



Supplementary Figure 1. Lasso regression model validation results. (A) Cross-validated accuracy across different regularization parameters (λ). The vertical red dashed line indicates the optimal λ value (0.097) that maximizes prediction accuracy. (B) Relationship between λ values and the number of non-zero coefficients retained in the model. The optimal model at $\lambda=0.097$ (vertical red dashed line) retains six predictors.