

Supplementary Figure 2

Pseudo-code for the permutation test

permutation loop (i in 1:1000)

Generate permuted $Y \rightarrow Y_{perm}$

Feature selection on $(X_{n \times p}, Y_{perm}) \rightarrow X_{n \times p_2}$ using F-test as in the CV loop

CV loop (LOO)

Selection of the $(X_{(n-1) \times p_2}, Y_{perm, n-1})$ training set

Estimated linear model (OLS, or PLS) on $(X_{(n-1) \times p_2}, Y_{perm, n-1}) \rightarrow \beta$

Predict the response of the test set using $\beta: \hat{Y}_{perm} = X_{1 \times p_2} \beta$

end CV loop

$R_{perm, i} = \text{cor}(Y, \hat{Y}_{perm})$

end permutation loop