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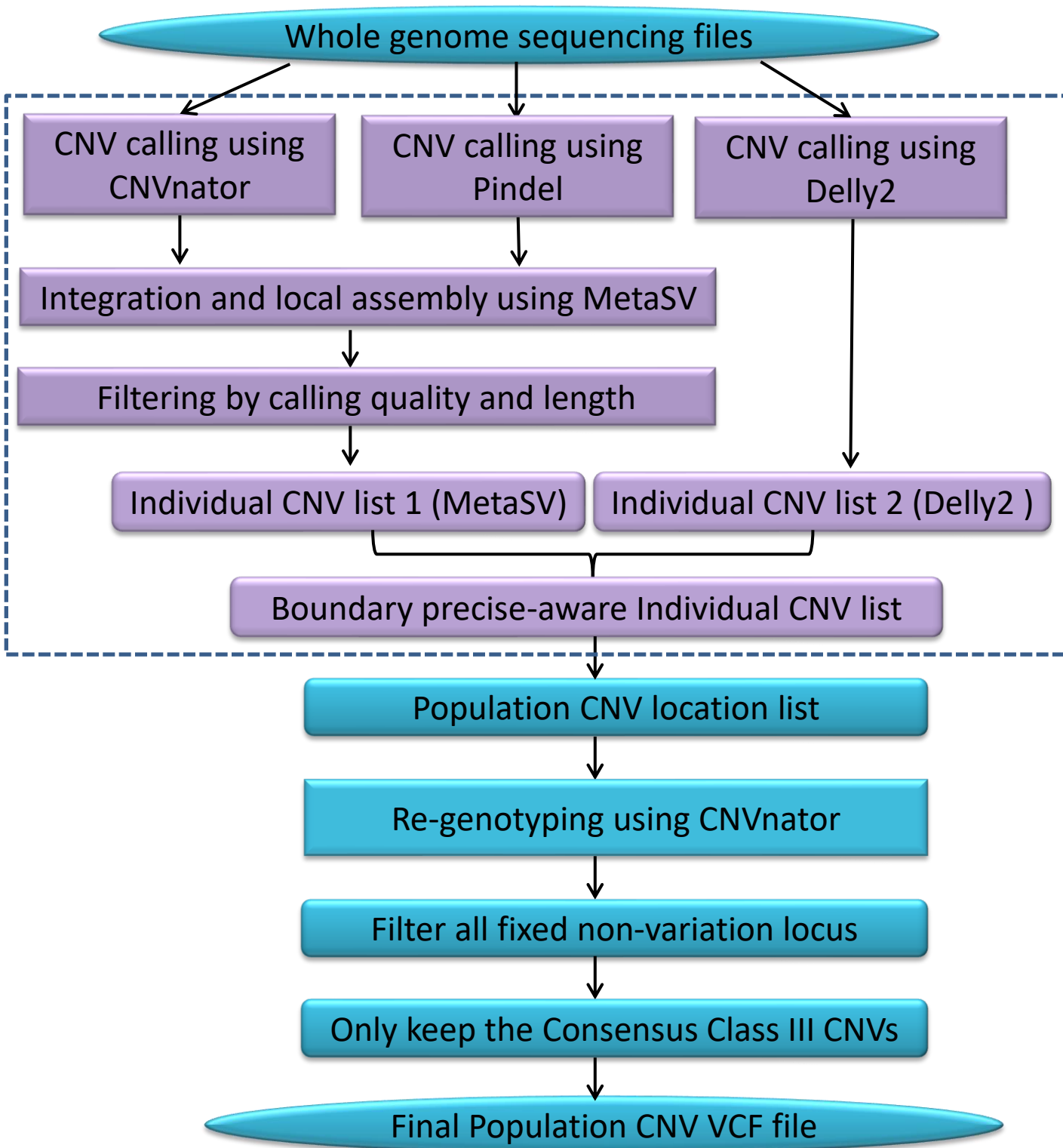
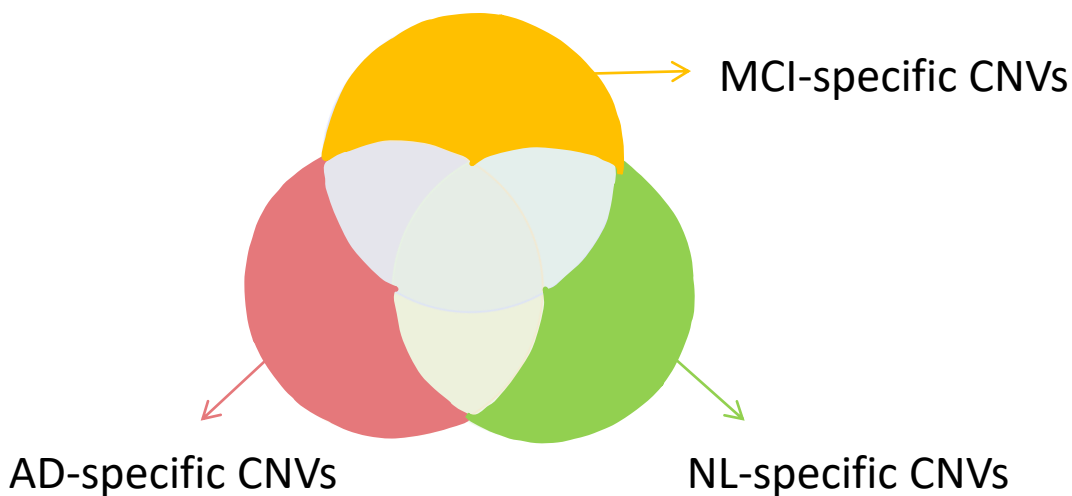
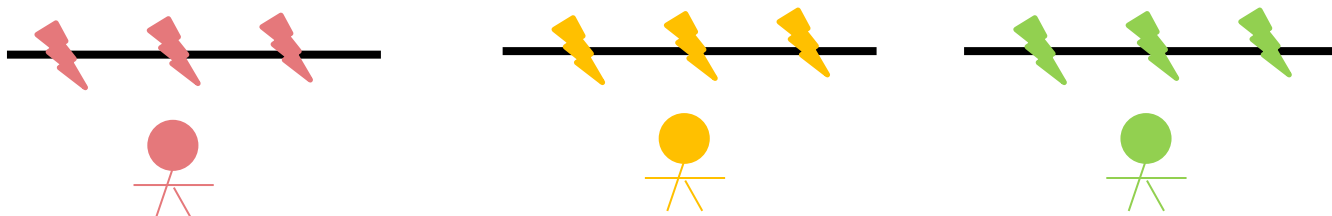


Figure S1 CNV calling pipeline. Dash box contains CNV calling steps at individual level.



Null hypothesis:

the number of AD-specific CNVs per AD case \approx the number of MCI-specific CNVs per MCI case
 \approx the number of NL-specific CNVs per NL case



Our observation:

the number of AD-specific CNVs per AD case \gg the number of MCI-specific CNVs per MCI case
 \gg the number of NL-specific CNVs per NL case

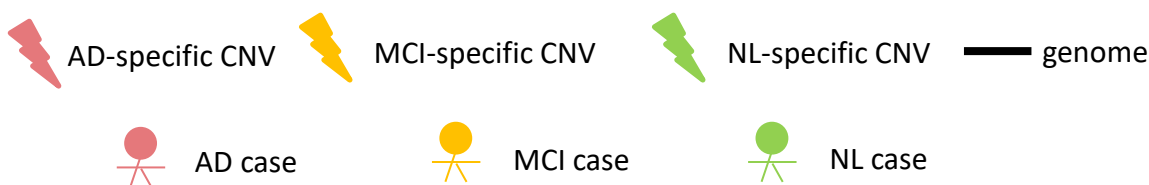
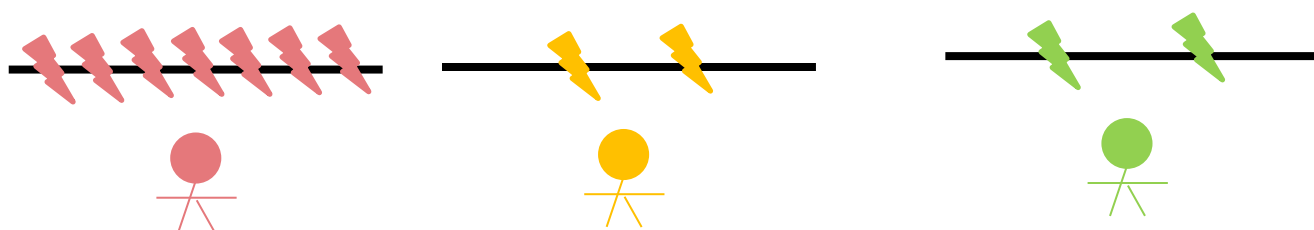
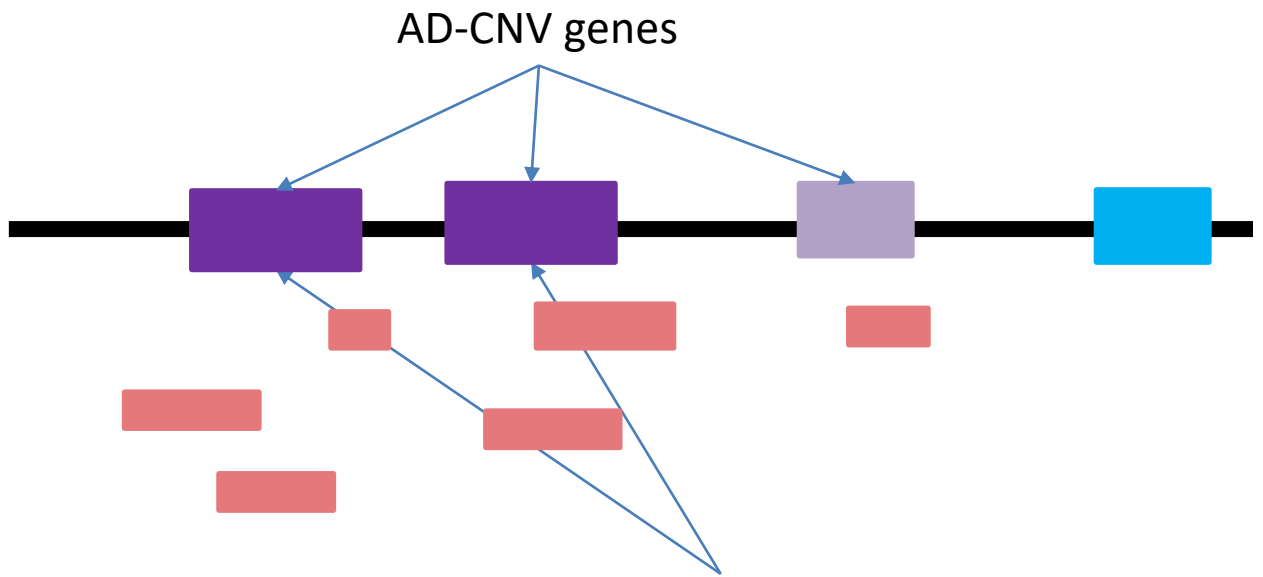


Figure S2 Illustration of the concept which compares the mean number of AD-specific CNVs per AD case with the mean number of MCI-specific CNVs per MCI case and the mean number of NL-specific CNVs per NL case



Gene overlapping with multiple AD-specific CNVs

- AD-specific CNV
- AD-CNV gene which overlaps with multiple AD-specific CNVs
- AD-CNV gene which overlaps with single AD-specific CNV
- Gene not overlapping with any AD-specific CNVs
- chromosome

Figure S3 Illustration of the concept of AD-CNV genes and genes overlapping with multiple AD-specific CNVs

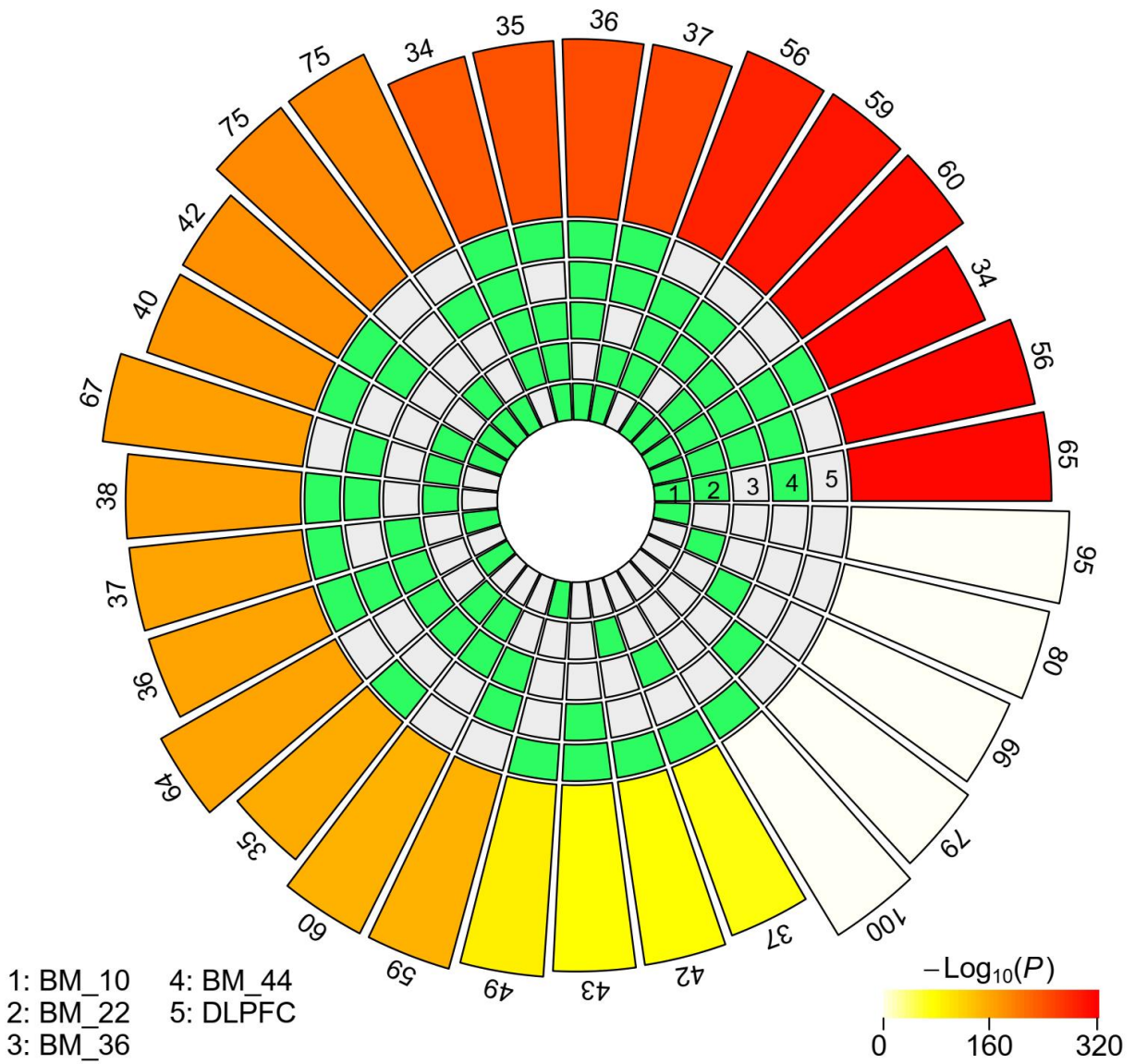
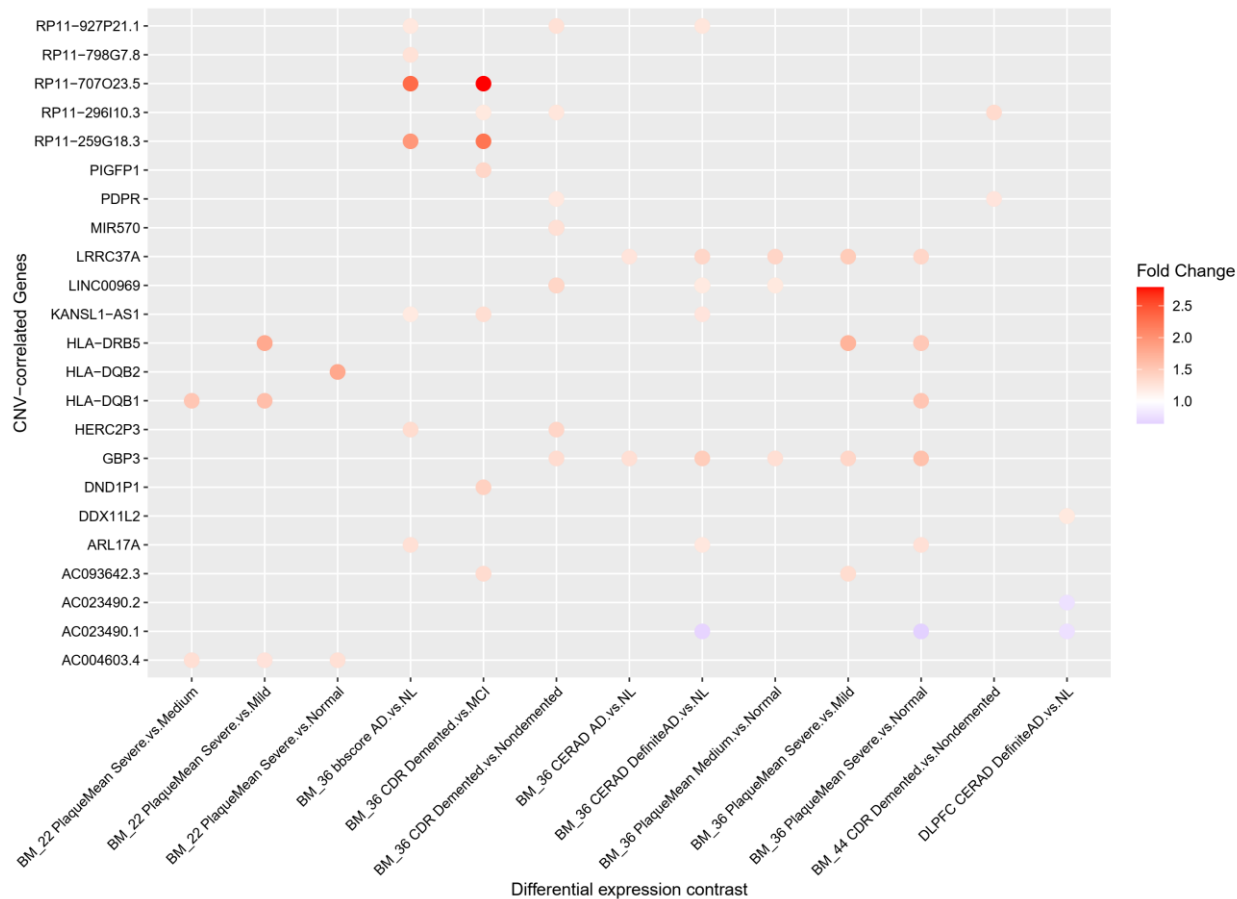


Figure S4 Super exact test on significantly CNV-correlated RNAs of five different brain regions from the MSBB and ROSMAP cohorts

A



B

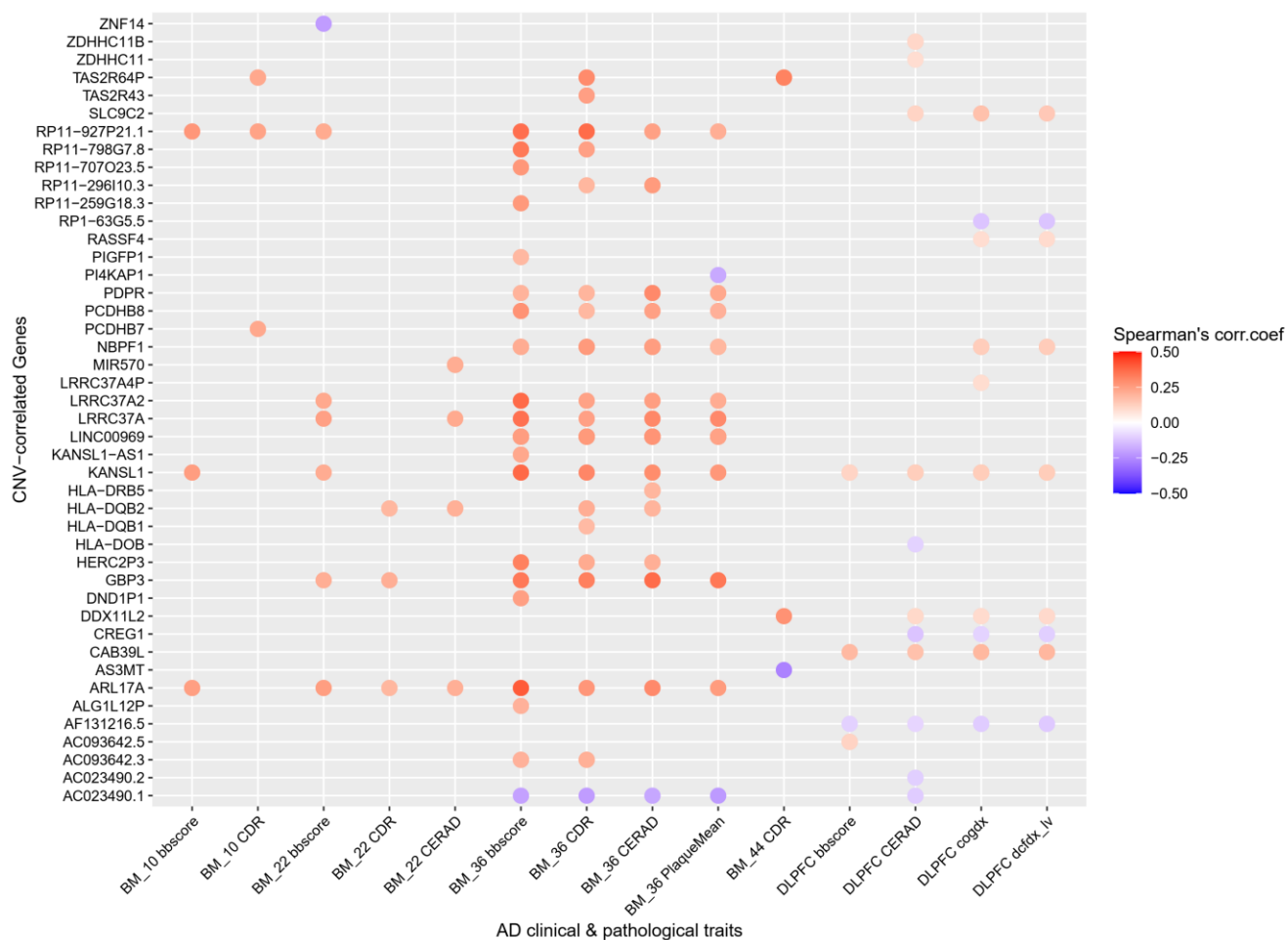


Figure S5 DEG and Trait-correlation signal of CNV-correlated genes in five brain regions. A) DEG signal of CNV-correlated genes; B) AD trait-correlation signal of CNV-correlated genes

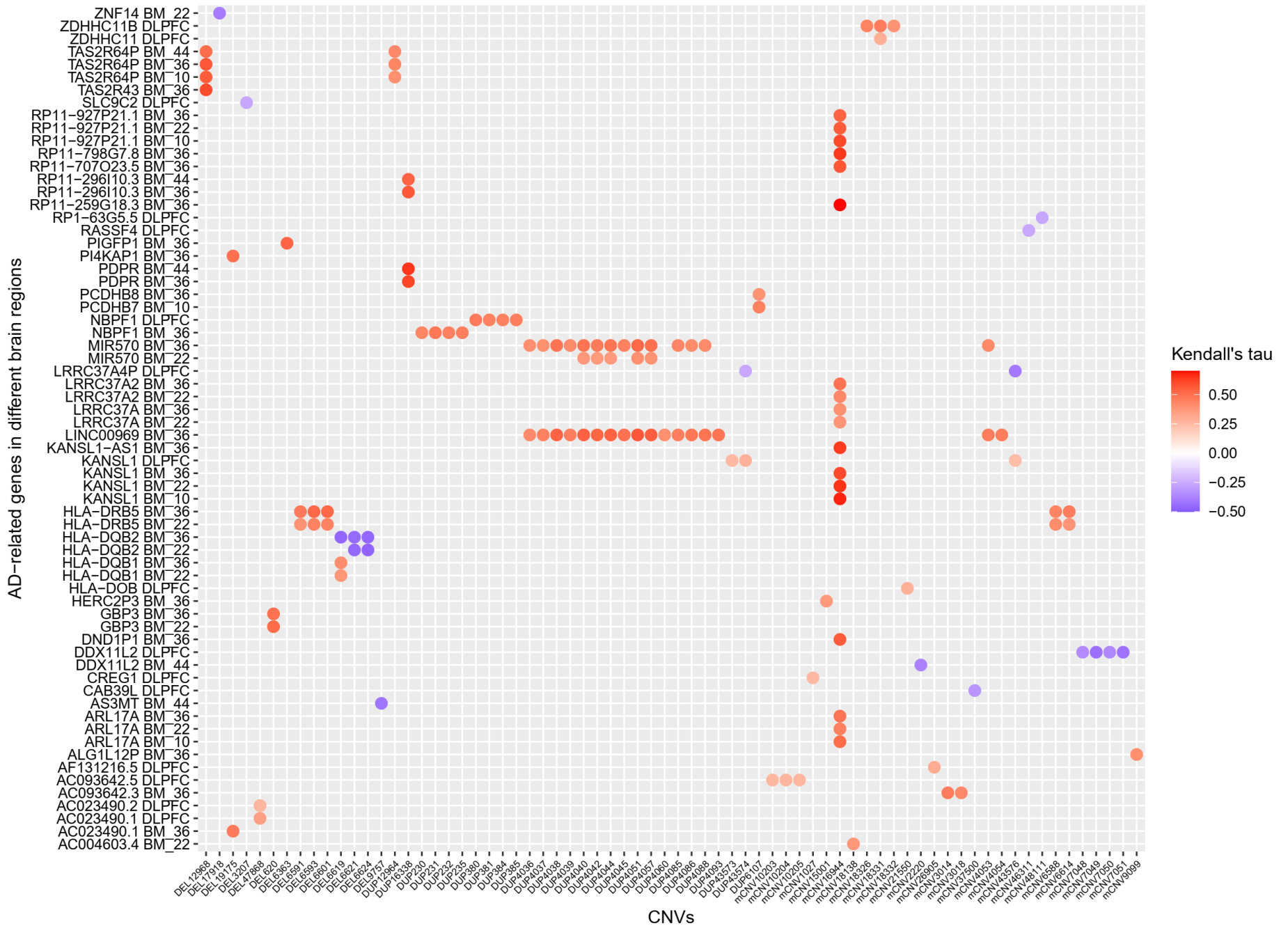


Figure S6 Kendall's tau-b correlation coefficient between CNVs and AD-related genes in five brain regions