

Biomarker Discovery

Study Design

- Case-control studies
- Adequate sample size
- Biological replicates

Statistical Analysis

- Univariate tests (t-test, ANOVA)
- Multivariate (PCA, PLS-DA)
- Multiple testing correction

Validation Cohorts

- Independent sample sets
- Different populations
- Avoid overfitting

ROC Analysis

- Receiver operating characteristic
- AUC (area under curve)
- Diagnostic performance evaluation