

**Figure S3** The model of OPLS-DA. (A) S1 vs S2; (B) S2 vs S3; (C) S3 vs S4; (D) S4 vs S5. In the abscissa, P1 is the predicted principal component, O1 is the orthogonal principal component, and the ordinate is the corresponding R2X, R2Y and Q2. According to the OPLS-DA model to analyze the metabolome data, draw the score map of each group, and further show the difference between each group. The prediction parameters of the evaluation model are R2X, R2Y and Q2, where R2X and R2Y represent the interpretation rate of the built model to the X and Y matrices, and Q2 represents the predictive ability of the model. The closer these three indicators are to 1, the more stable the model Reliable, when Q2>0.5 can be considered as an effective model, Q2>0.9 is an excellent model.