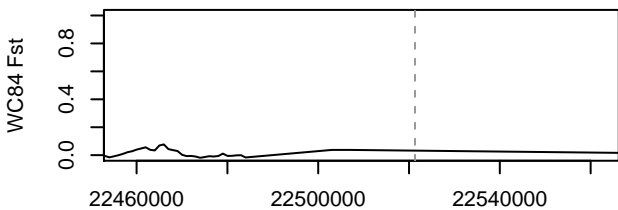
AGRP : PT – DK



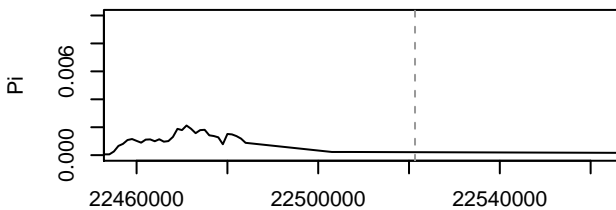
Portugal



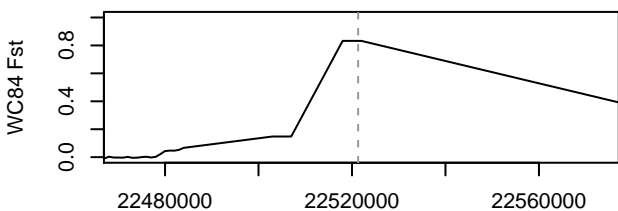
MC1R : Brit – PT



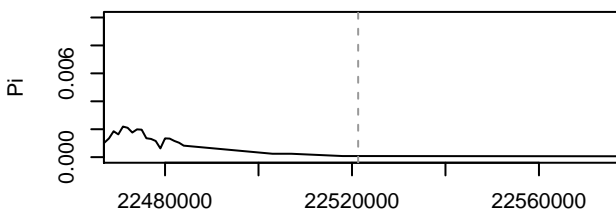
British Isles



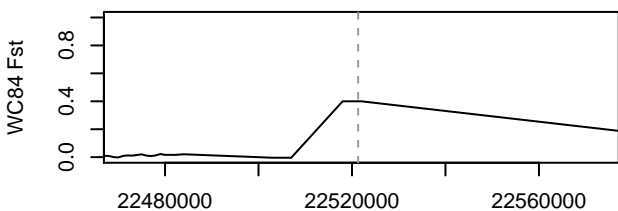
MC1R : Brit – DK



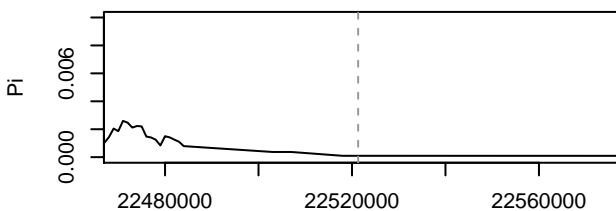
Denmark



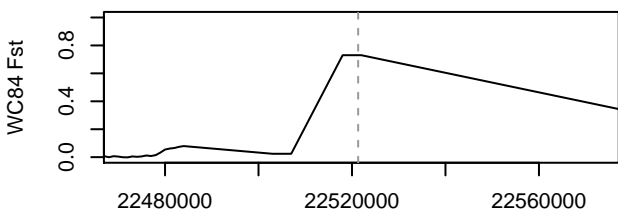
MC1R : Brit – CEU



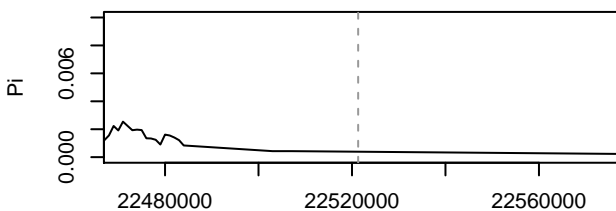
C Europe

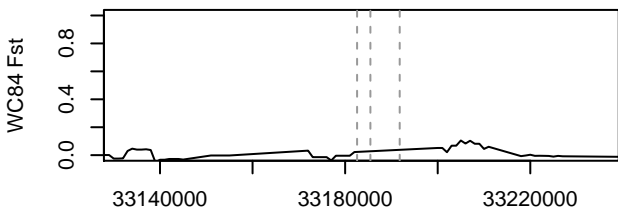
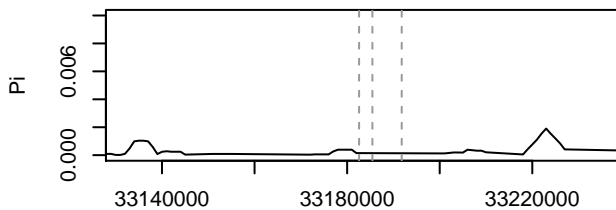
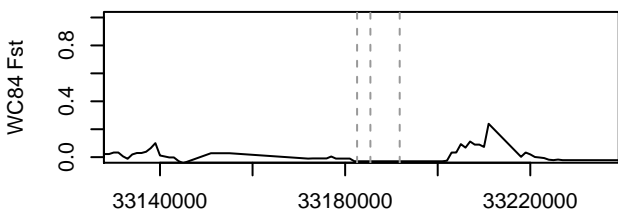
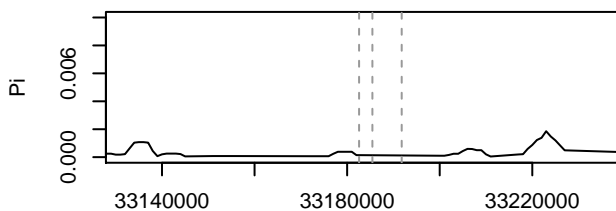
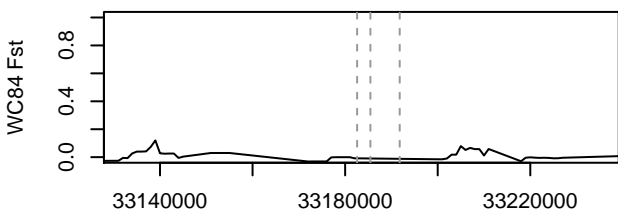
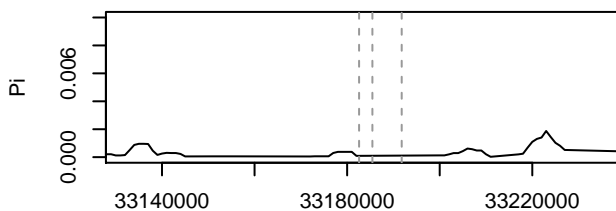
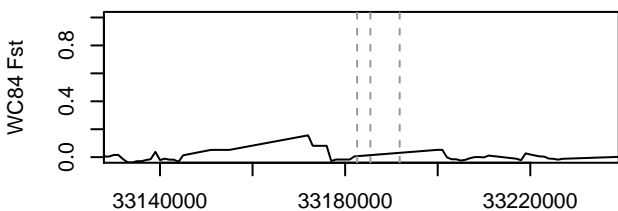
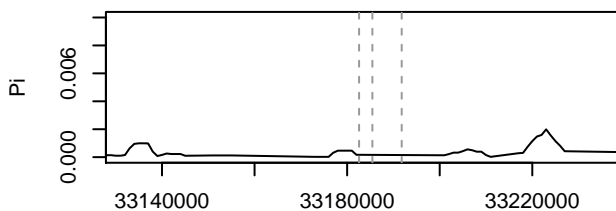


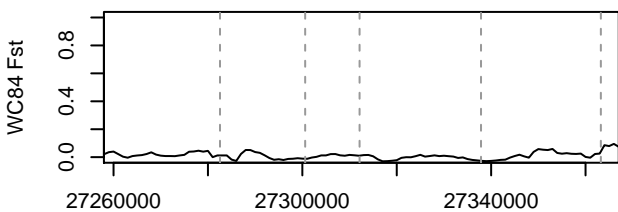
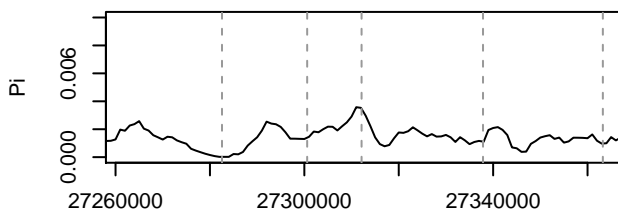
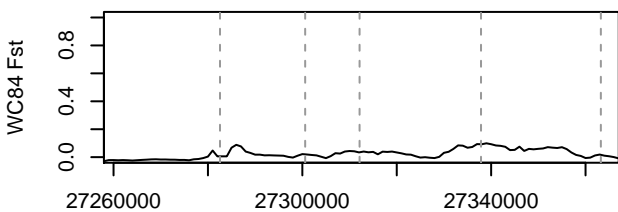
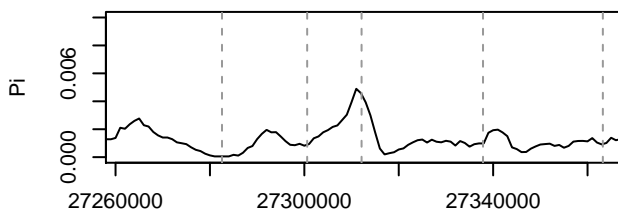
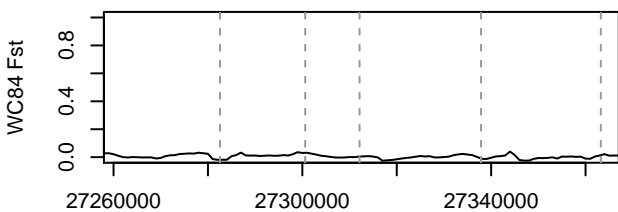
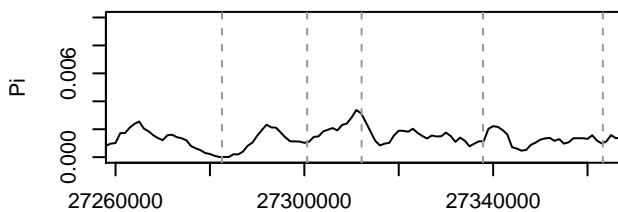
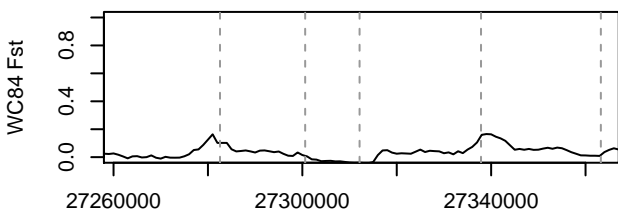
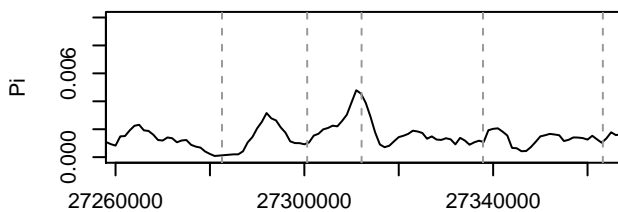
MC1R : PT – DK



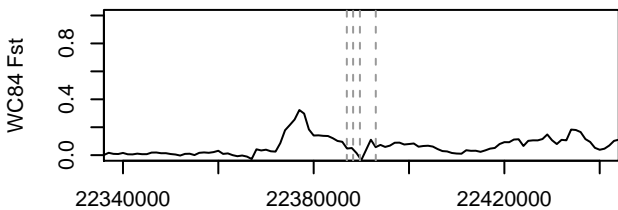
Portugal



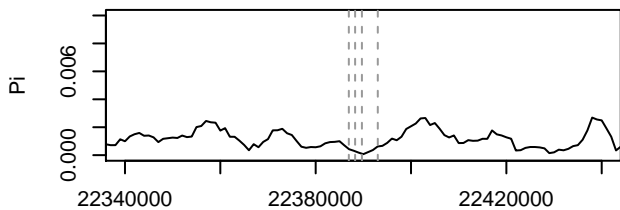
SOX10 : Brit - PT**British Isles****SOX10 : Brit - DK****Denmark****SOX10 : Brit - CEU****C Europe****SOX10 : PT - DK****Portugal**

CORIN : Brit - PT**British Isles****CORIN : Brit - DK****Denmark****CORIN : Brit - CEU****C Europe****CORIN : PT - DK****Portugal**

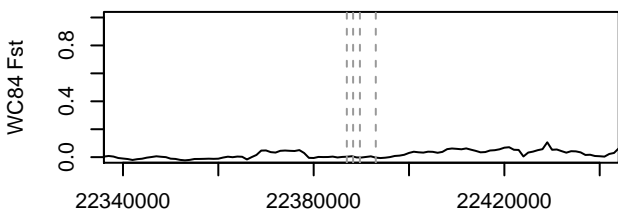
CTHRC1 : Brit – PT



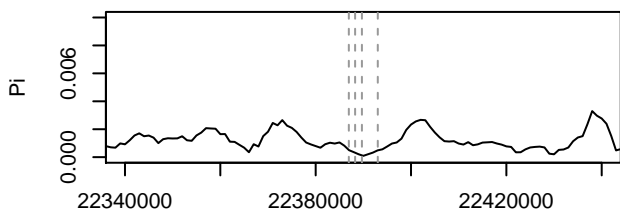
British Isles



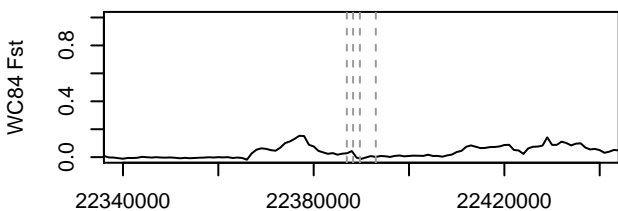
CTHRC1 : Brit – DK



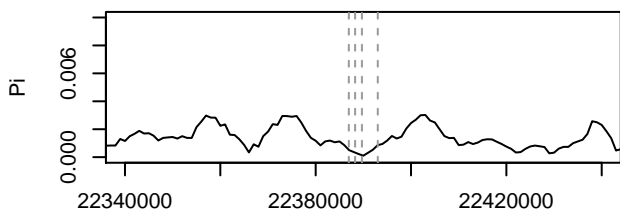
Denmark



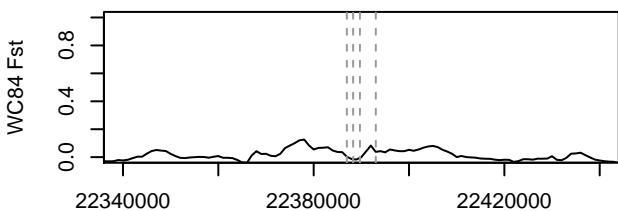
CTHRC1 : Brit – CEU



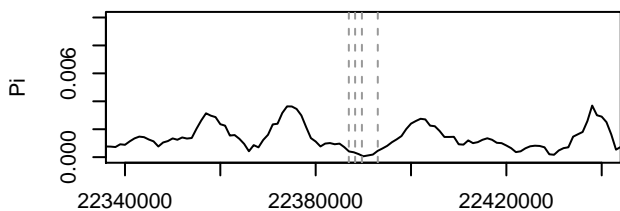
C Europe

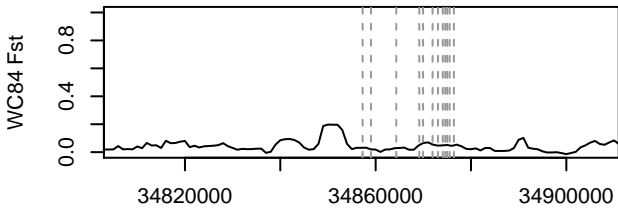
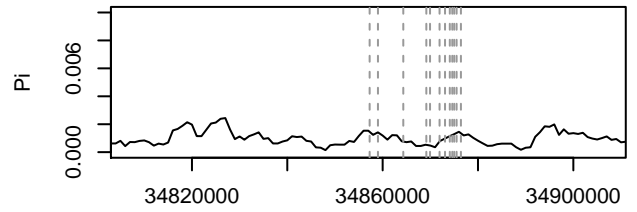
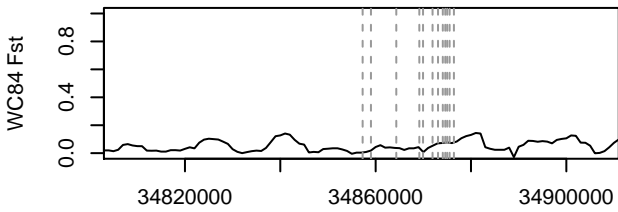
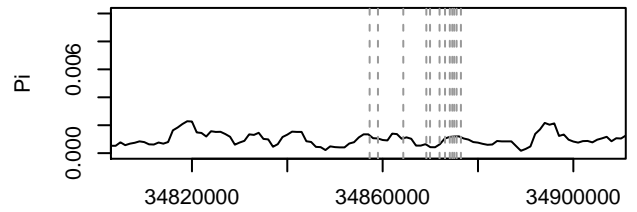
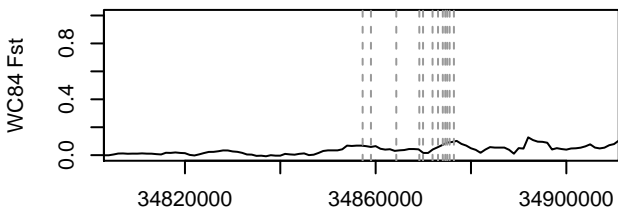
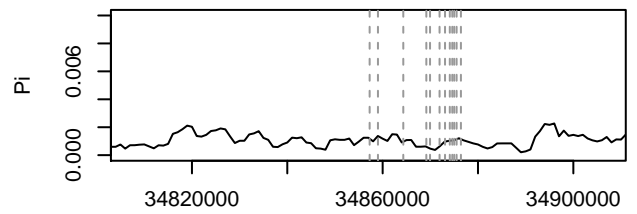
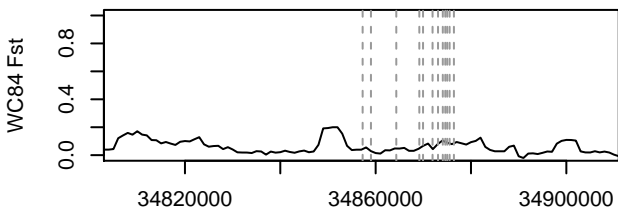
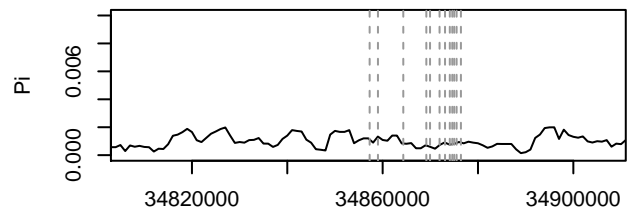


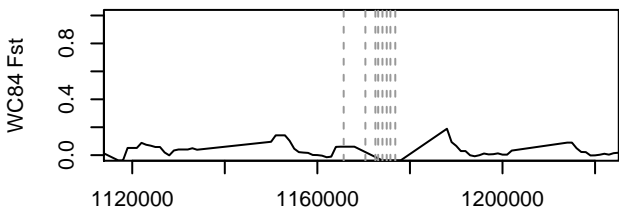
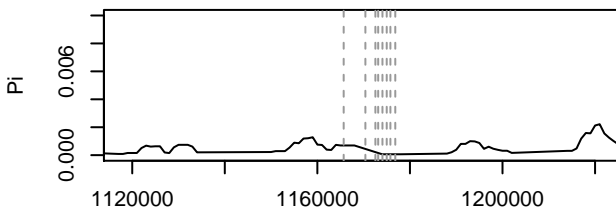
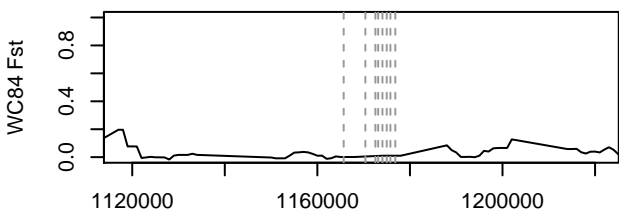
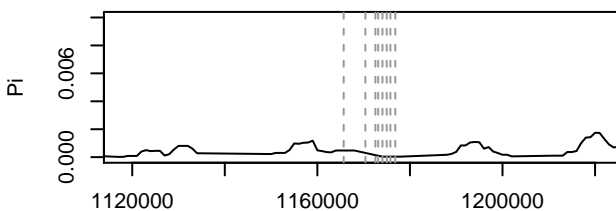
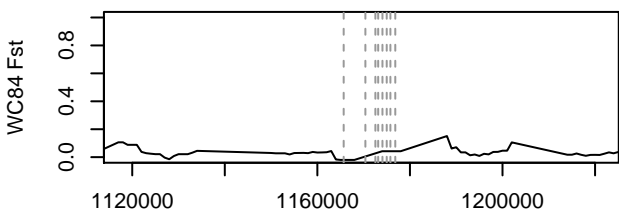
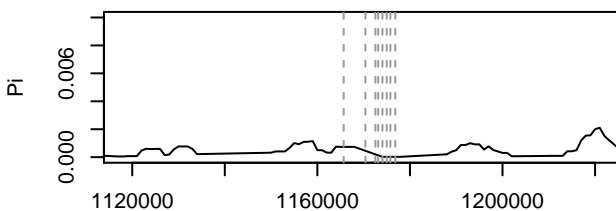
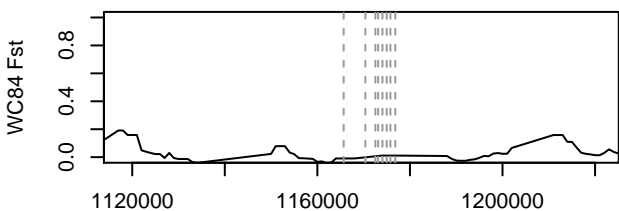
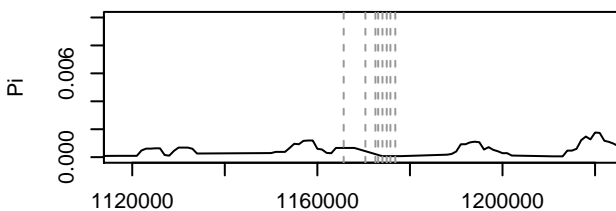
CTHRC1 : PT – DK

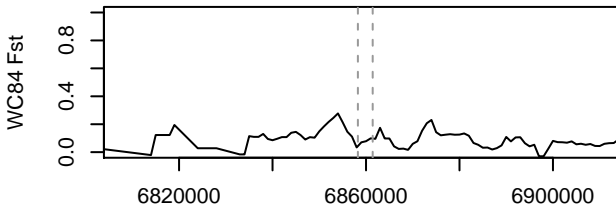
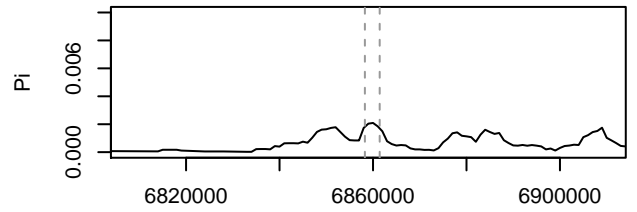
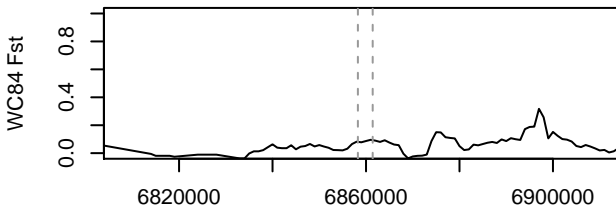
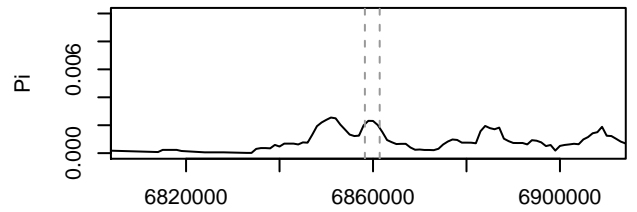
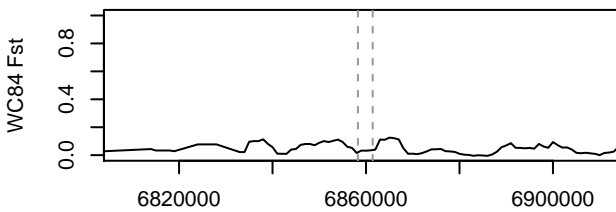
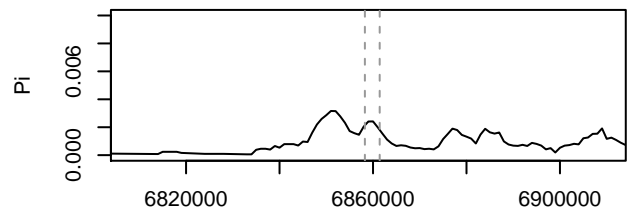
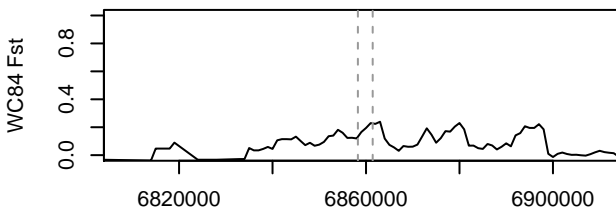
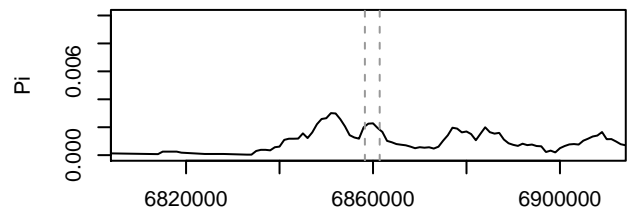


Portugal

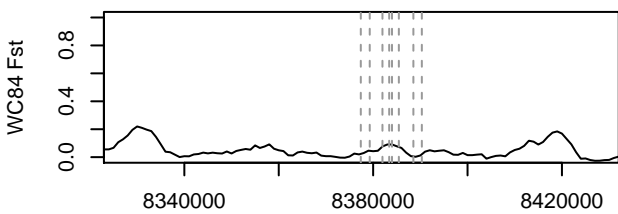


ATP6V1C2 : Brit – PT**British Isles****ATP6V1C2 : Brit – DK****Denmark****ATP6V1C2 : Brit – CEU****C Europe****ATP6V1C2 : PT – DK****Portugal**

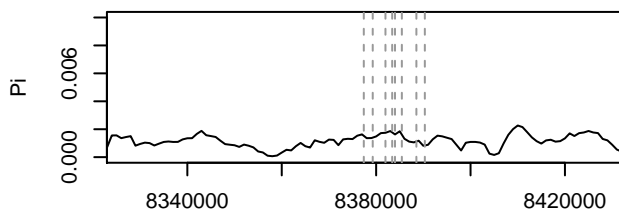
EDNRB2 : Brit – PT**British Isles****EDNRB2 : Brit – DK****Denmark****EDNRB2 : Brit – CEU****C Europe****EDNRB2 : PT – DK****Portugal**

GPER1 : Brit - PT**British Isles****GPER1 : Brit - DK****Denmark****GPER1 : Brit - CEU****C Europe****GPER1 : PT - DK****Portugal**

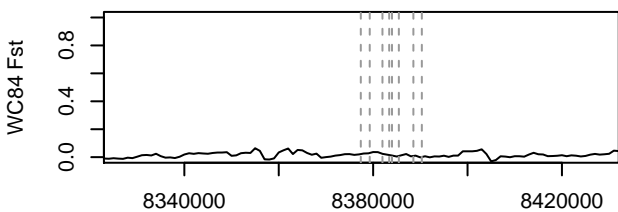
GPR143 : Brit – PT



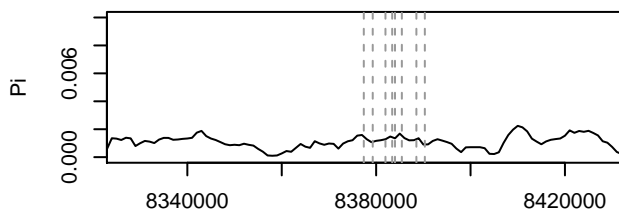
British Isles



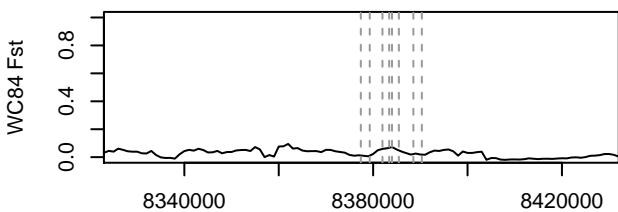
GPR143 : Brit – DK



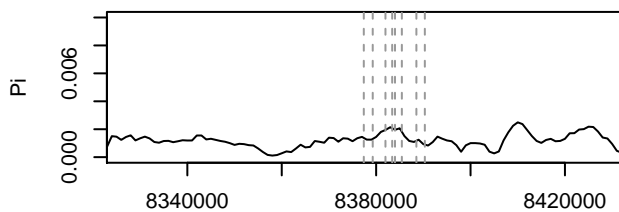
Denmark



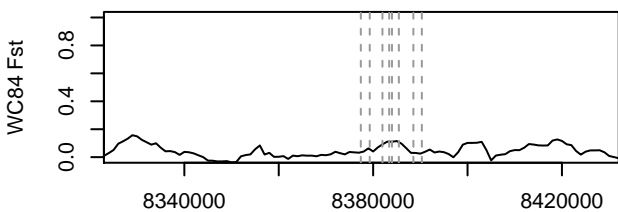
GPR143 : Brit – CEU



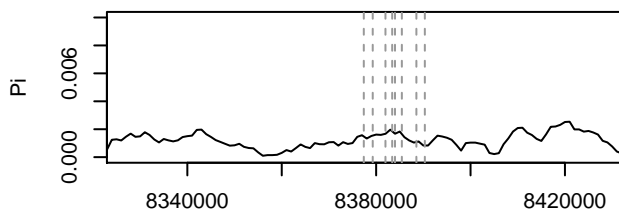
C Europe

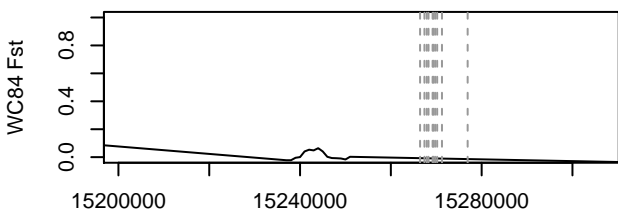
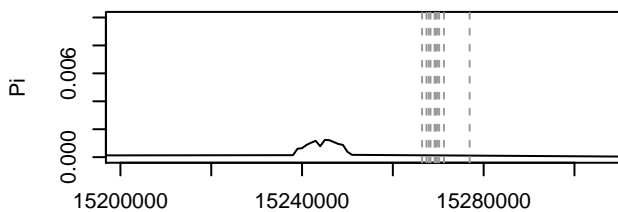
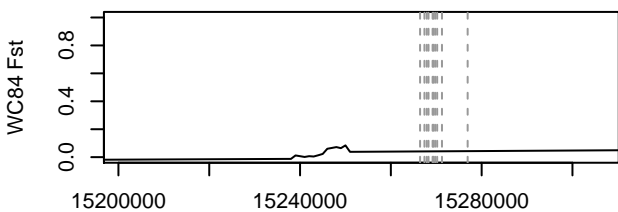
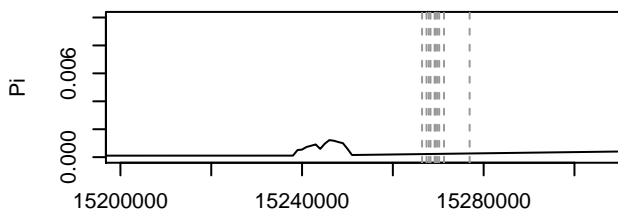
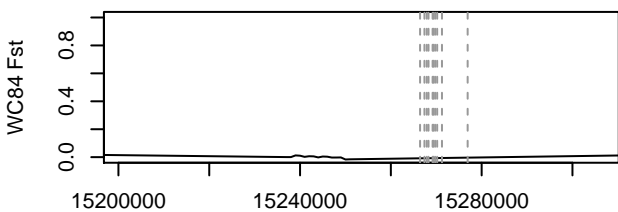
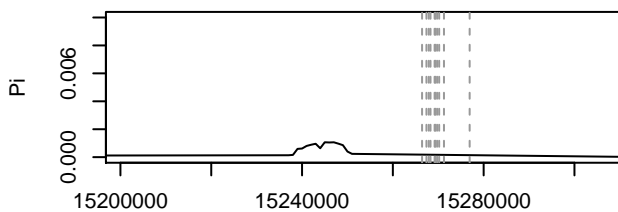
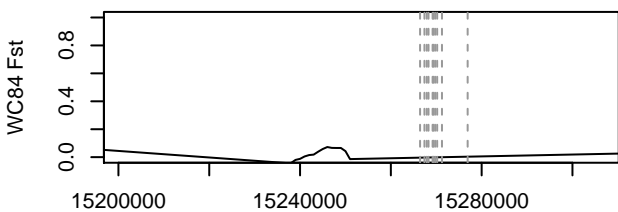
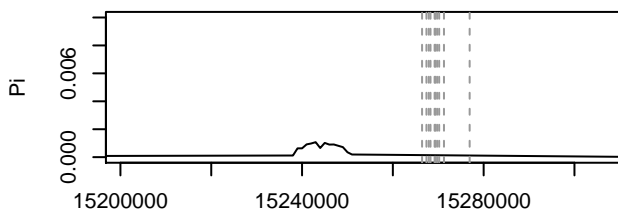


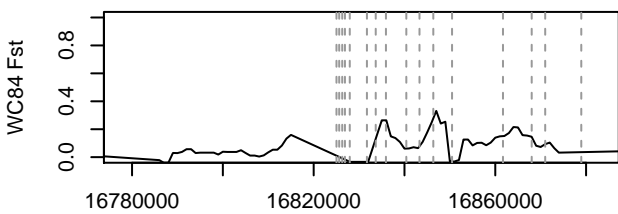
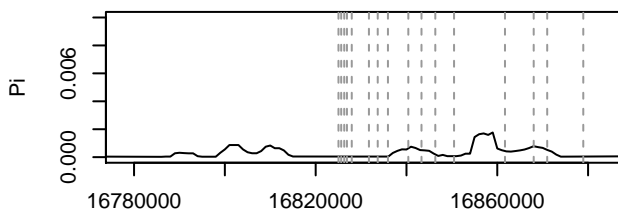
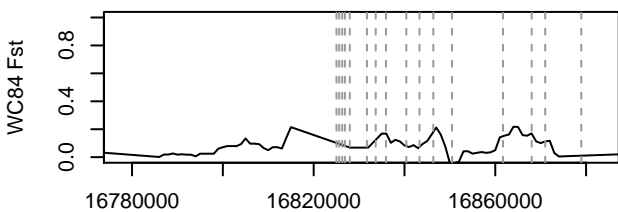
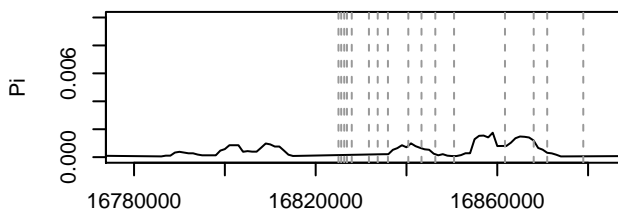
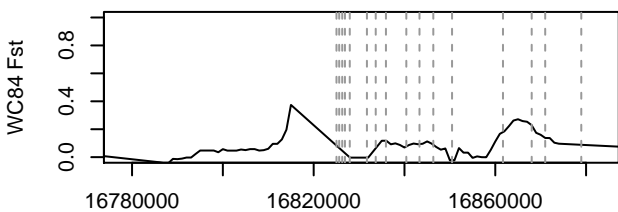
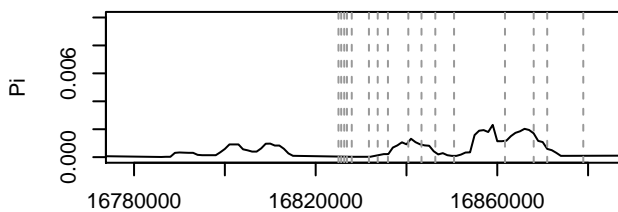
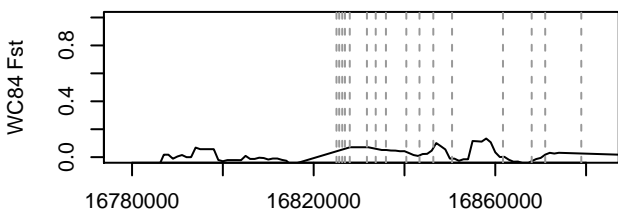
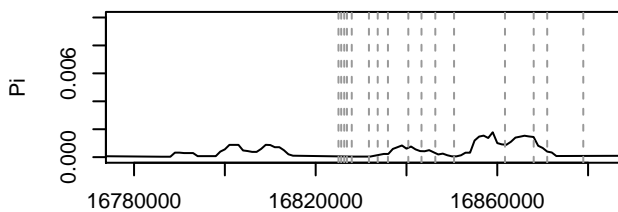
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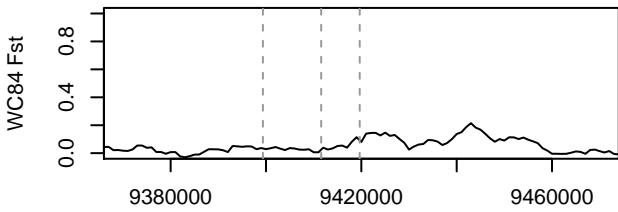
Portugal



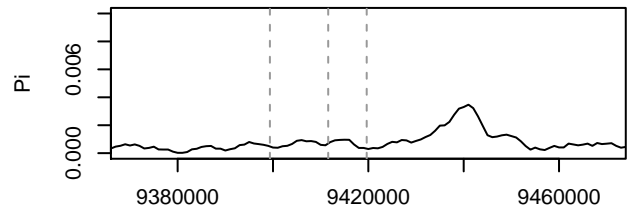
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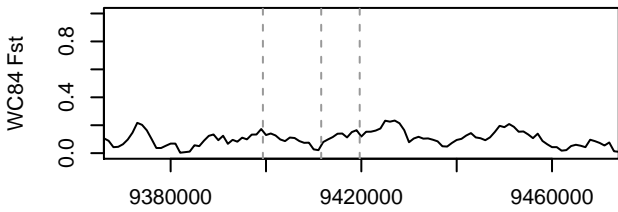
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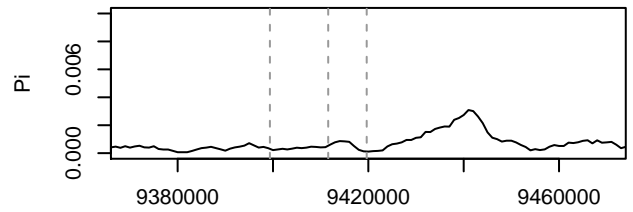
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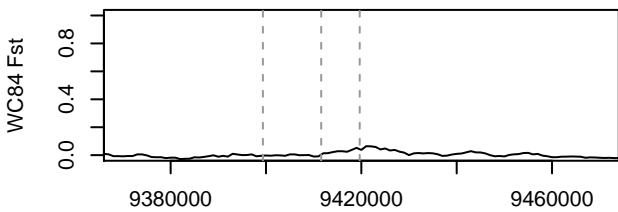
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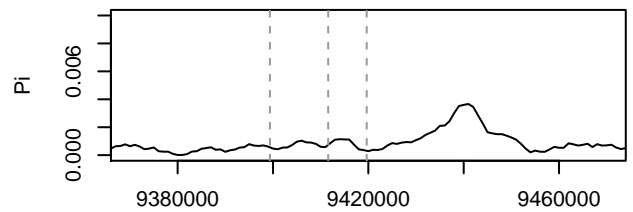
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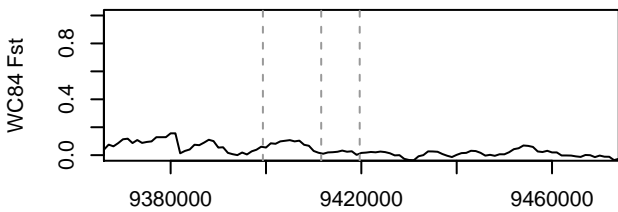
RAB38 : Brit – CEU



C Europe



RAB38 : PT – DK



Portugal

