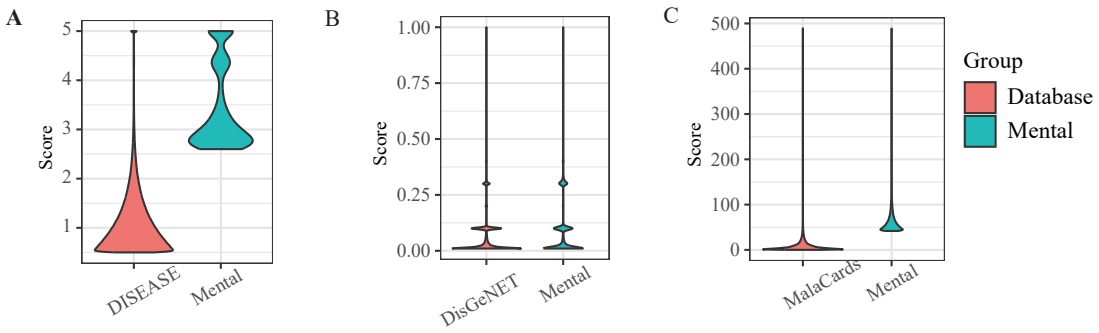


Fig. S1. Summary of the disease database. Violin plot of the score distributions of the raw gene–disease records and subset mental data from the A: Disease database, B: DisGeNET database, and C: MalaCards.

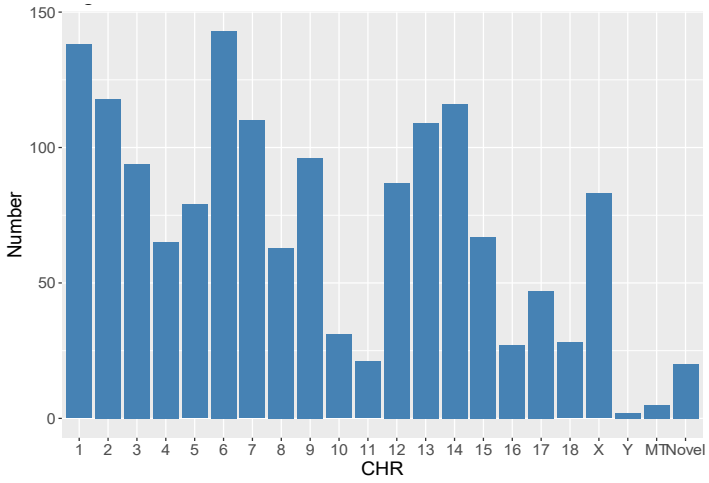


Fig. S2. Distribution of porcine mental health candidate genes across chromosomes.

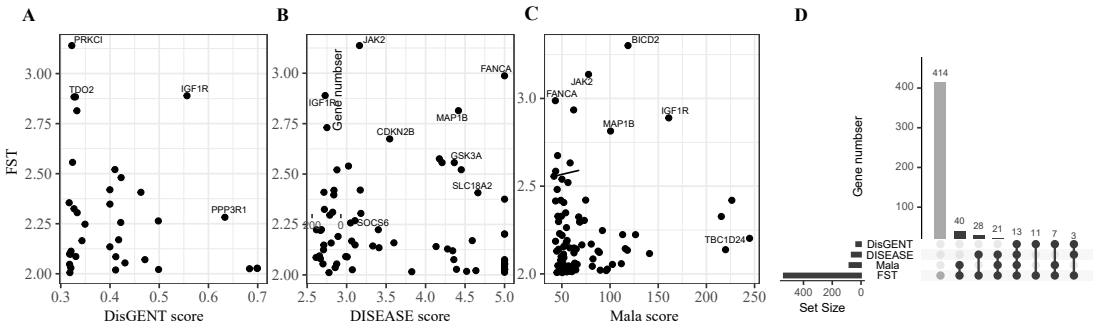


Fig. S3. Candidate genes for pig mental health detected by the *Fst* test. Scatter plot of candidate PMH genes with *Fst* scores and gene–disease scores from the A: DisGent, B: DISEASE, and C: MalaCards databases. D. The UpSet plot of candidate PMH genes across three disease databases and selected genes detected by the *Fst* approach.

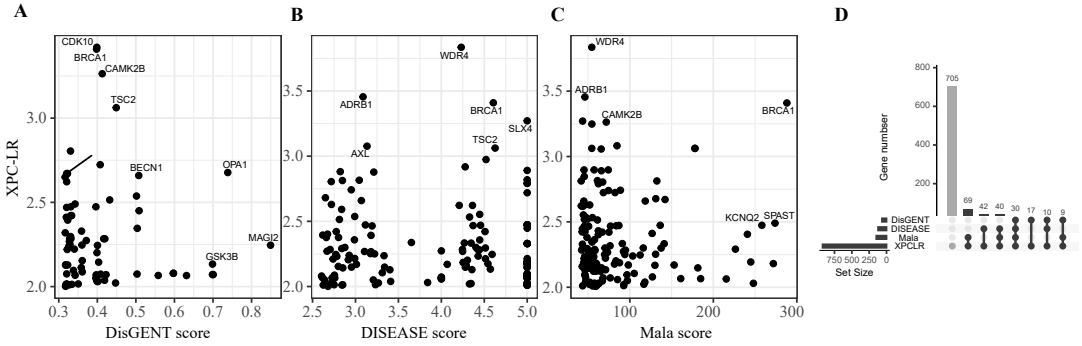


Fig. S4. Pig mental health candidate genes detected by the XPCLR method. Scatter plot of candidate PMH genes with XPCLR scores and gene–disease scores from the A: DisGent, B: DISEASE, and C: MalaCards databases. D. UpSet plot of candidate PMH genes across three disease databases and selected genes detected by the XPCLR approach.

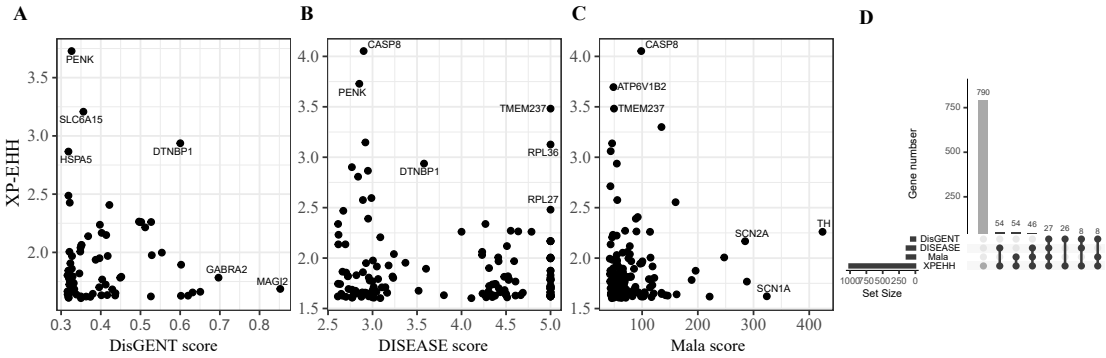


Fig. S5. Pig mental health candidate genes detected by the XPEHH method. Scatter plot of candidate PMH genes with XPEHH values and gene–disease scores from the A: DisGent, B: DISEASE, and C: MalaCards databases. D. UpSet plot of candidate PMH genes across three disease databases and selected genes detected by the XPEHH approach.

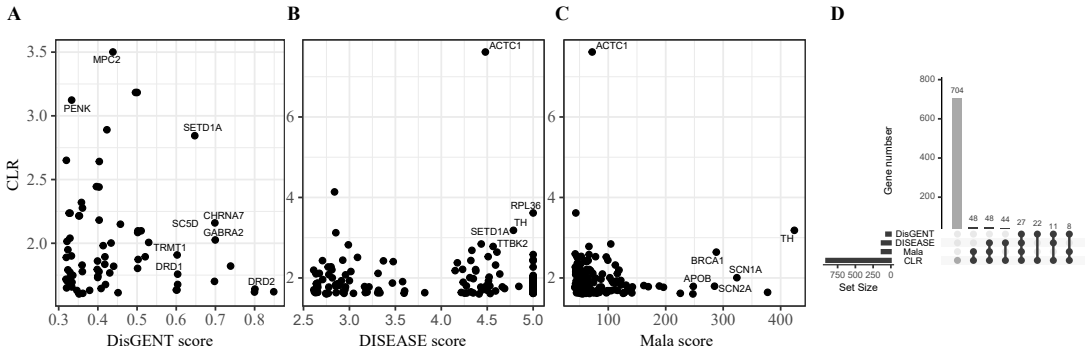


Fig. S6. Pig mental health candidate genes detected by the CLR test. Scatter plot of candidate PMH genes with CLRs and gene–disease scores from the A: DisGent, B: DISEASE, and C: MalaCards databases. D. UpSet plot of candidate PMH genes across three disease databases and selected genes detected by the CLR approach.

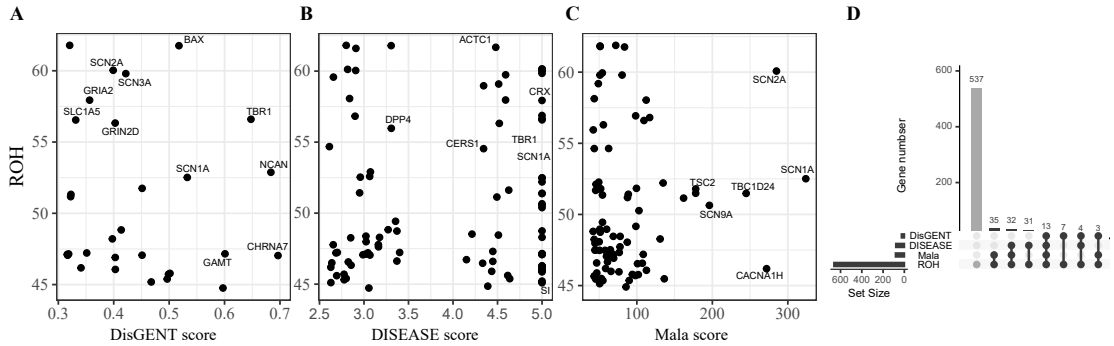
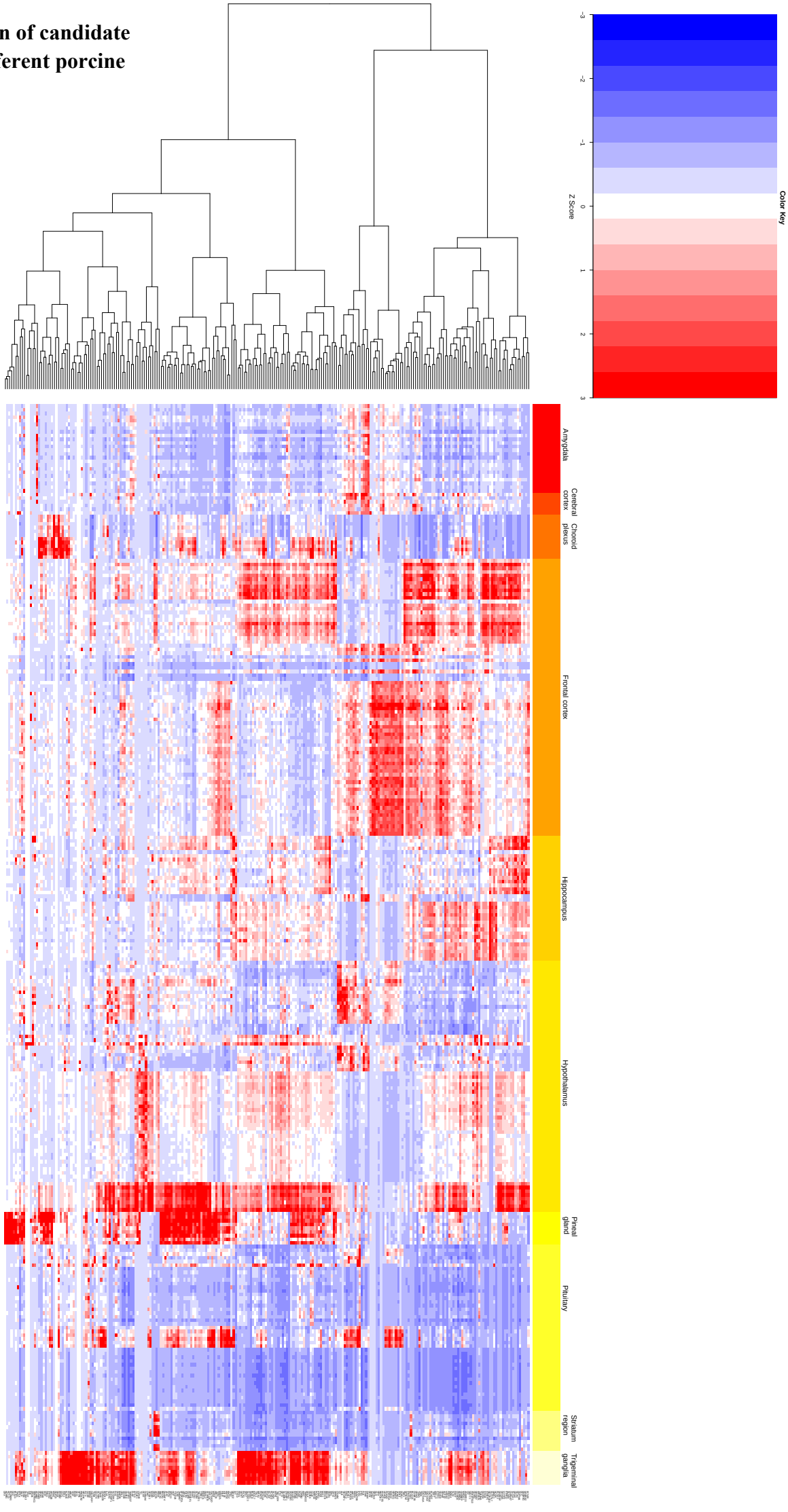


Fig. S7. Pig mental health candidate genes detected by the ROH method. Scatter plot of candidate PMH genes with *Fst* scores and gene–disease scores from the A: DisGent, B: DISEASE, and C: MalaCards databases. D. The UpSet plot of candidate PMH genes across three disease databases and selected genes detected by the ROH approach.

Fig. S8. Expression of candidate PMH genes in different porcine brain tissues.



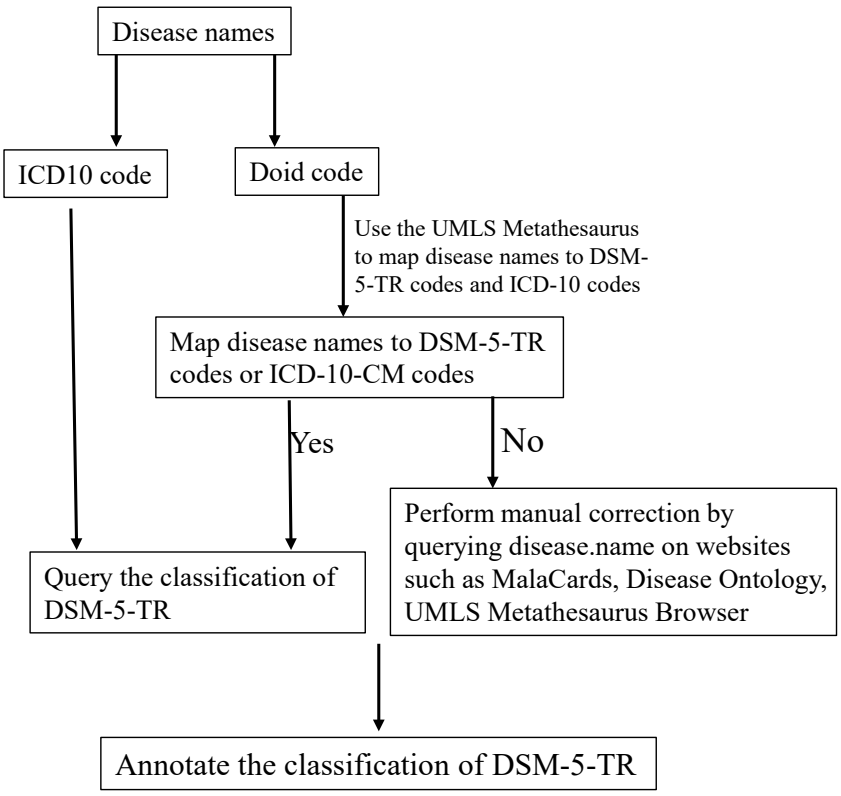


Fig. S9. Schematic diagram of the annotation and classification of gene–disease in Disease database.

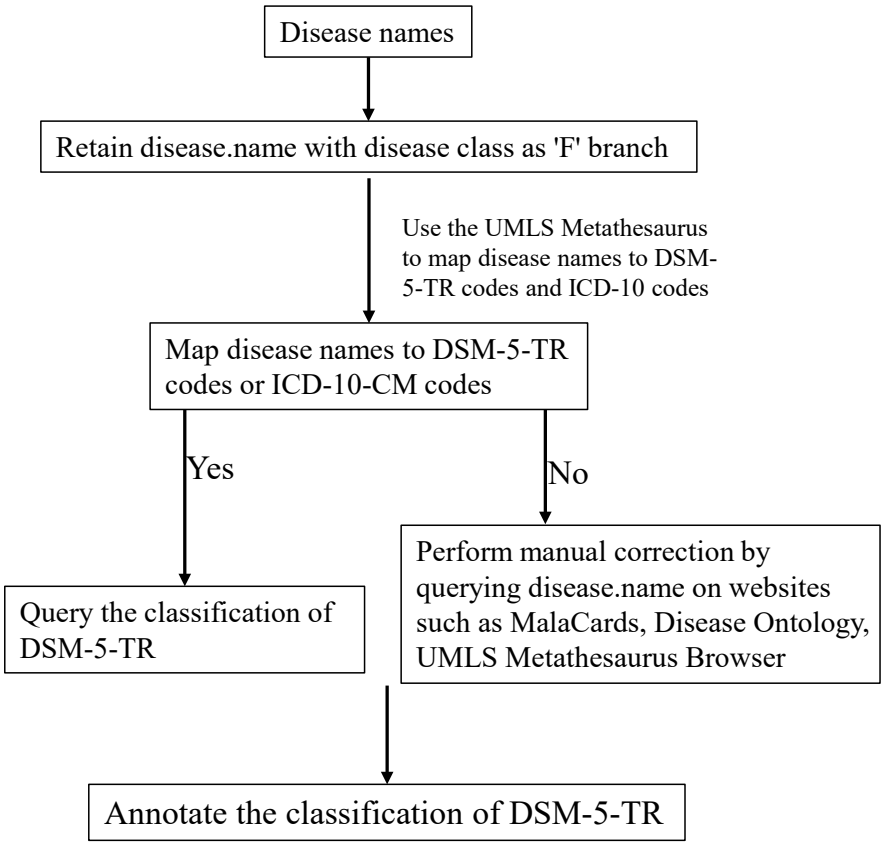


Fig. S10. Schematic diagram of the annotation and classification of gene–disease in DisGeNET database.

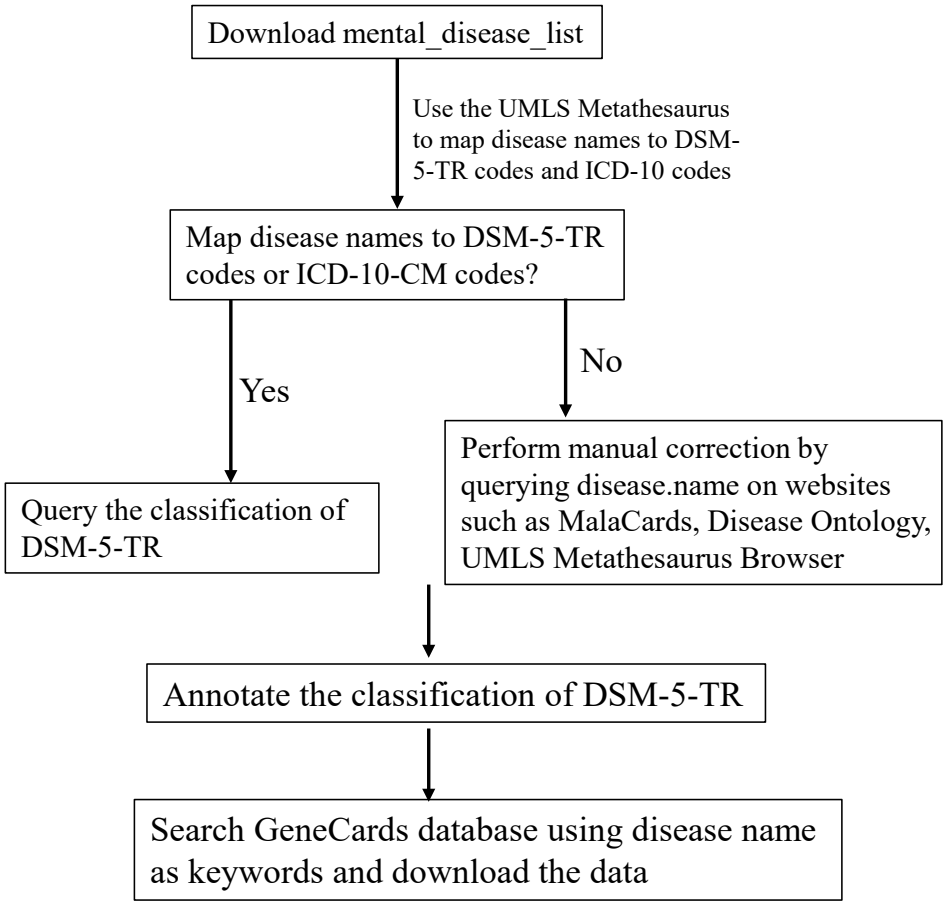


Fig. S11. Schematic diagram of the annotation and classification of gene–disease inin the MalaCards and GeneCards databases.