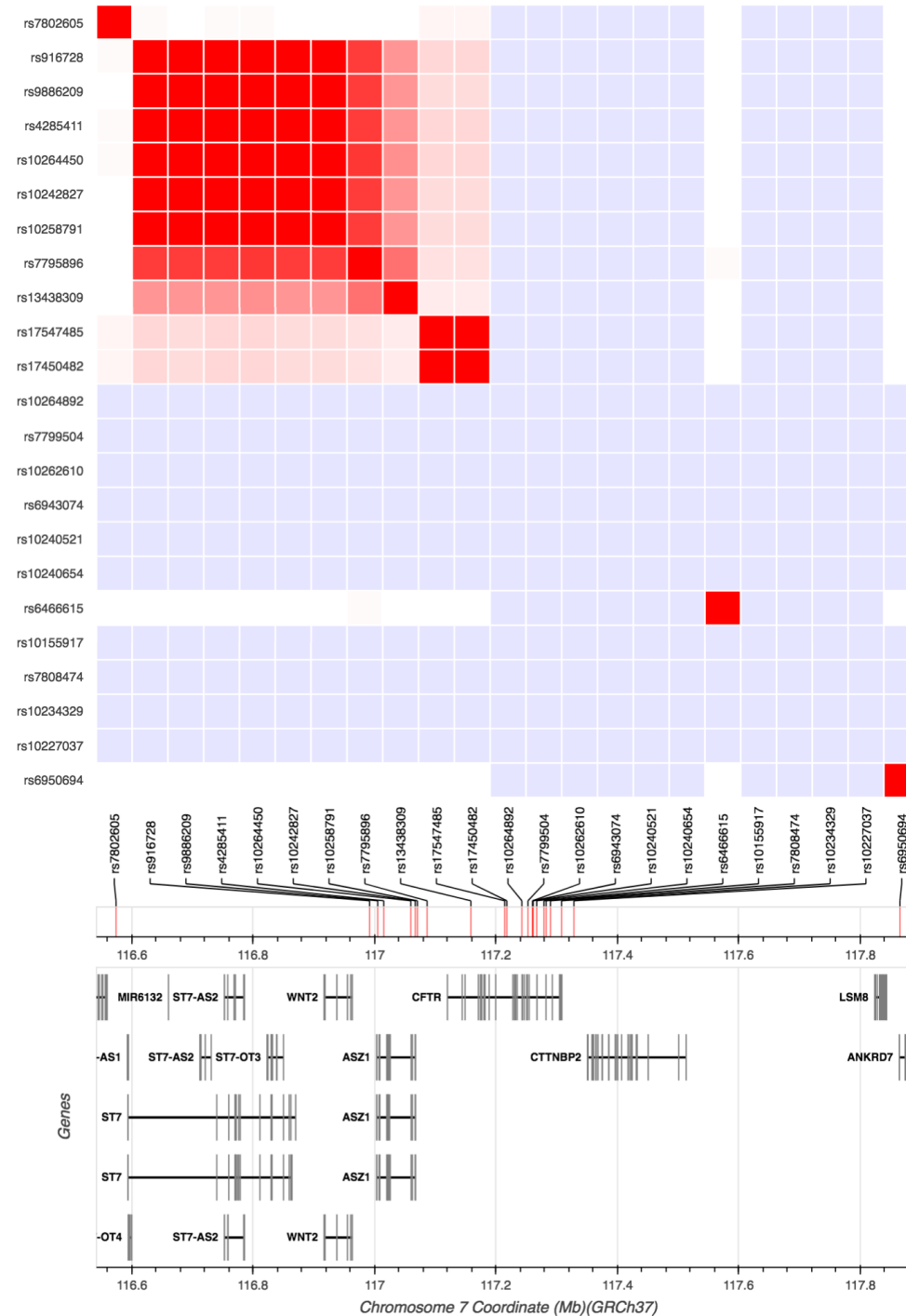
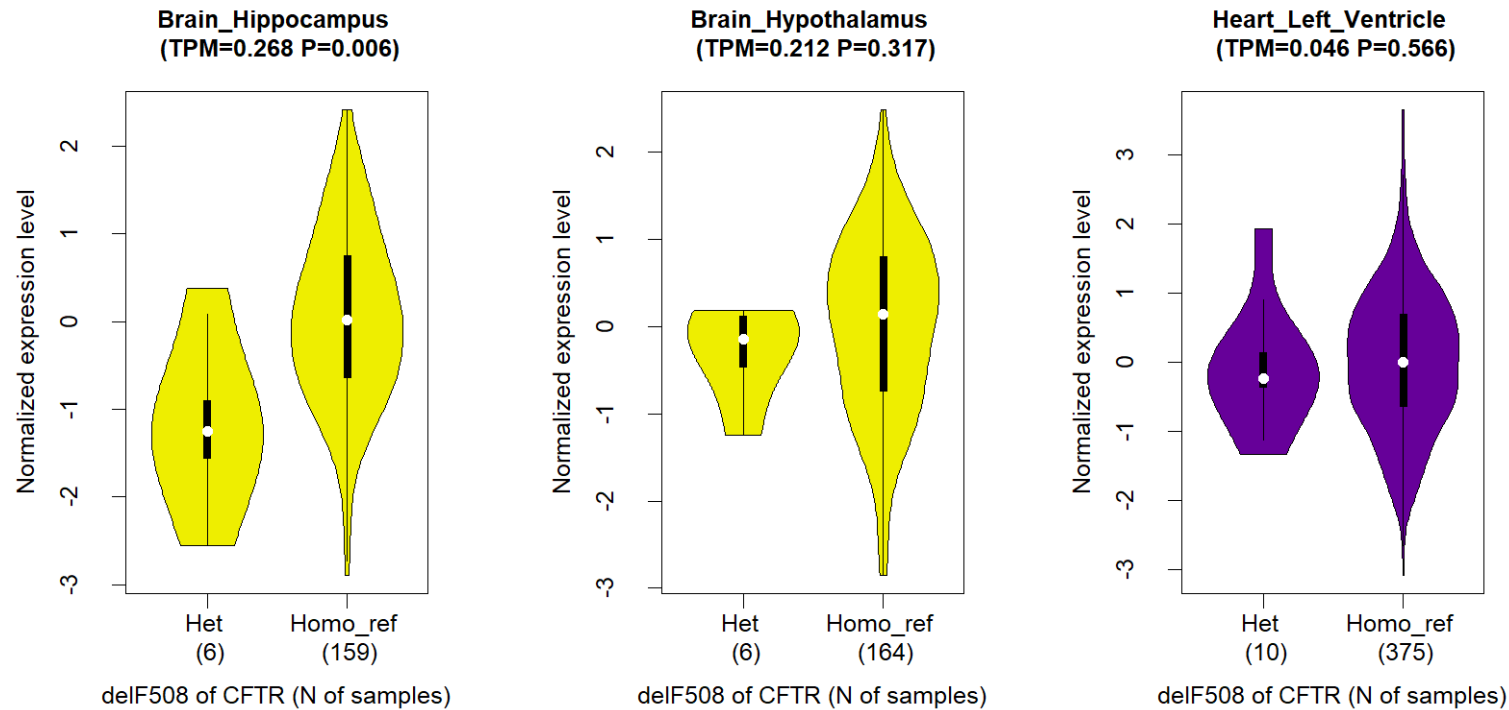
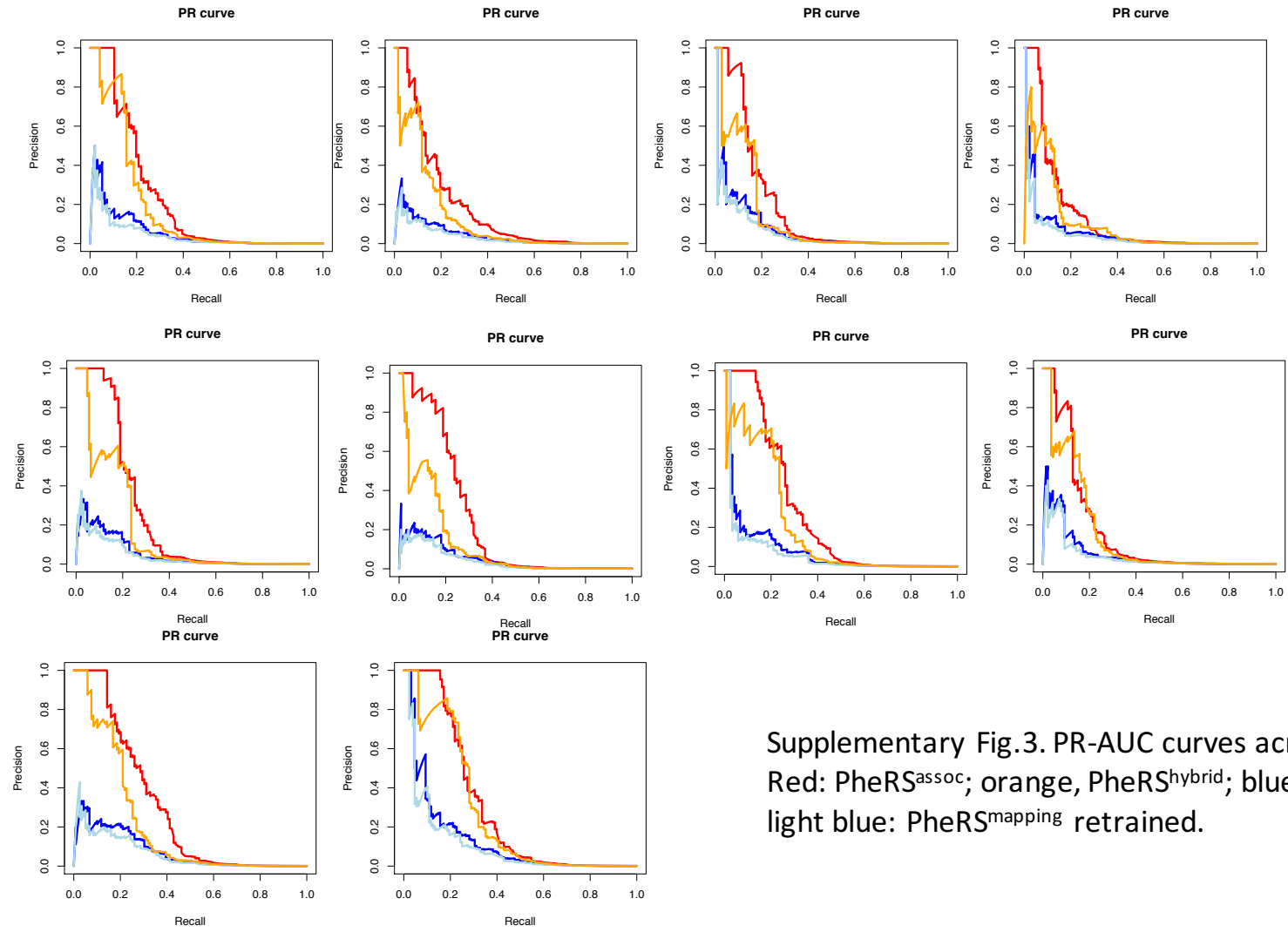


Supplementary Fig. S1. Variants in the expression predictor of *CFTR* in brain hypothalamus (GTEx 2015-11-18).





Supplementary Fig. S2. Measured expression of *CFTR* stratified by the dosage of DF508 based on GTEx (V8) data. Tissues listed match the tissues in we discovered the EHRs phenotypes consistent with clinical description of cystic fibrosis. Gene expressions (in unit ‘transcripts per million’ or TPM), were normalized. Also shown are p-values from Wilcoxon rank sum test of the expression by the dosage of DF508.



Supplementary Fig.3. PR-AUC curves across all 10 folds. Red: PheRS^{assoc}; orange, PheRS^{hybrid}; blue: PheRS^{mapping}; light blue: PheRS^{mapping} retrained.