Supplementary Figures

Multi-ancestry genome-wide gene-sleep interactions identify novel loci for blood pressure
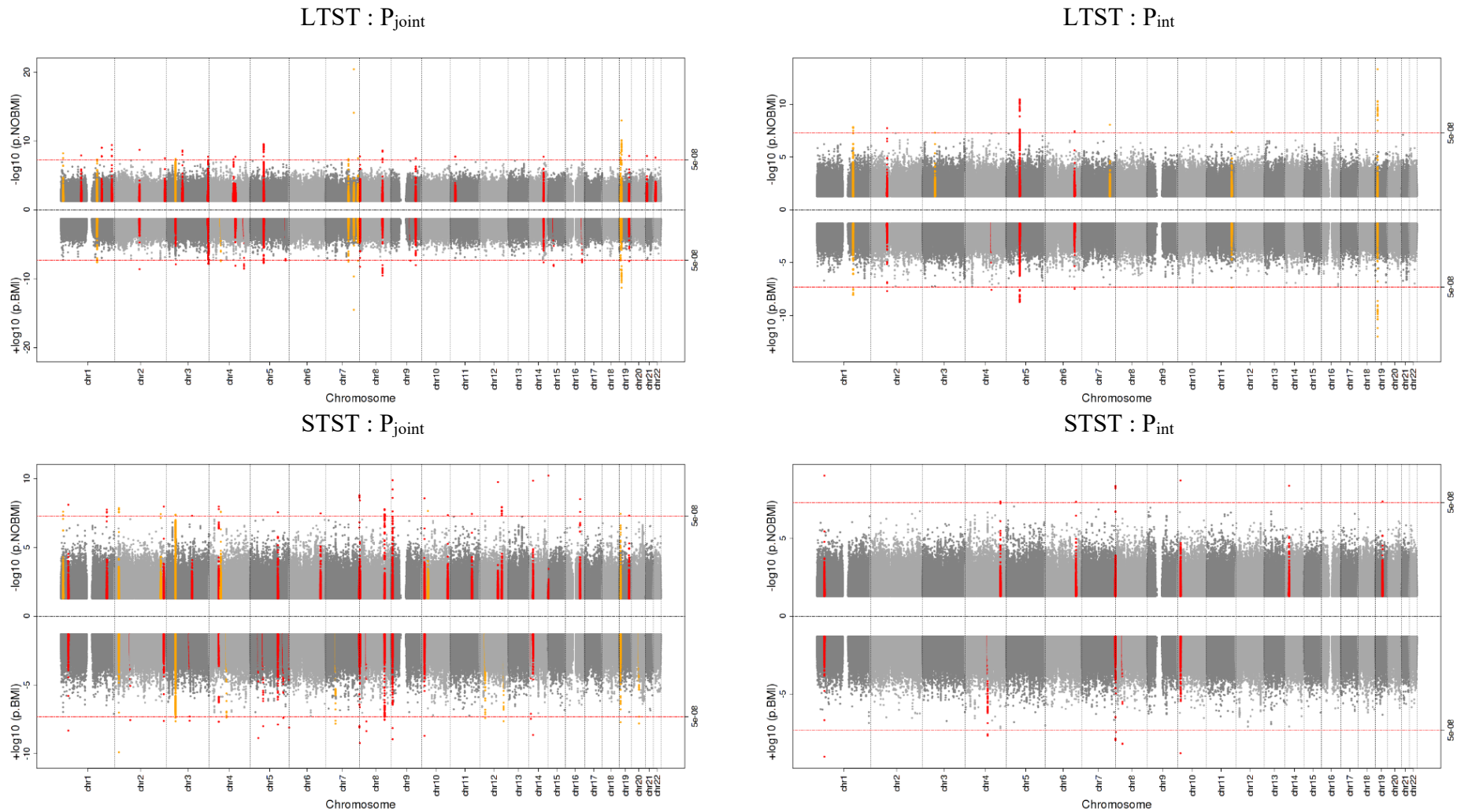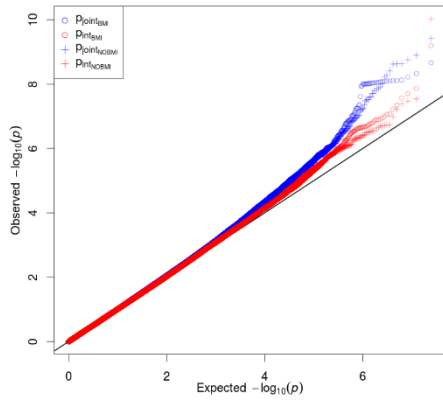
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Contents

Supplementary Fig. 1. Miami plots of genome-wide gene-sleep interaction analyses in stage 1 MULTI ancestry group.

Upper panel are results without adjusting for BMI, lower panel are results adjusted for BMI. The minimum p-values across four BP traits were used to generate each plot. The orange points correspond to significant loci ($P<5\times10^{-8}$) overlapped with previously reported BP loci (distance <1Mb), and the red points correspond to novel significant loci.
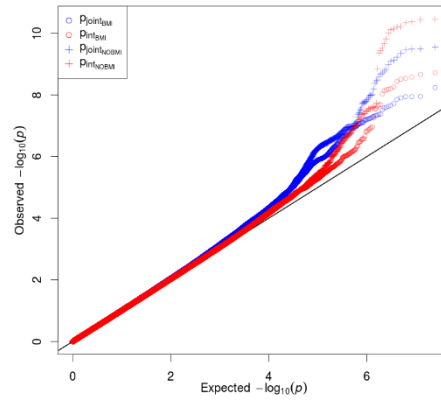
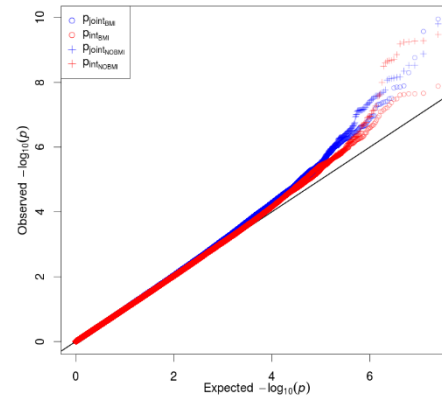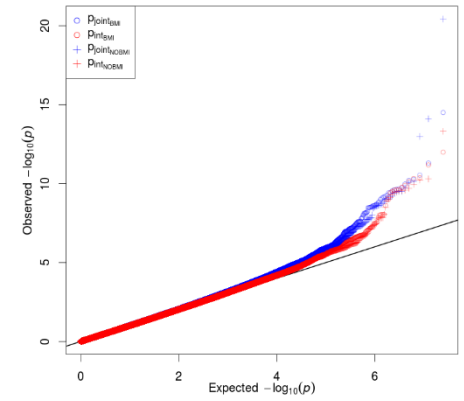Supplementary Fig. 2. QQ plots of genome-wide gene-sleep interaction analyses in stage 1 MULTI ancestry group.
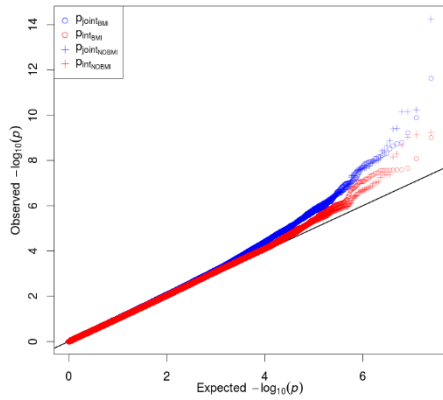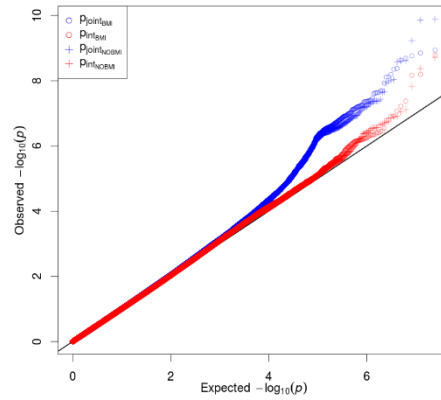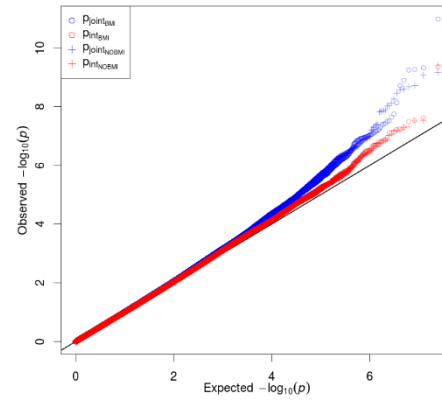

LTST-SBP   LTST-DBP   LTST-MAP   LTST-PP

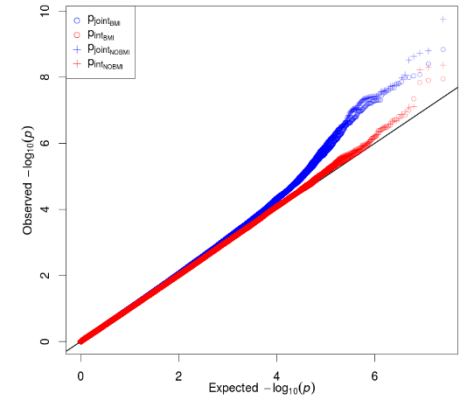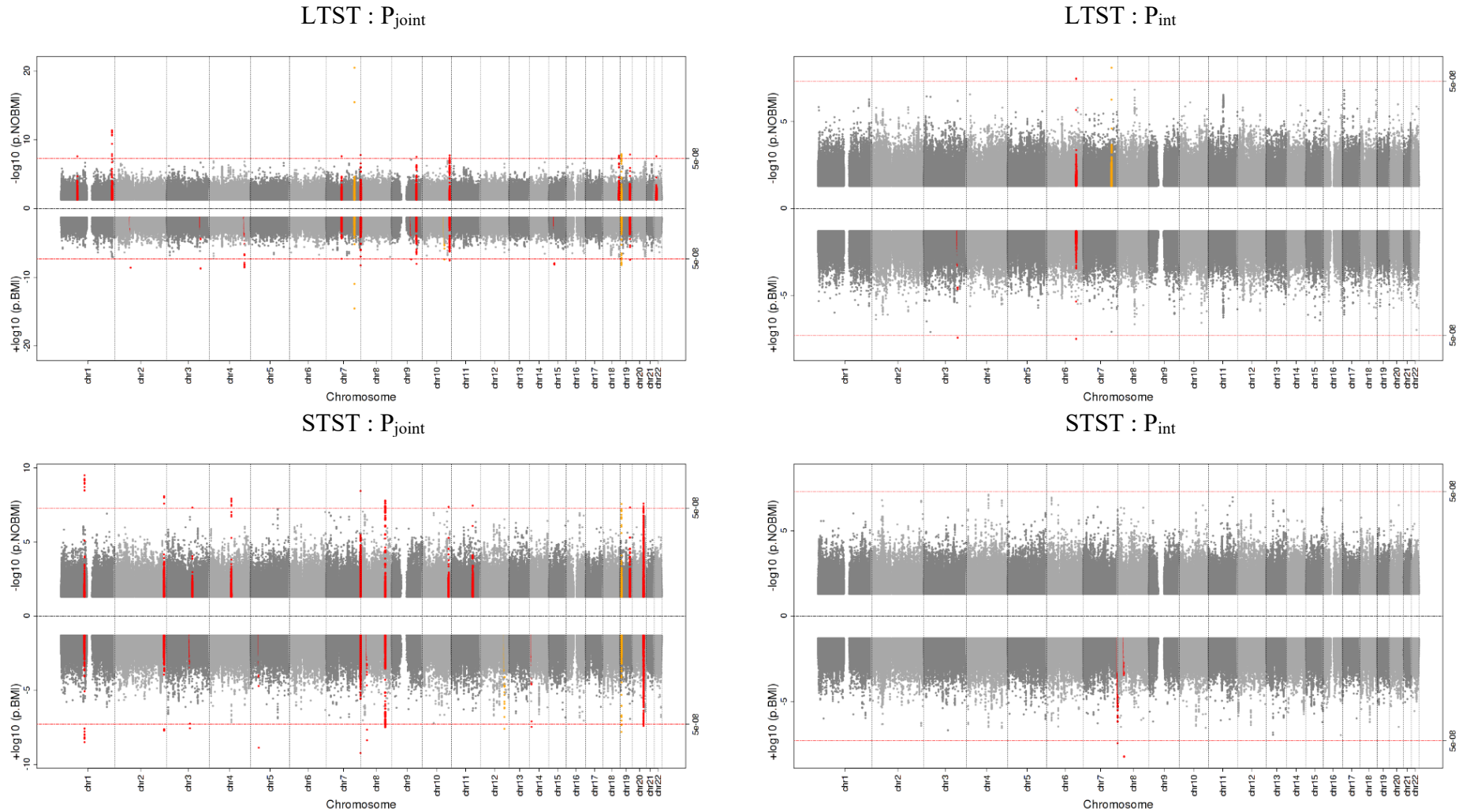STST-SBP   STST-DBP   STST-MAP   STST-PP

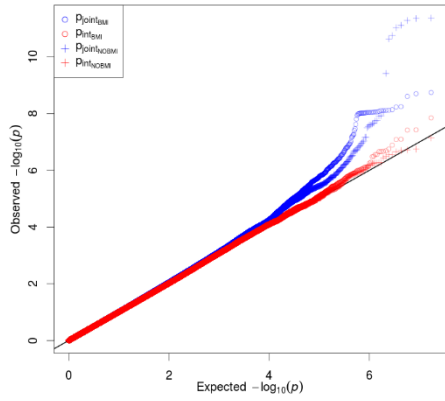# Supplementary Fig. 3. Miami plots of genome-wide gene-sleep interaction analyses in stage 1 EUR group.

Upper panel are results without adjusting for BMI, lower panel are results adjusted for BMI. The minimum p-values across four BP traits were used to generate each plot. The orange points correspond to significant loci ($P<5\times10^{-8}$) overlapped with previously reported BP loci (distance <1Mb), and the red points correspond to novel significant loci.
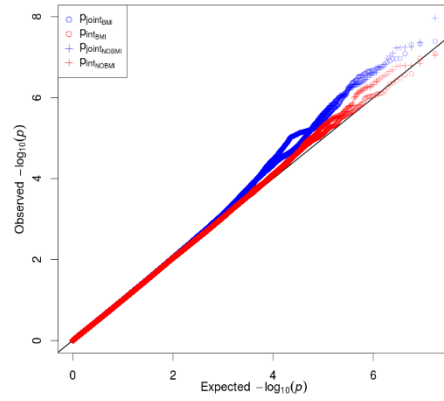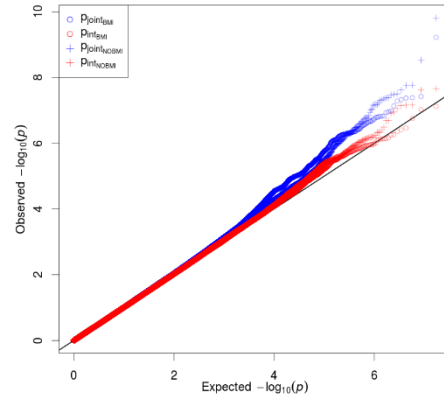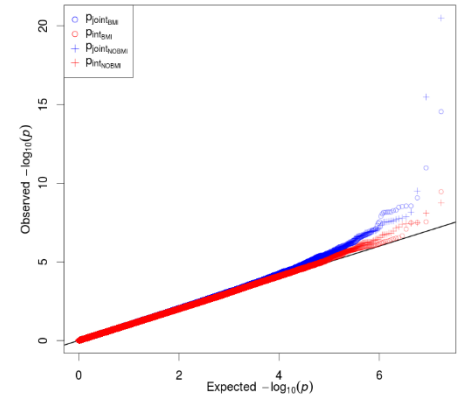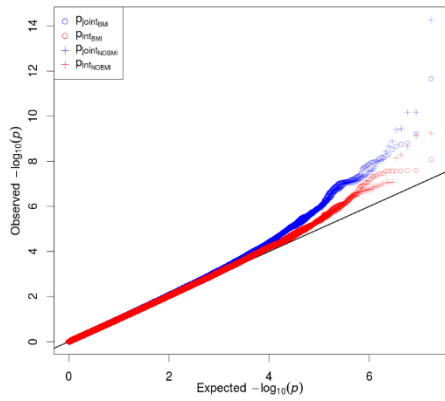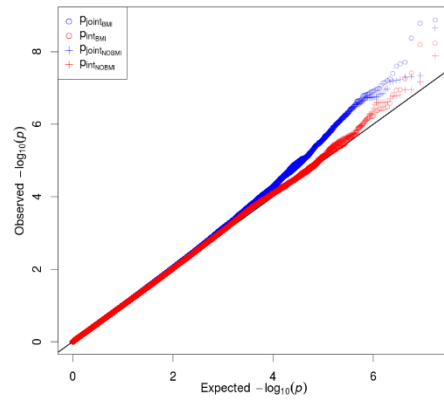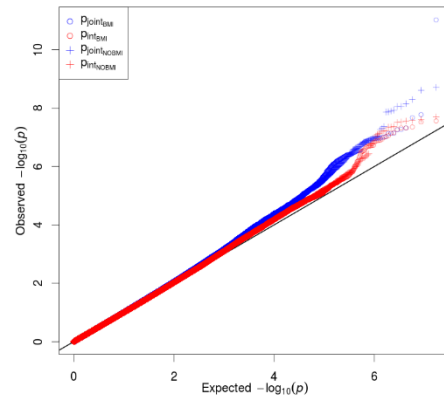
LTST : P_{joint}

LTST : P_{int}

STST : P_{joint}

STST : P_{int}

Supplementary Fig. 4. QQ plots of genome-wide gene-sleep interaction analyses in stage 1 EUR group.

LTST-SBP

LTST-DBP
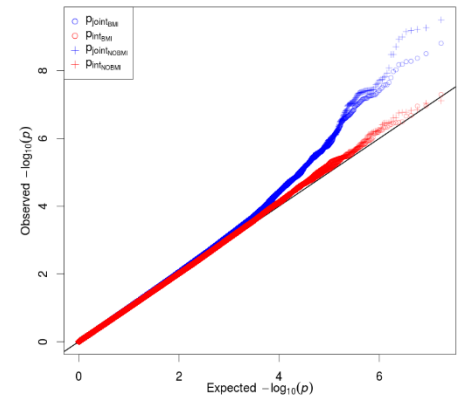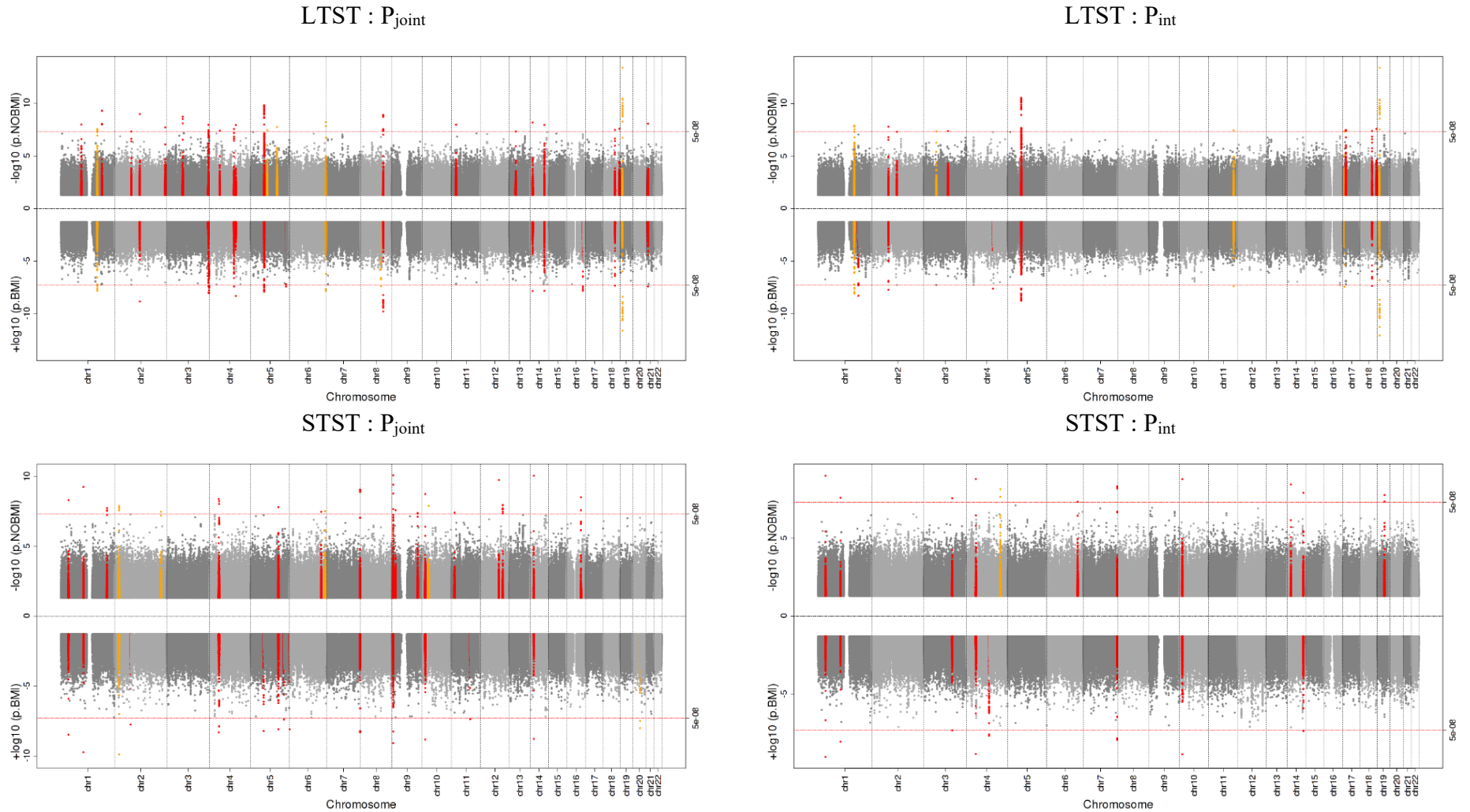
LTST-MAP

LTST-PP
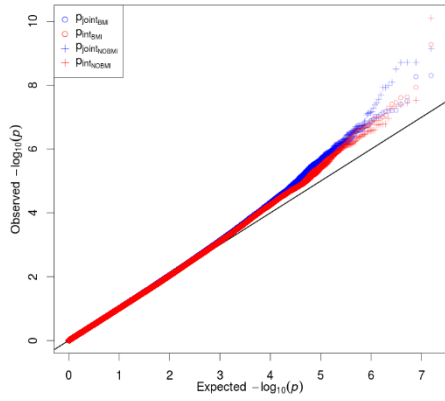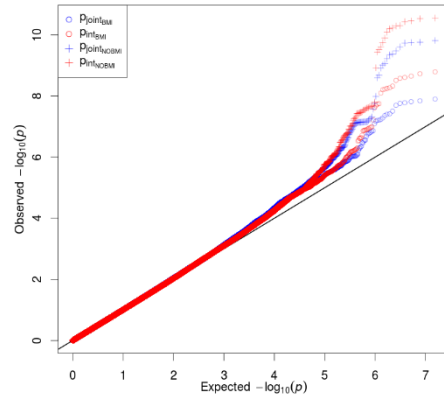
STST-SBP

STST-DBP

STST-MAP

STST-PP

Supplementary Fig. 5. Miami plots of genome-wide gene-sleep interaction analyses in stage 1 AFR group.

Upper panel are results without adjusting for BMI, lower panel are results adjusted for BMI. The minimum p-values across four BP traits were used to generate each plot. The orange points correspond to significant loci (P<5×10-8) overlapped with previously reported BP loci (distance <1Mb), and the red points correspond to novel significant loci.

LTST : P_joint

LTST : P_int

STST : P_joint

STST : P_int

Supplementary Fig. 6. QQ plots of genome-wide gene-sleep interaction analyses in stage 1 AFR group.
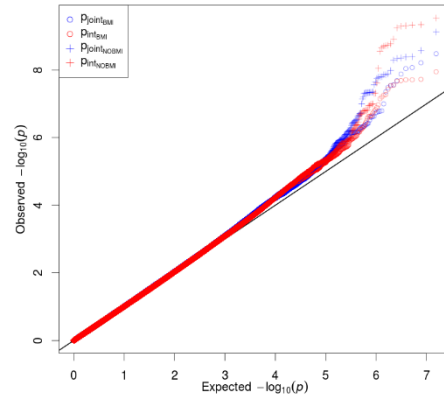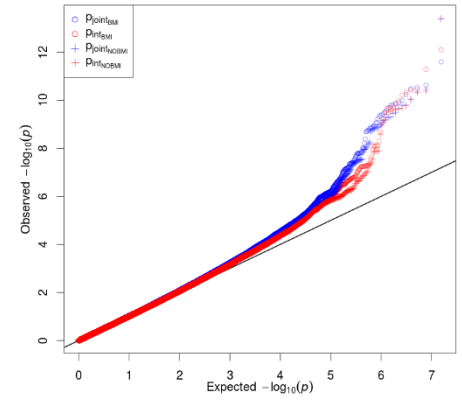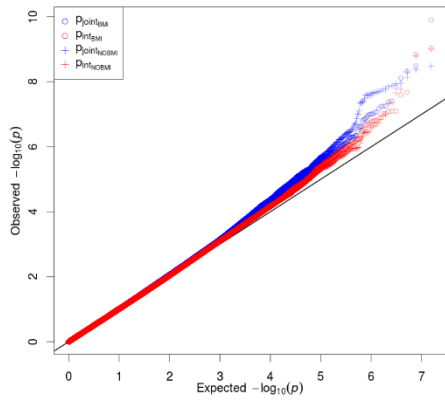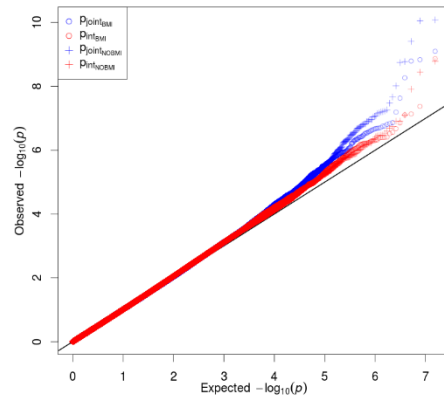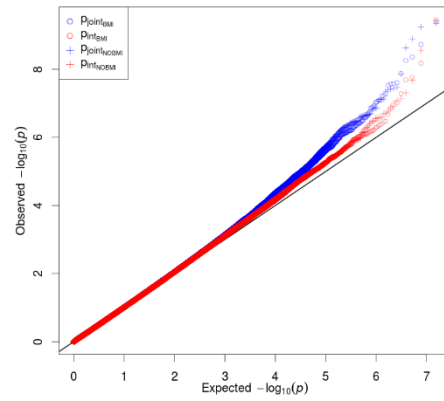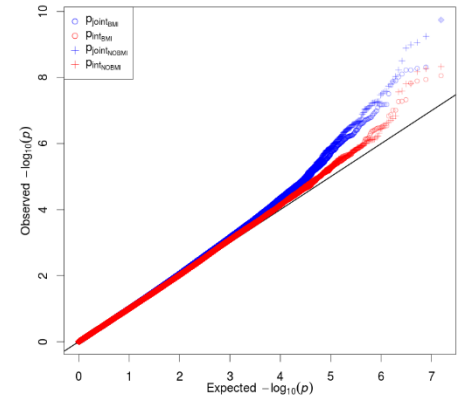
Supplementary Fig. 7. Regional association plots of P_{joint} and P_{int} for 3 replicated novel loci in stage 1+2 MULTI ancestry analyses (Table 1).
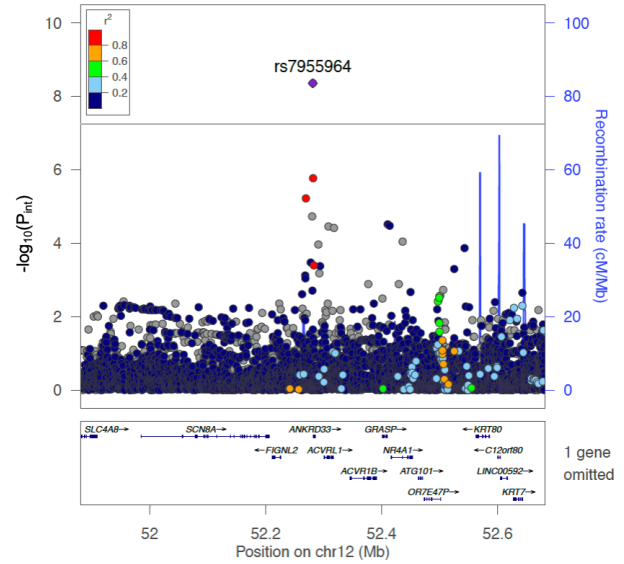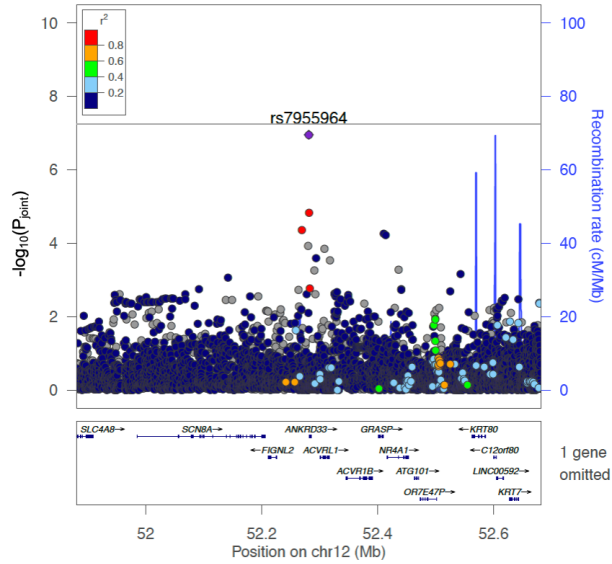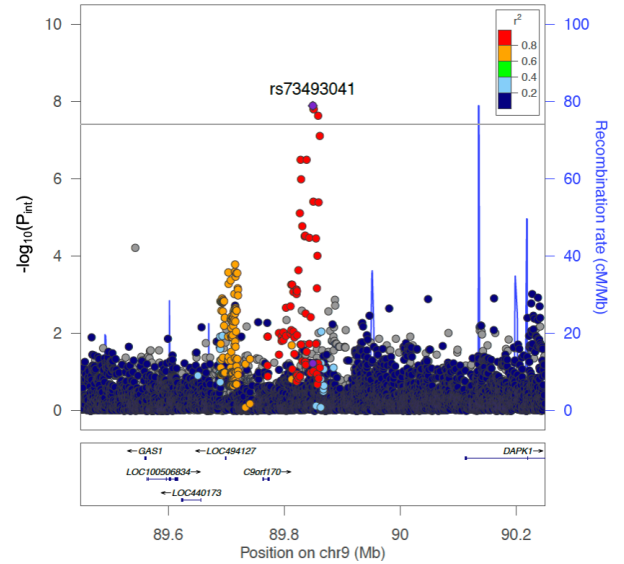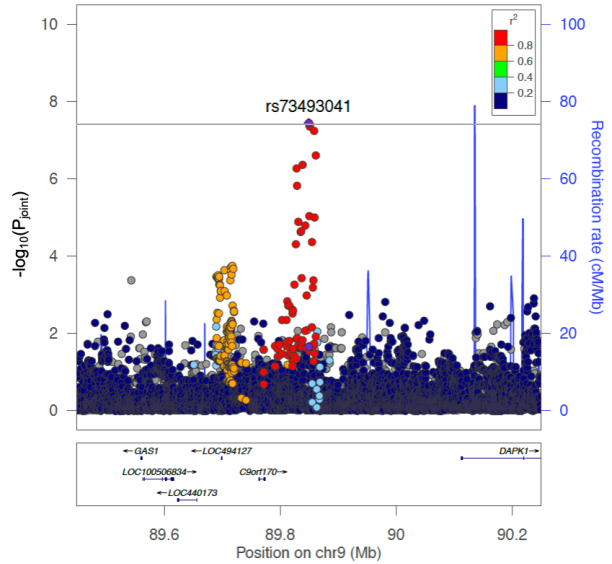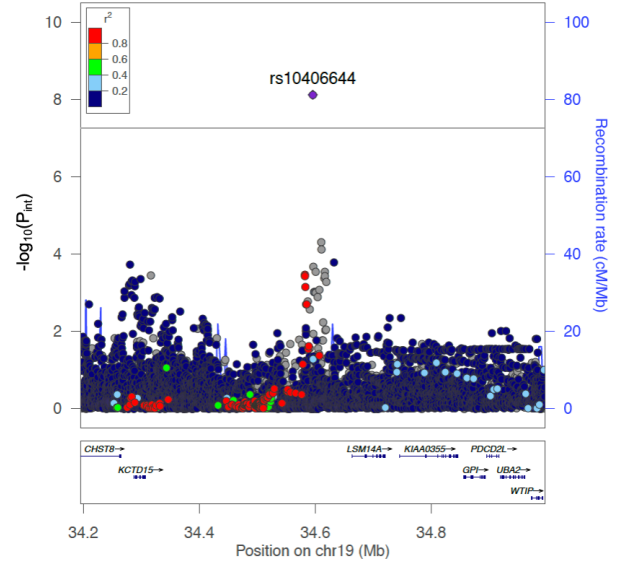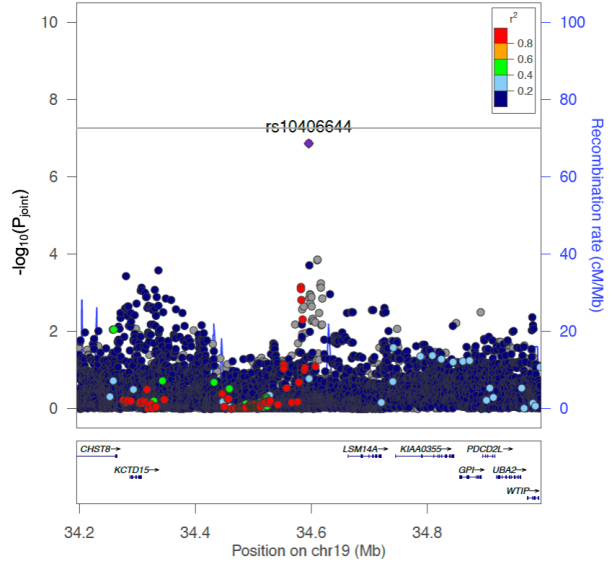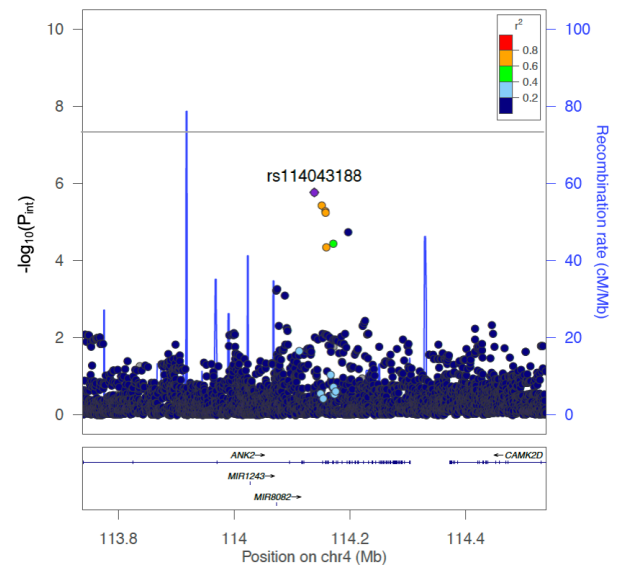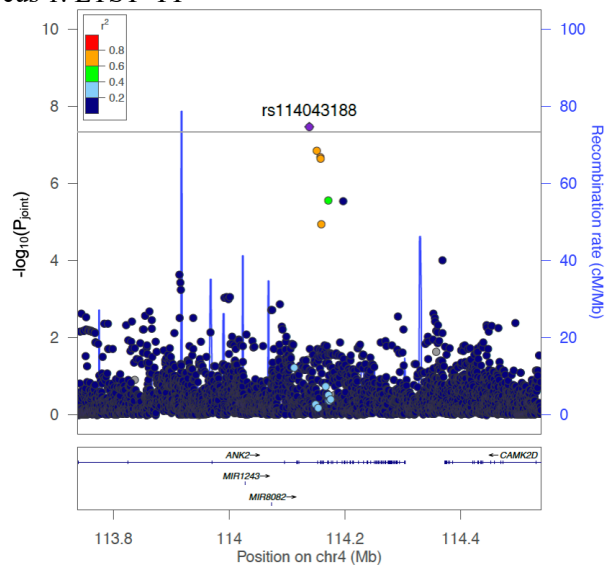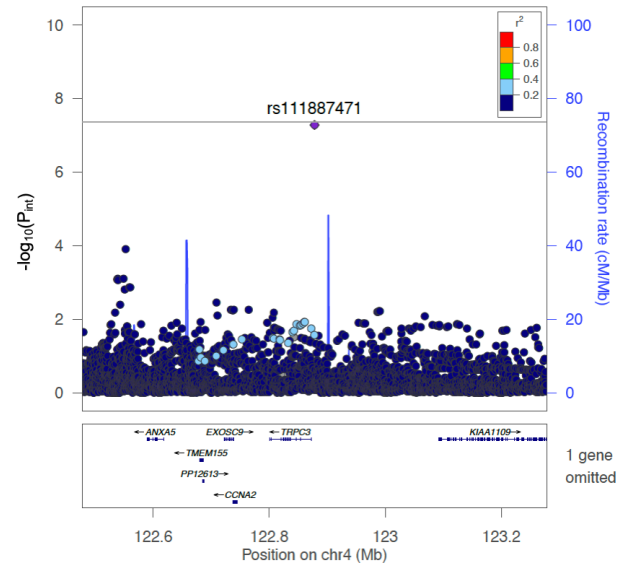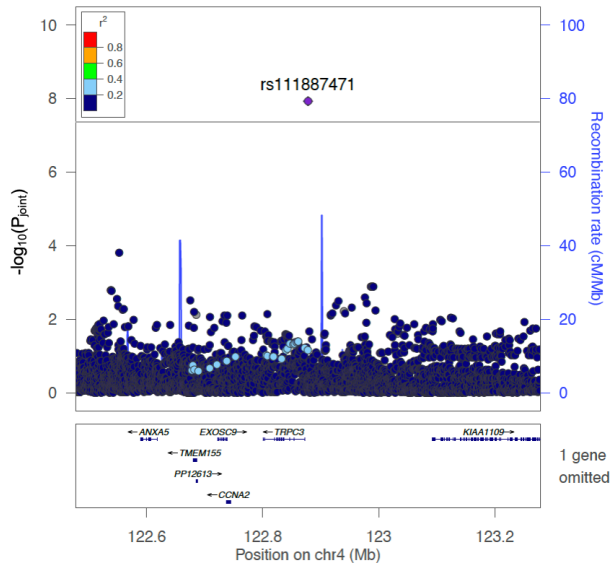
Locus 1. LTST- MAP

Locus 2. STST- DBP

Locus 3. STST- PP

Supplementary Fig. 8. Regional association plots of P_{joint} and P_{int} for 3 novel loci in stage 1 AFR analyses (Supplementary Table 8).
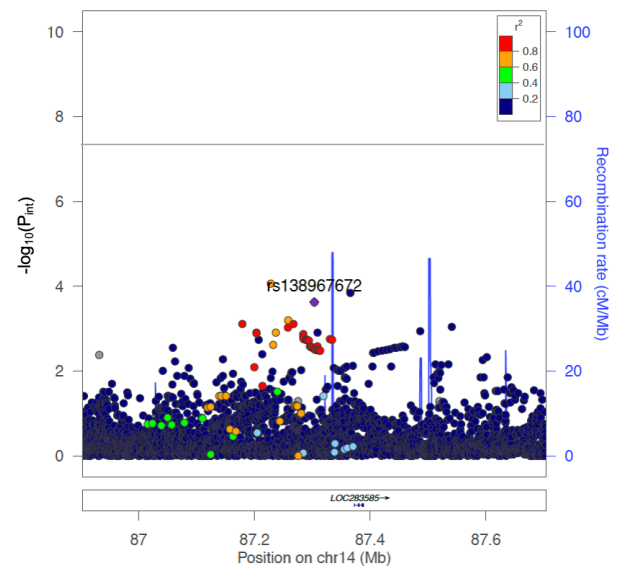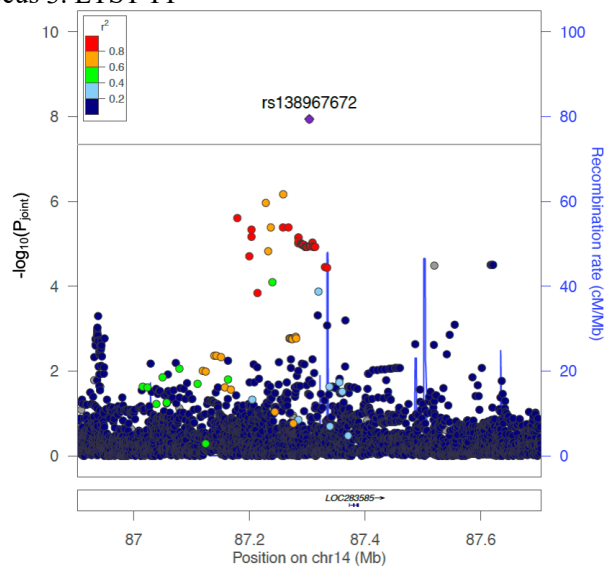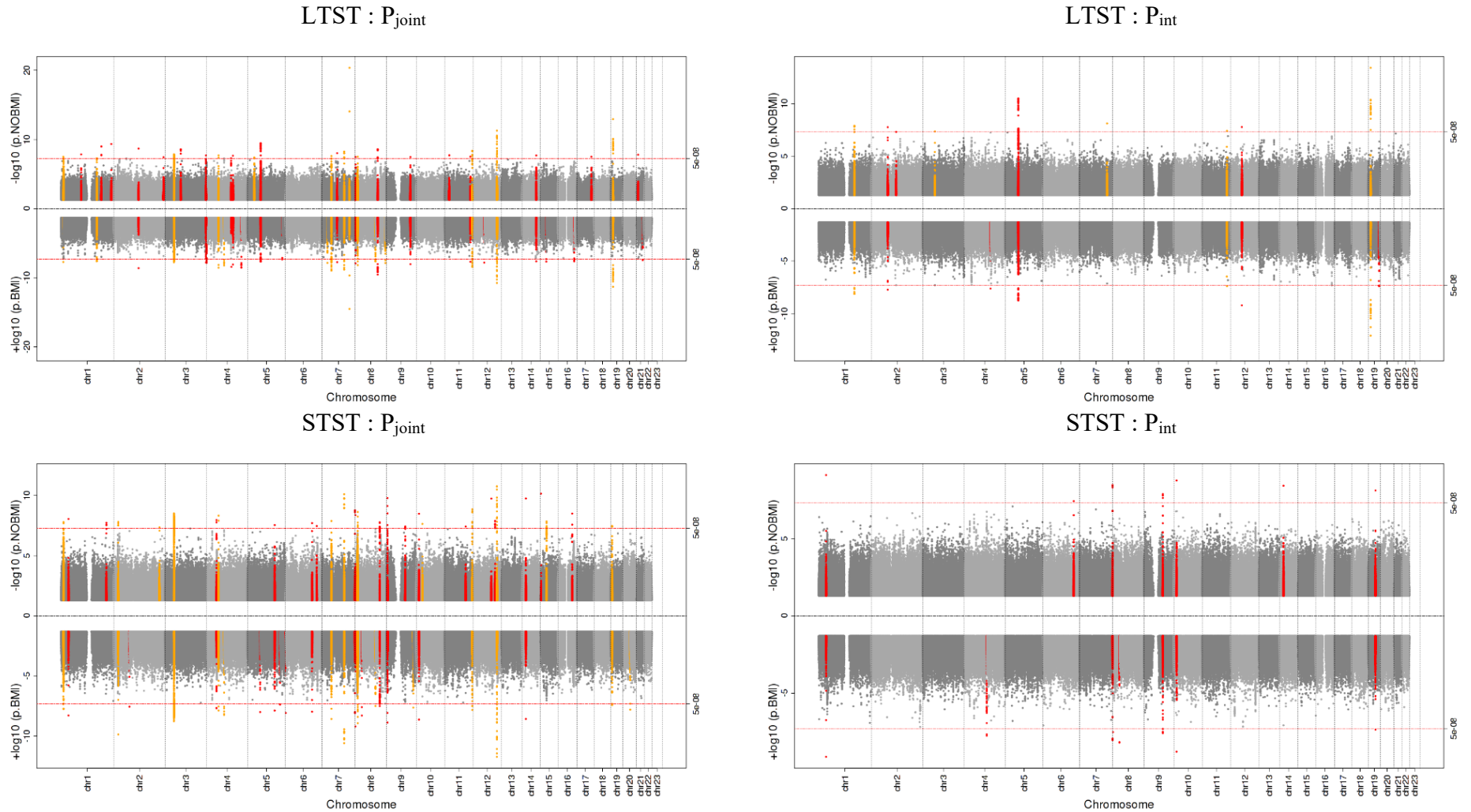
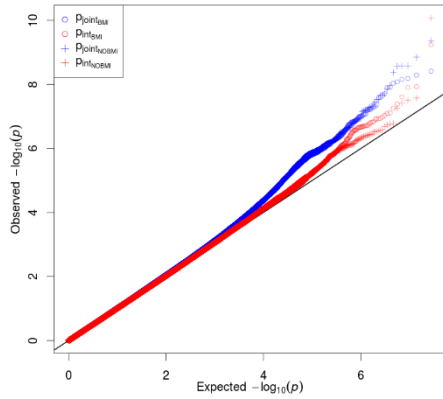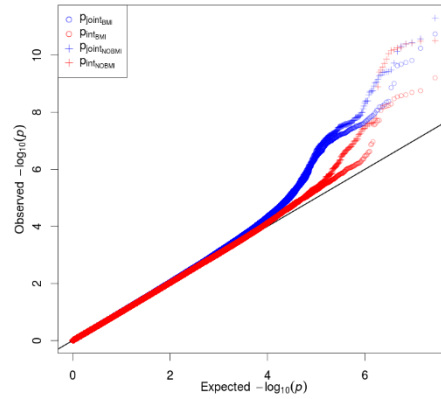Locus 1. LTST- PP

Locus 2. LTST-SBP

Locus 3. LTST-PP

Supplementary Fig. 9. Miami plots of genome-wide gene-sleep interaction analyses in stage 1+2 MULTI ancestry group.

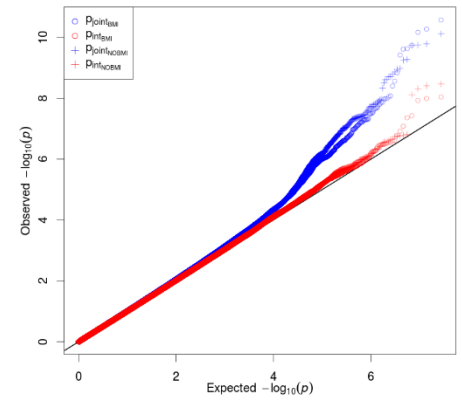Upper panel are results without adjusting for BMI, lower panel are results adjusted for BMI. The minimum p-values across four BP traits were used to generate each plot. The orange points correspond to significant loci (P<5×10-8) overlapped with previously reported BP loci (distance <1Mb), and the red points correspond to novel significant loci.

LTST : P_{joint}

LTST : P_{int}

STST : P_{joint}

STST : P_{int}

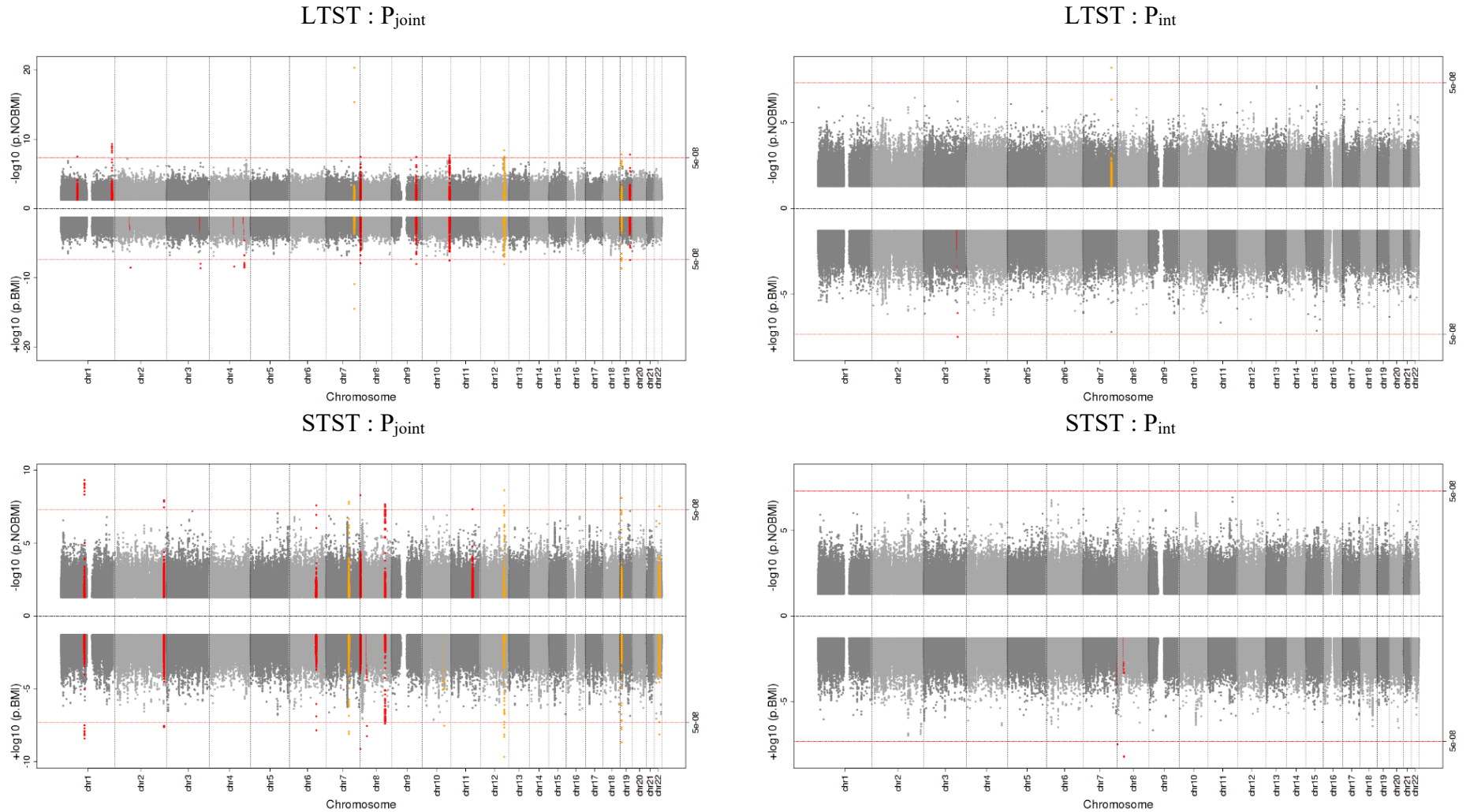Supplementary Fig. 10. QQ plots of genome-wide gene-sleep interaction analyses in stage 1+2 MULTI ancestry group.
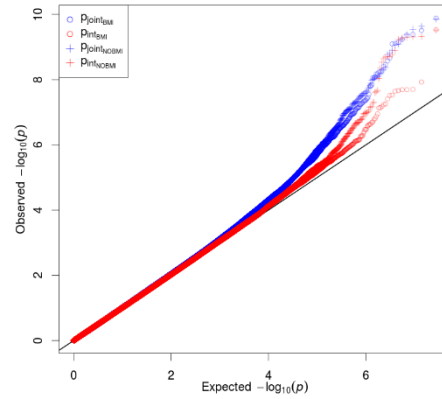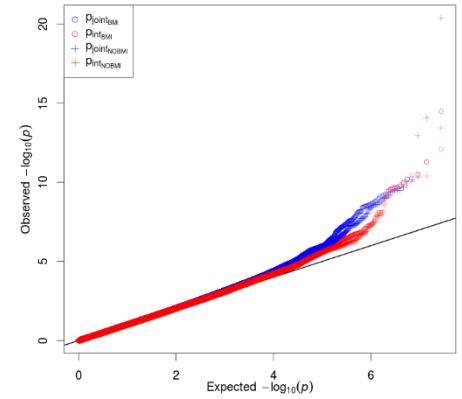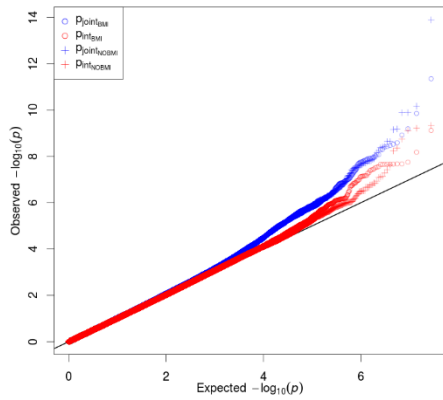
## Supplementary Fig. 11. Miami plots of genome-wide gene-sleep interaction analyses in stage 1+2 EUR group.

Upper panel are results without adjusting for BMI, lower panel are results adjusted for BMI. The minimum p-values across four BP traits were used to generate each plot. The orange points correspond to significant loci (P<5×10-8) overlapped with previously reported BP loci (distance <1Mb), and the red points correspond to novel significant loci.

LTST : P_{joint}

LTST : P_{int}

STST : P_{joint}

STST : P_{int}

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Supplementary Fig. 12. QQ plots of genome-wide gene-sleep interaction analyses in stage 1+2 EUR group.
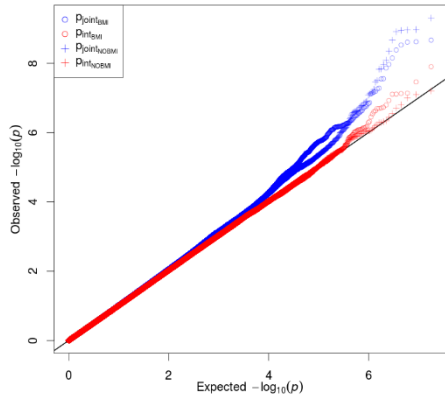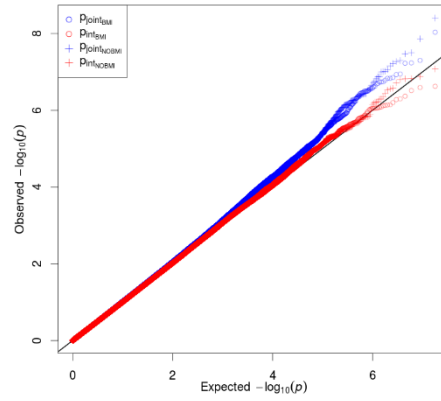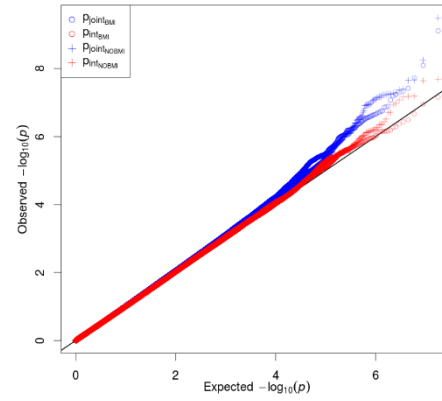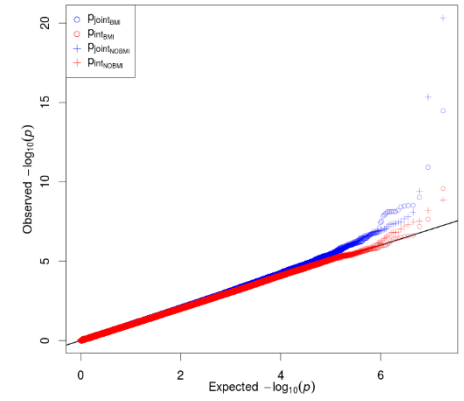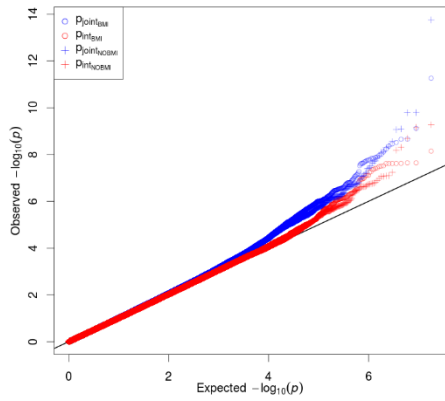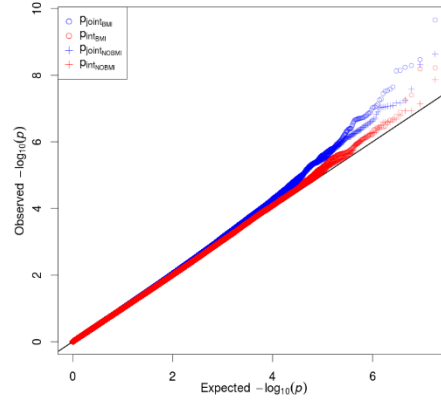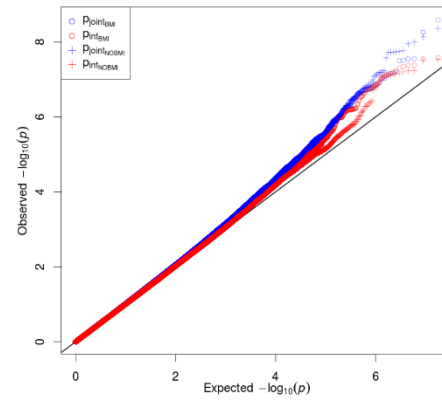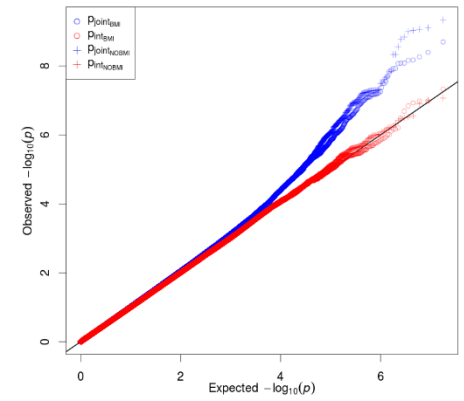
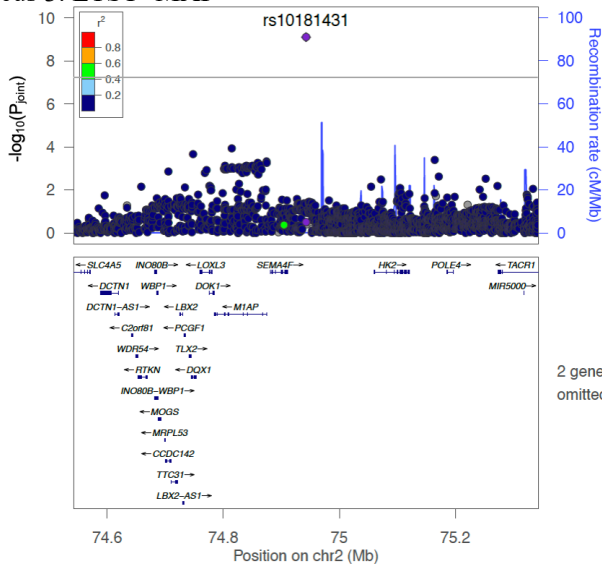## Supplementary Fig. 13. Regional association plots of P_{joint} and P_{int} for 20 novel loci in stage 1+2 analyses (Supplementary Table 10).
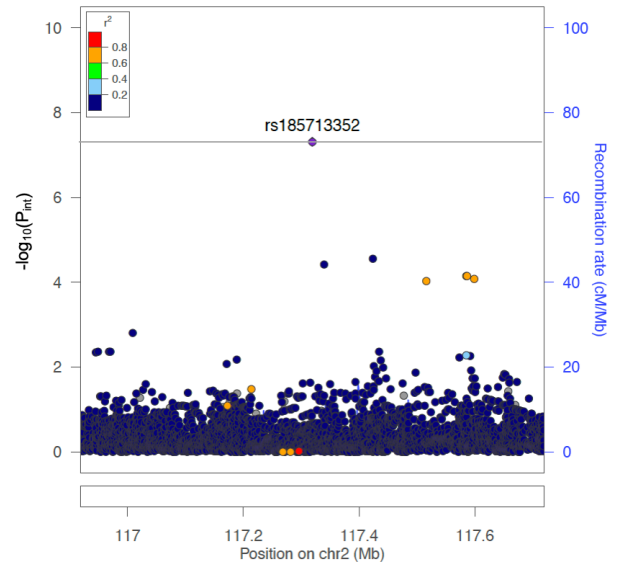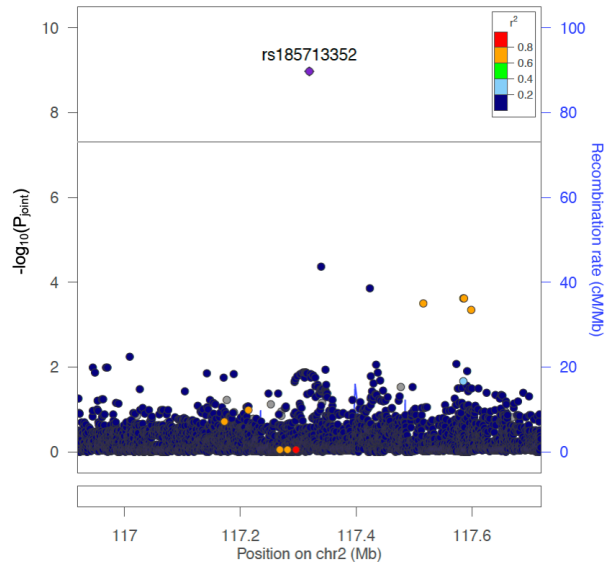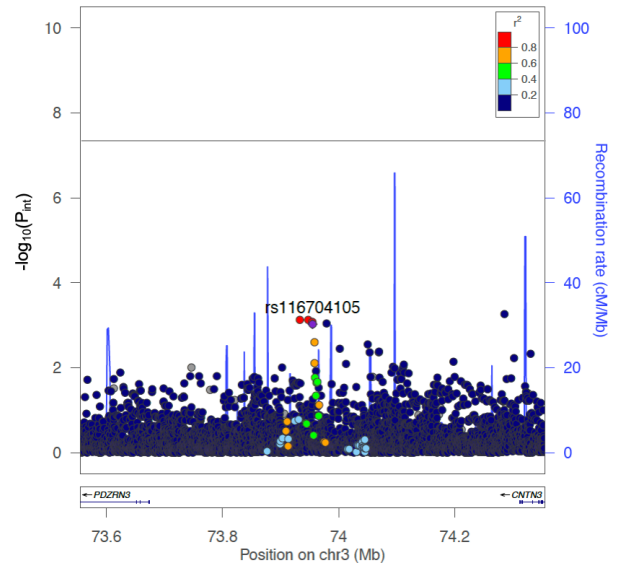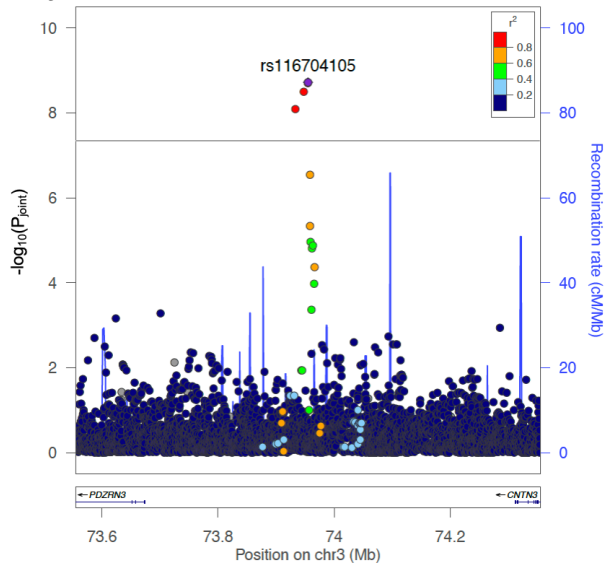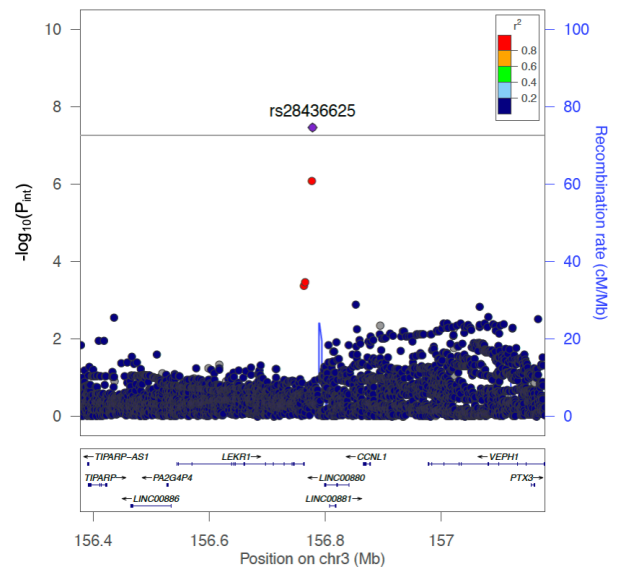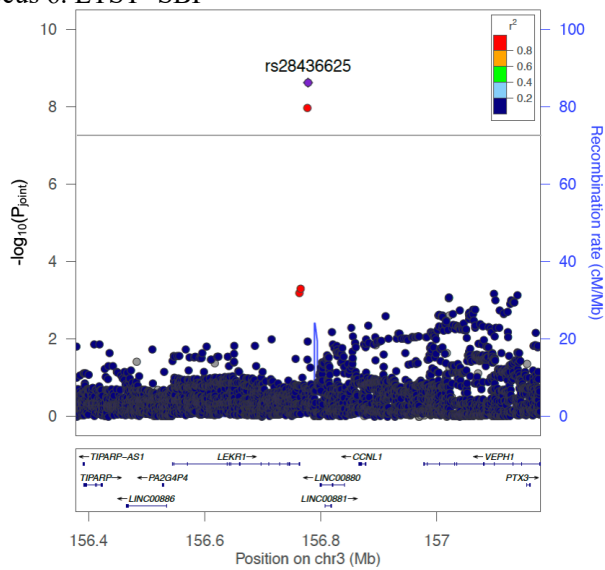
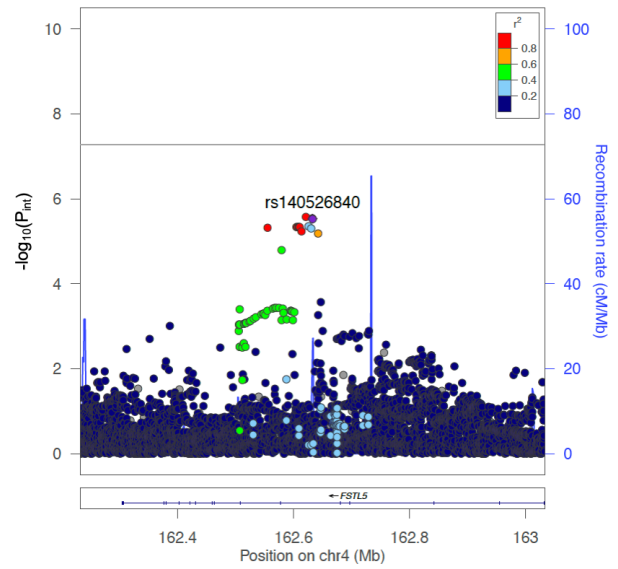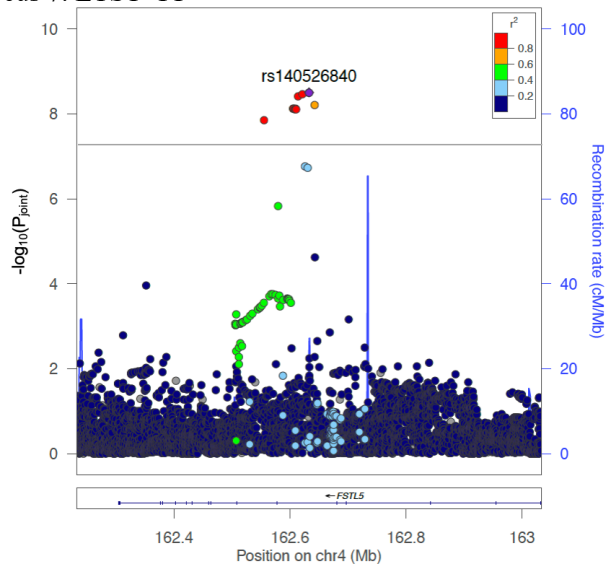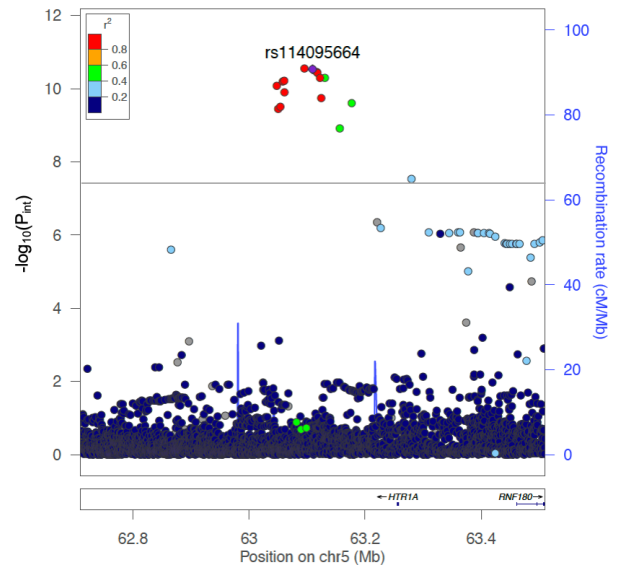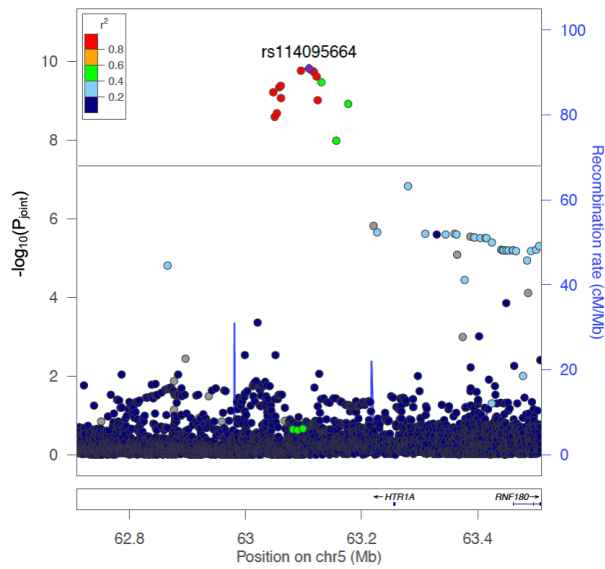Locus 1. LTST- PP
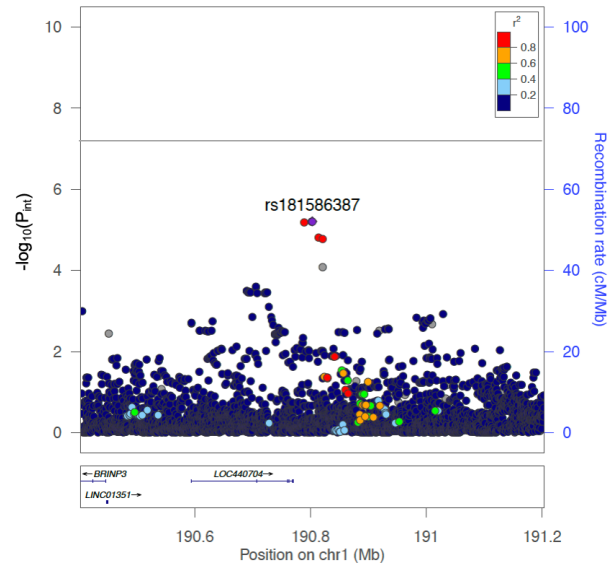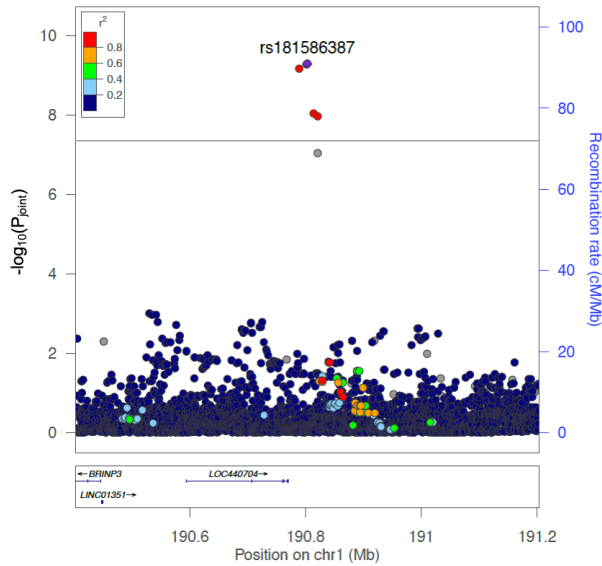
Locus 2. LTST- SBP
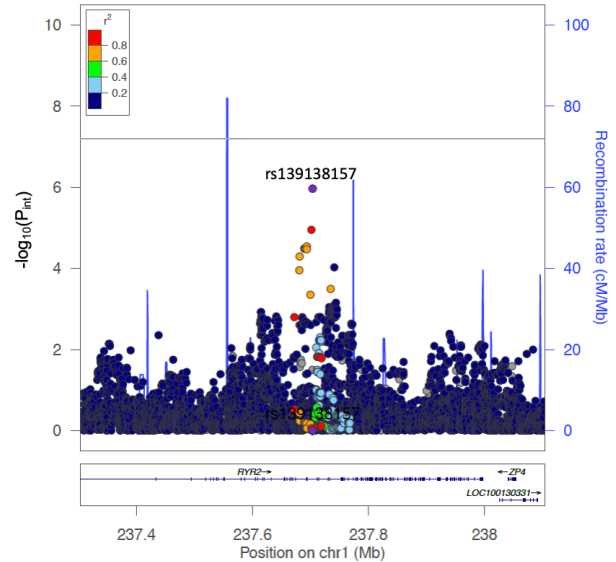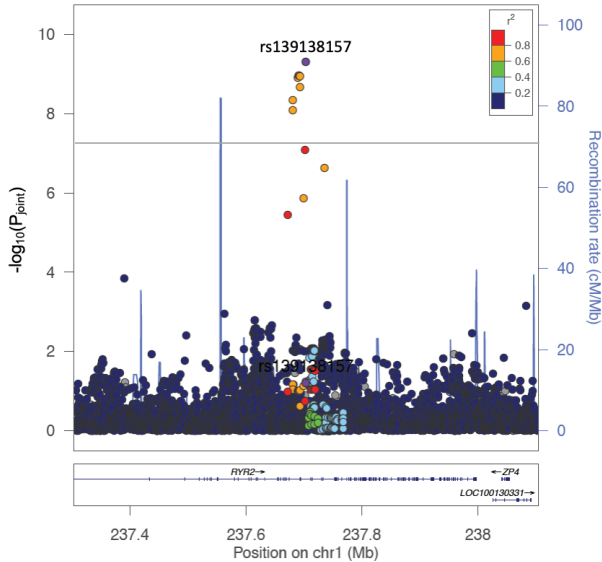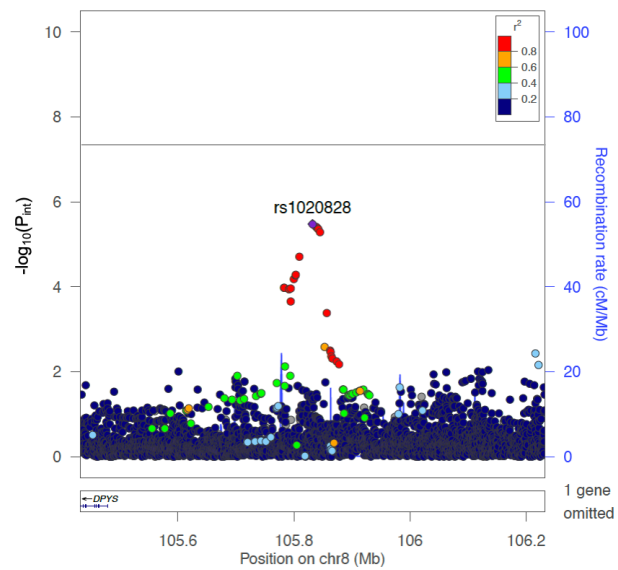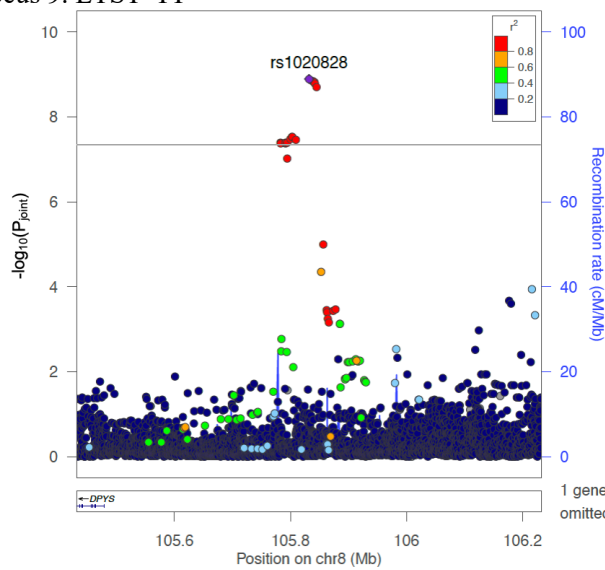

Locus 3. LTST- MAP
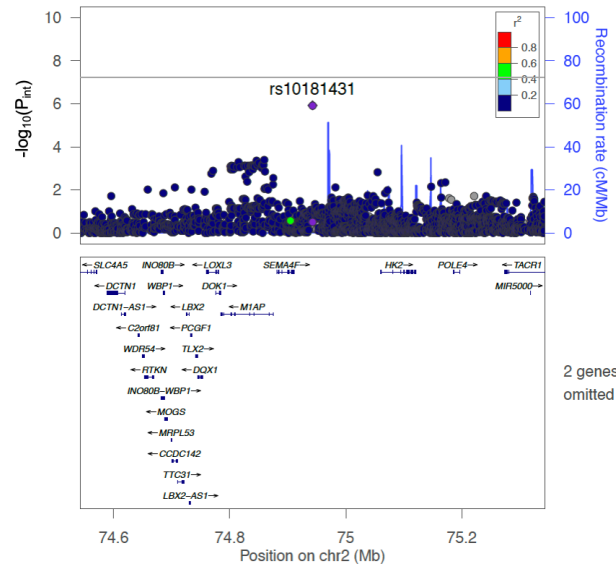
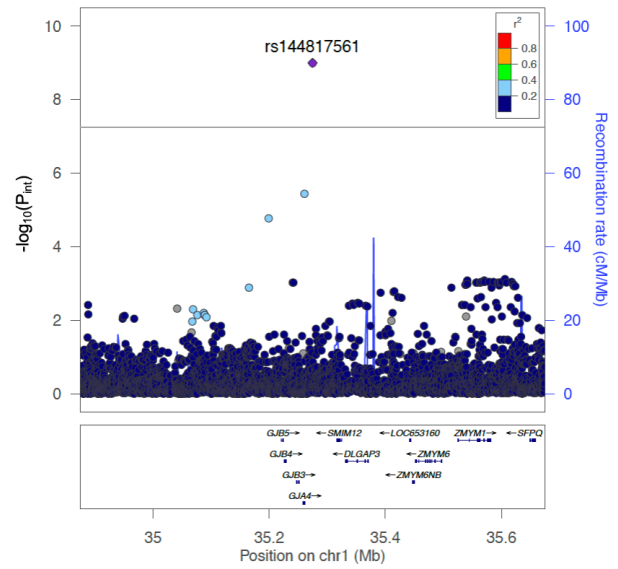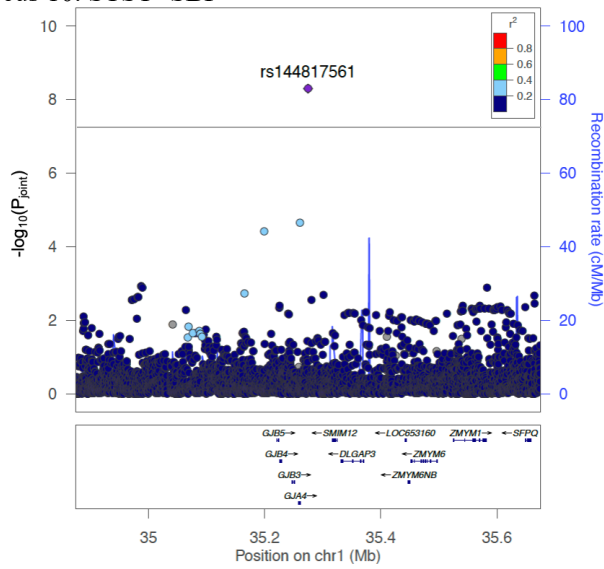Locus 4. LTST- PP

Locus 5. LTST- SBP

Locus 6. LTST- SBP

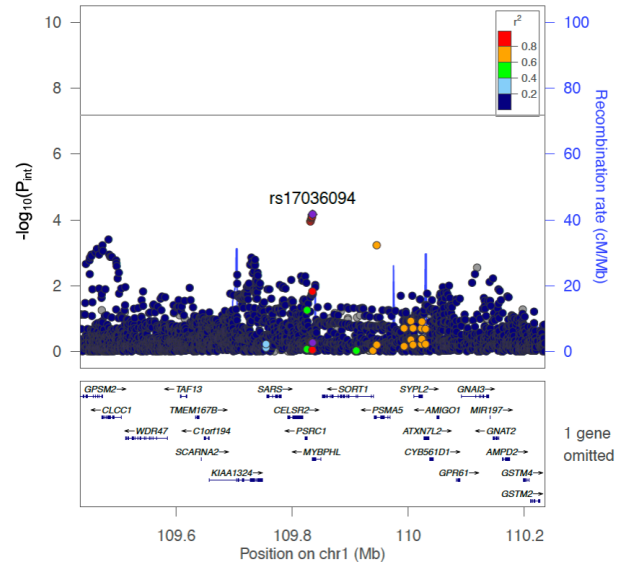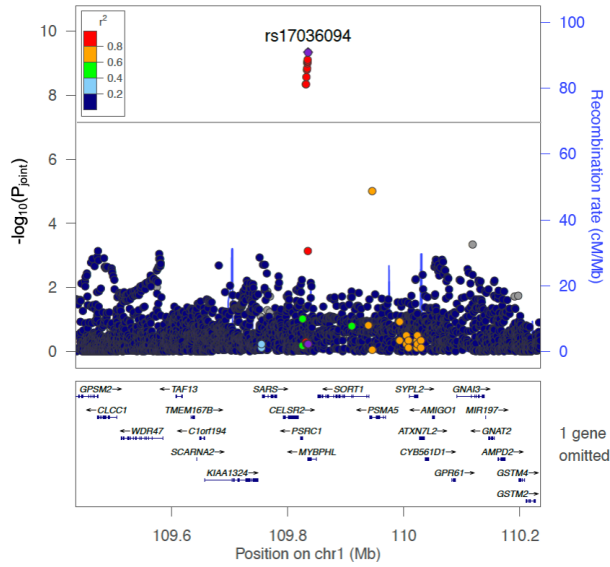Locus 7. LTST- PP
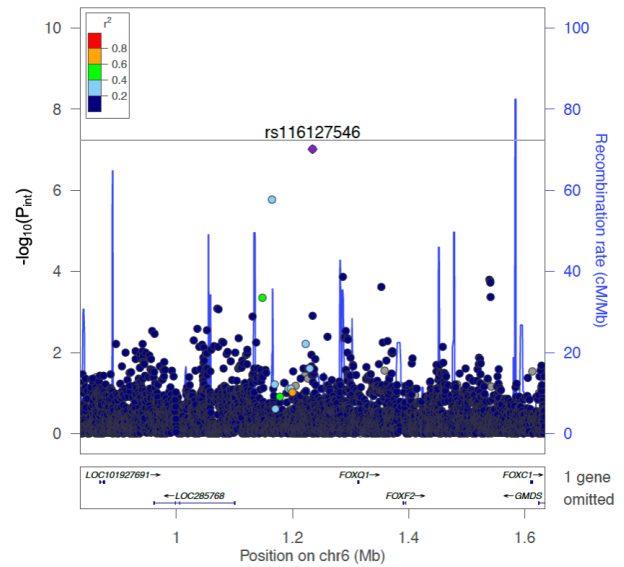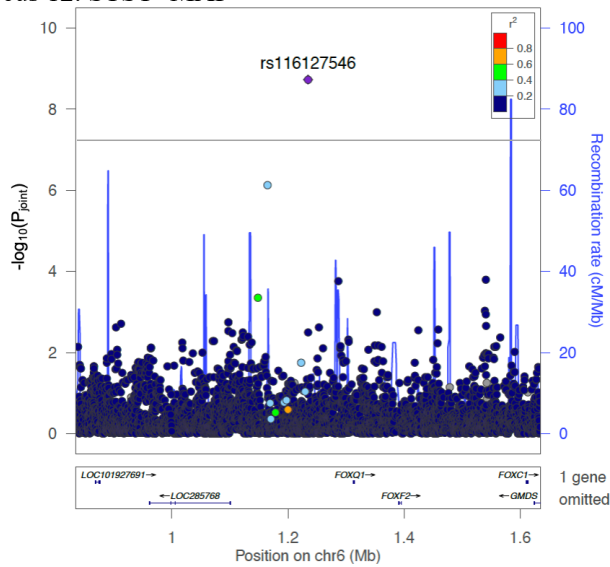

Locus 8. LTST- DBP
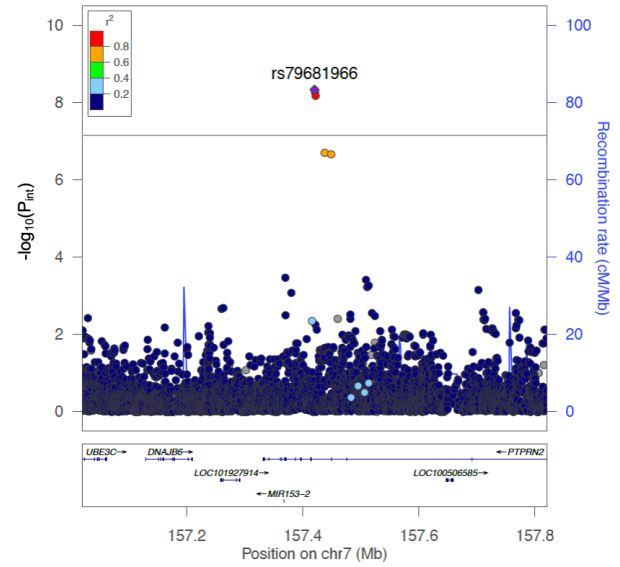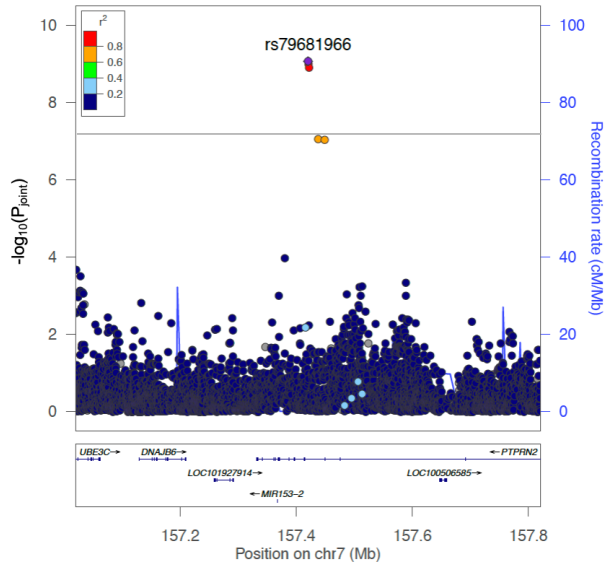

Locus 9. LTST- PP

Locus 10. STST- SBP
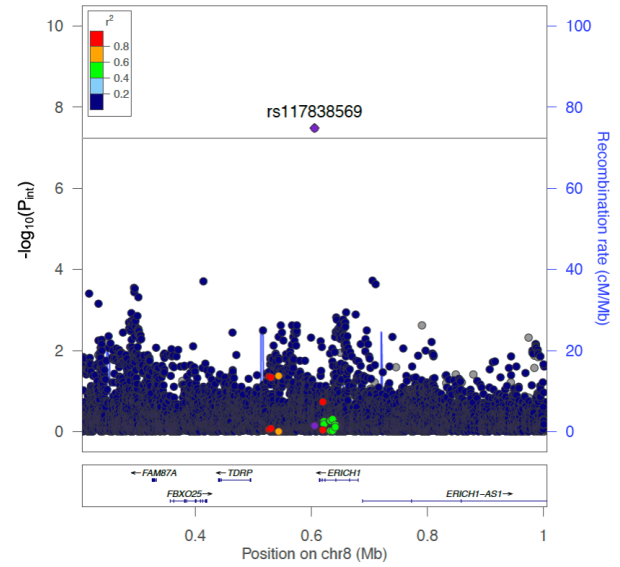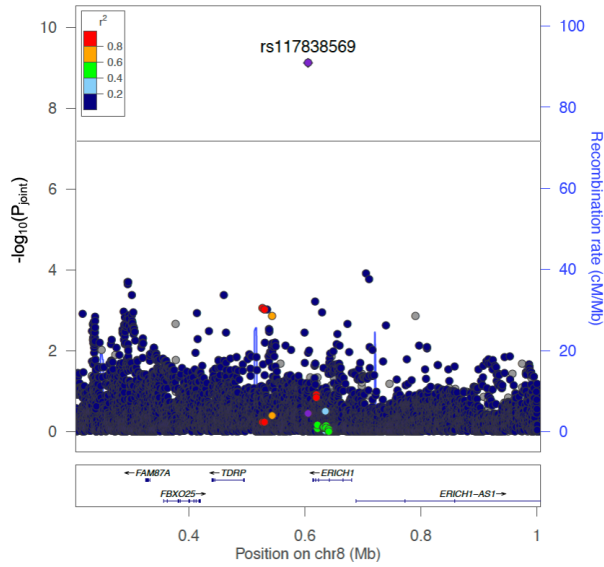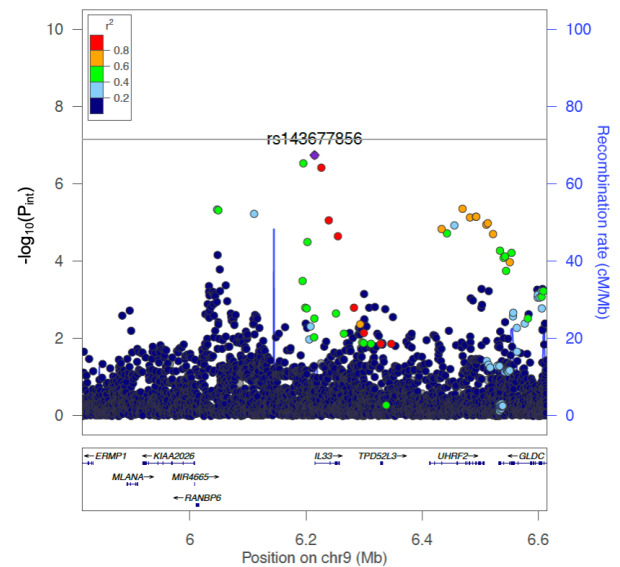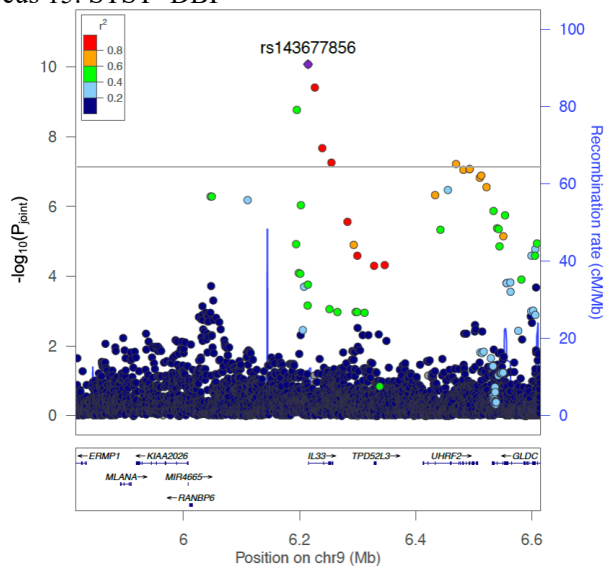

Locus 11. STST- PP

Locus 12. STST- MAP

Locus 13. STST- PP

Locus 14. STST- SBP
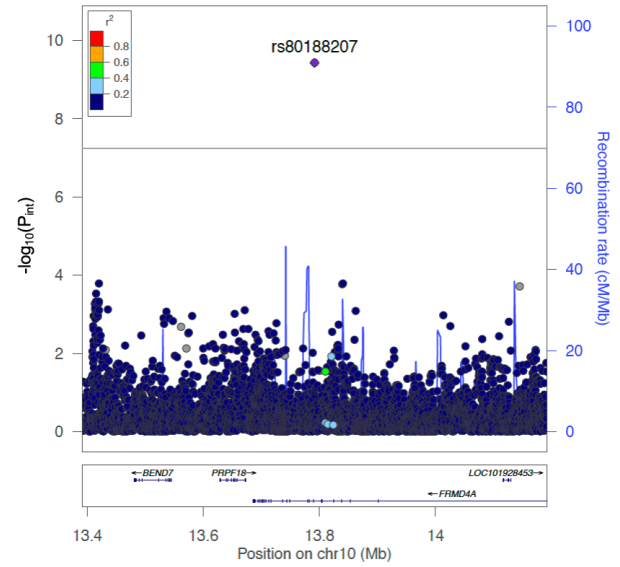

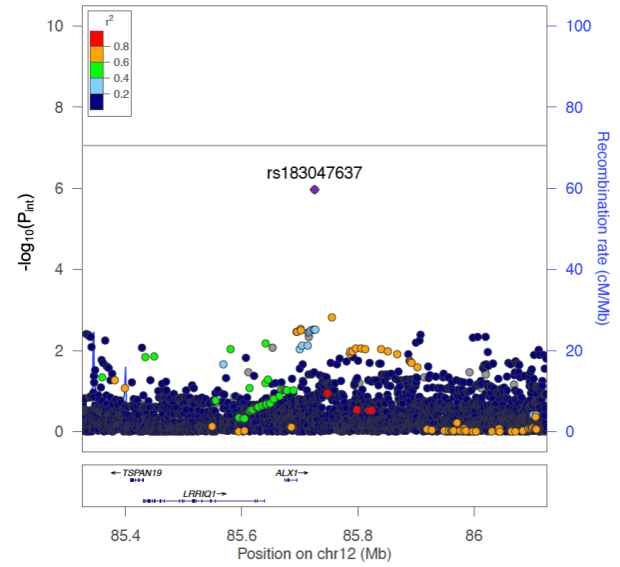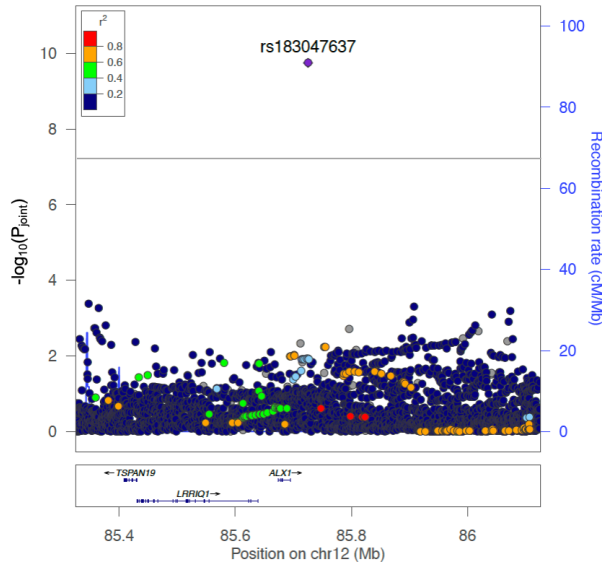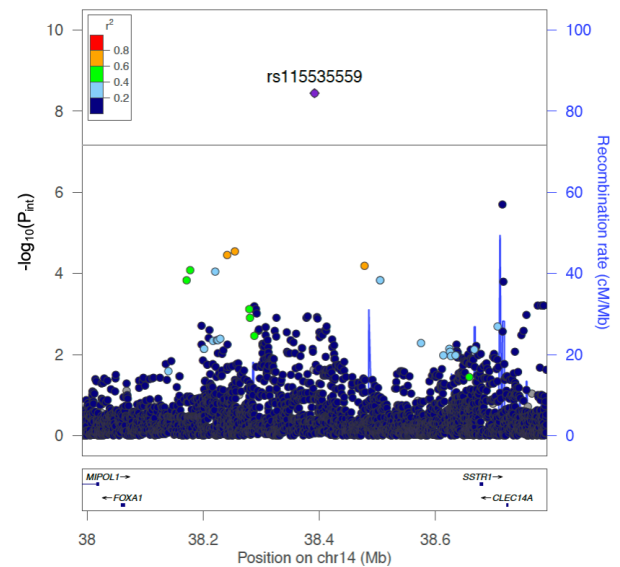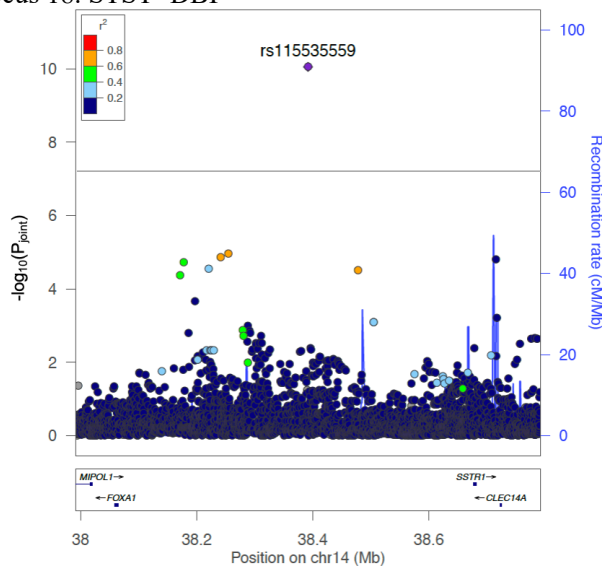## Locus 15. STST- DBP
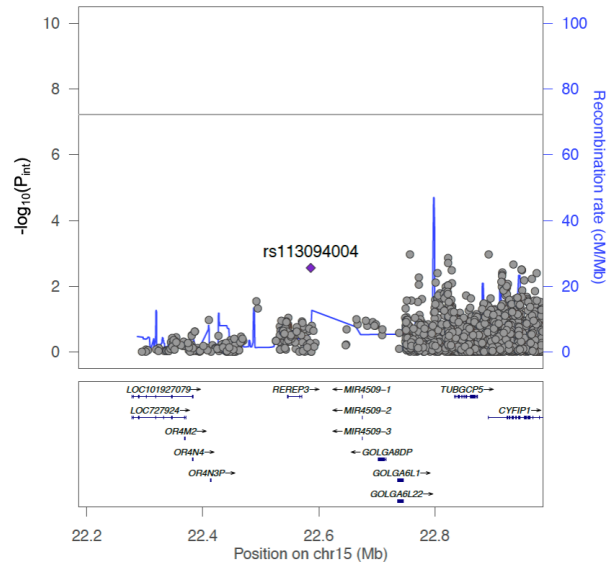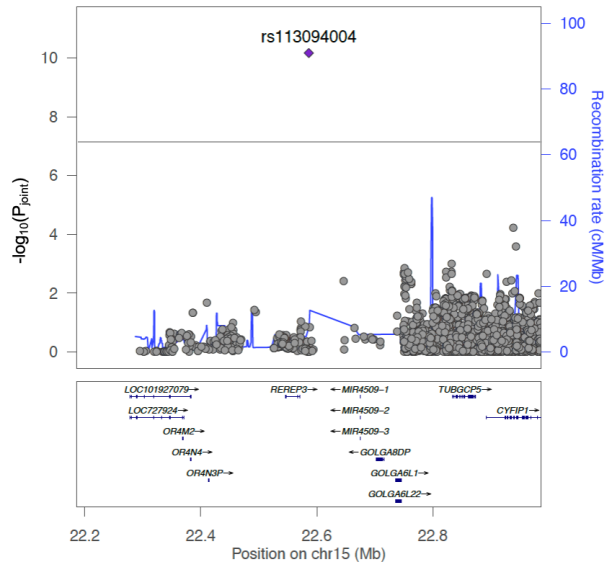
Locus 16. STST- MAP
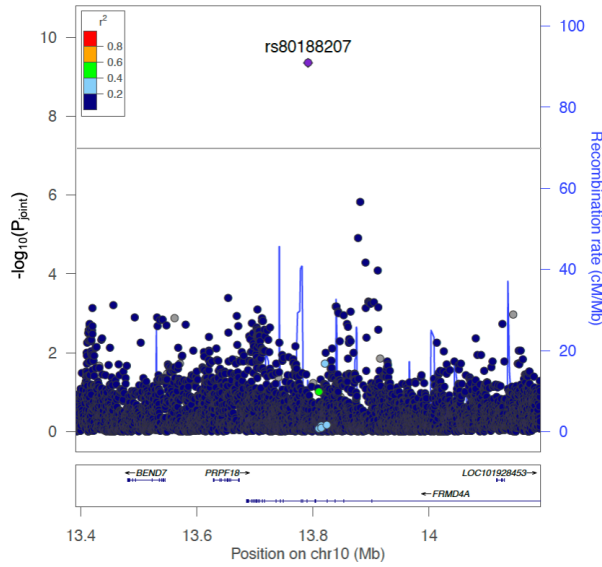
Locus 17. STST- PP

Locus 18. STST- DBP

Locus 19. STST- SBP

Locus 20. STST- PP