## **Description of Additional Supplementary Files**

Supplementary Data 1: Target gene scoring

Supplementary Data 2: Variants within ATAC-seq or EMERGE peaks

Supplementary Data 3: Potential variant enhancers and their target genes

Supplementary Data 4: Potential variant enhancers disturbing TFBM

Supplementary Data 5: lead SNPs

Supplementary Data 6: TADs

Supplementary Data 7: Variant regions

Supplementary Data 8: SNPs p 0.0001

Supplementary Data 9: Subthreshold SNPs in variant regions

Supplementary Data 10: Promoter-capture Hi\_C

Supplementary Data 11: RNA seq

Supplementary Data 12: Normalized RNA\_seq and PCHiC data

Supplementary Data 13: ATAC\_seq peaks in variant regions

Supplementary Data 14: EMERGE peaks in variant regions

Supplementary Data 15: ATAC-seq left atrium adult genome-wide peaks