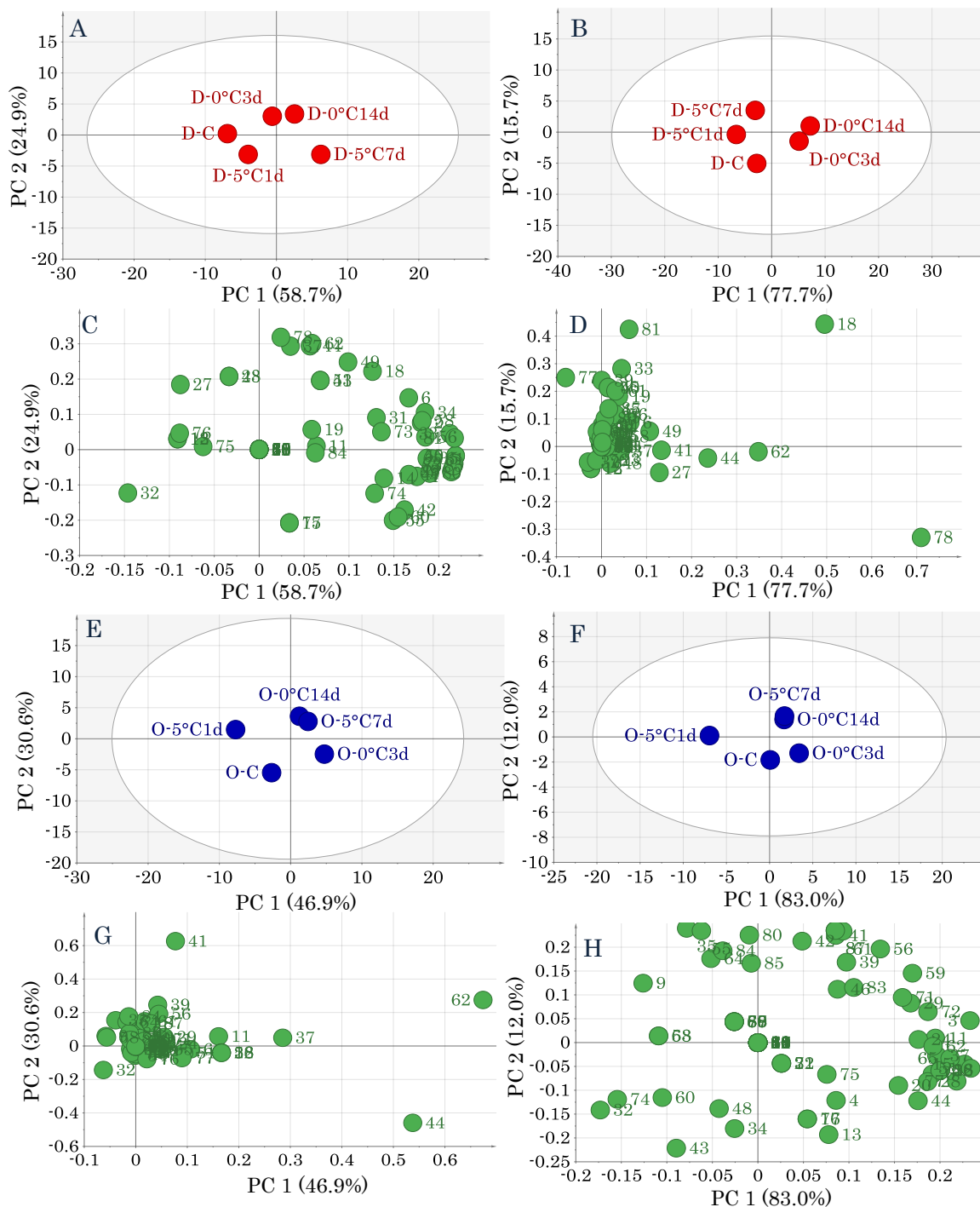
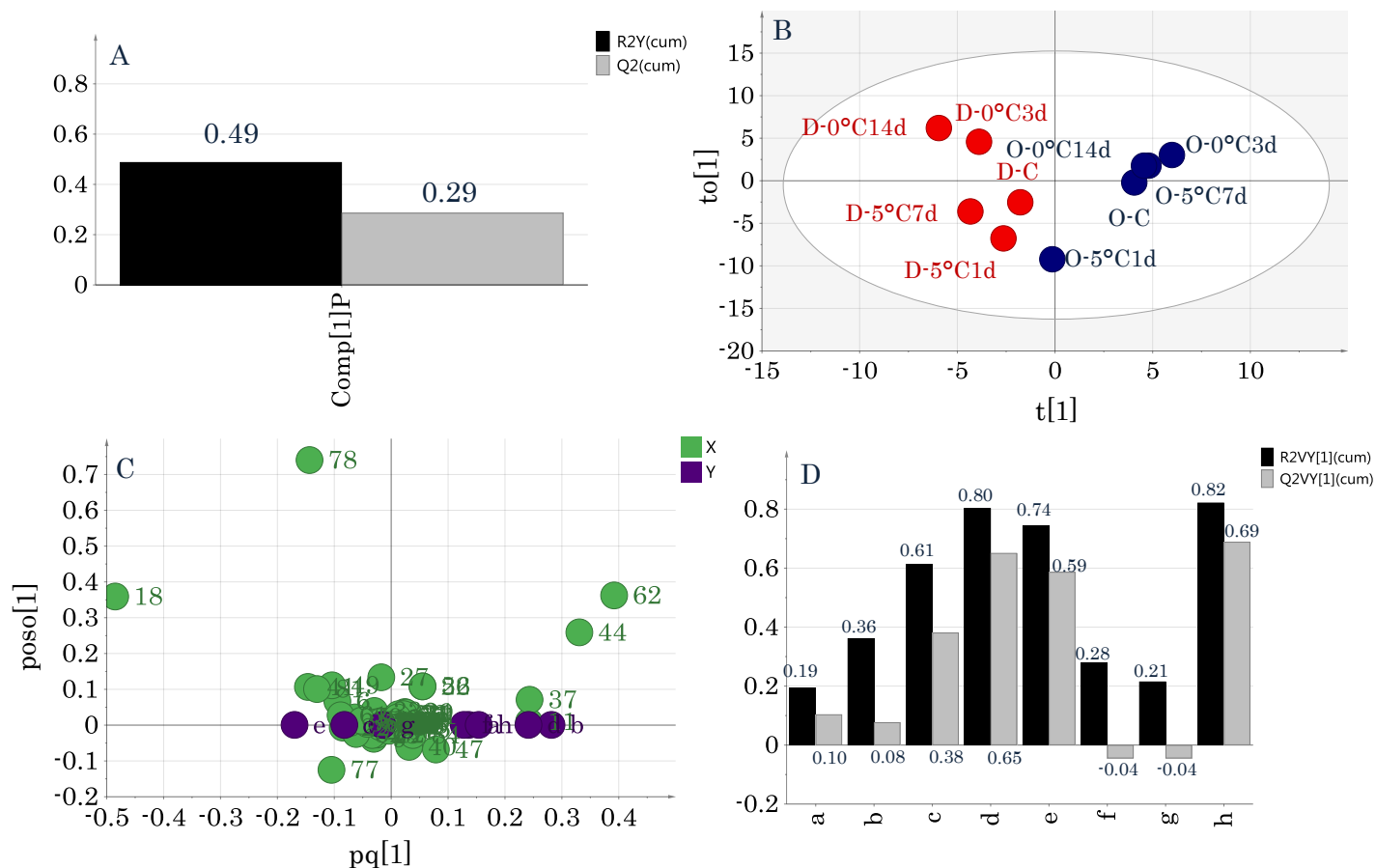


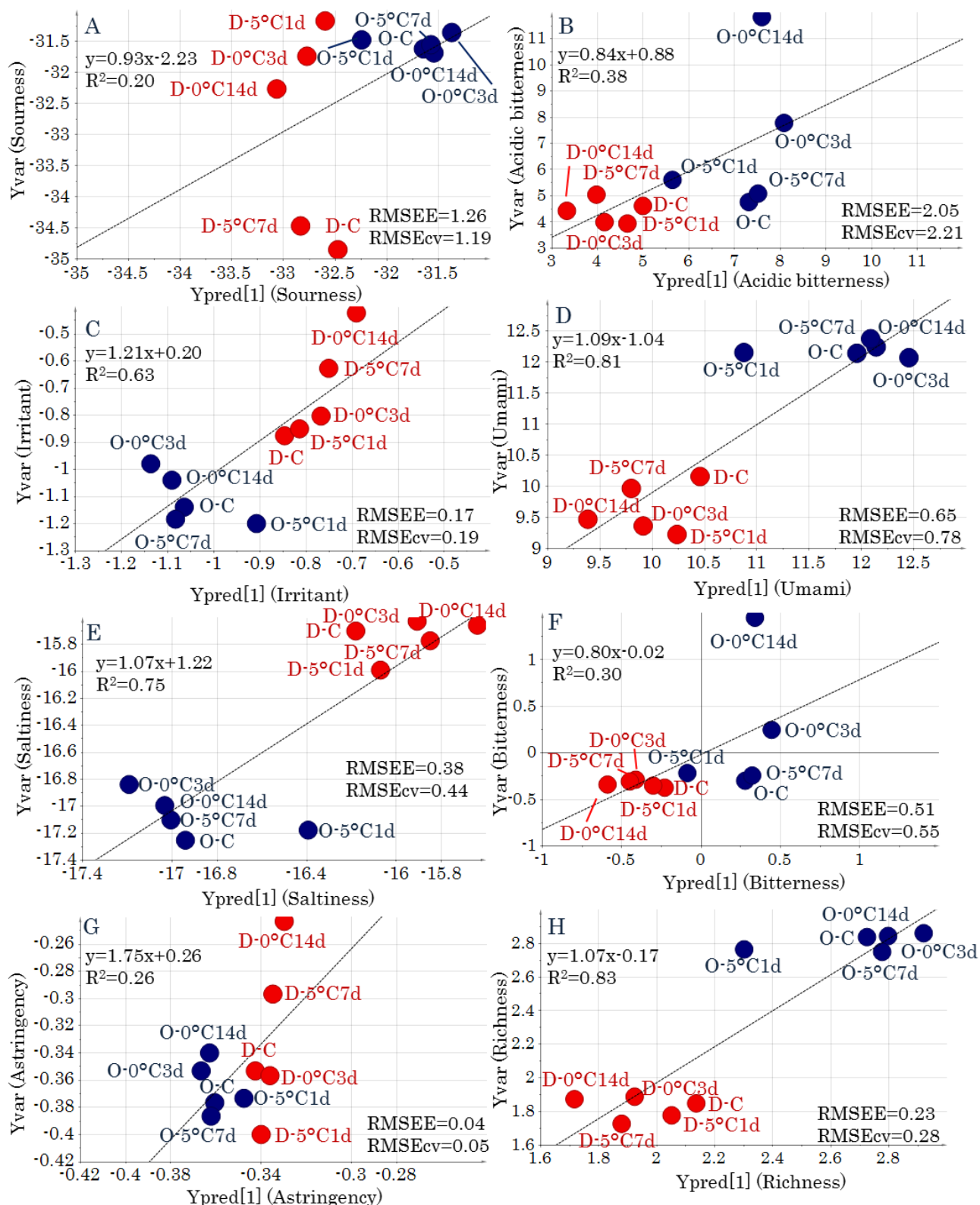
Supplementary Figure S1 Score plots (A, B) and loading plots (C, D) obtained by a principal components analysis (PCA)-X of the metabolic profiles. Data were pretreated with unit variance scaling (A, C) and Pareto scaling (B, D). Symbols in score plots (A, B) indicate sample IDs (Table S1). Numbers in loading plots (C, D) indicate x variable IDs (Table S1).



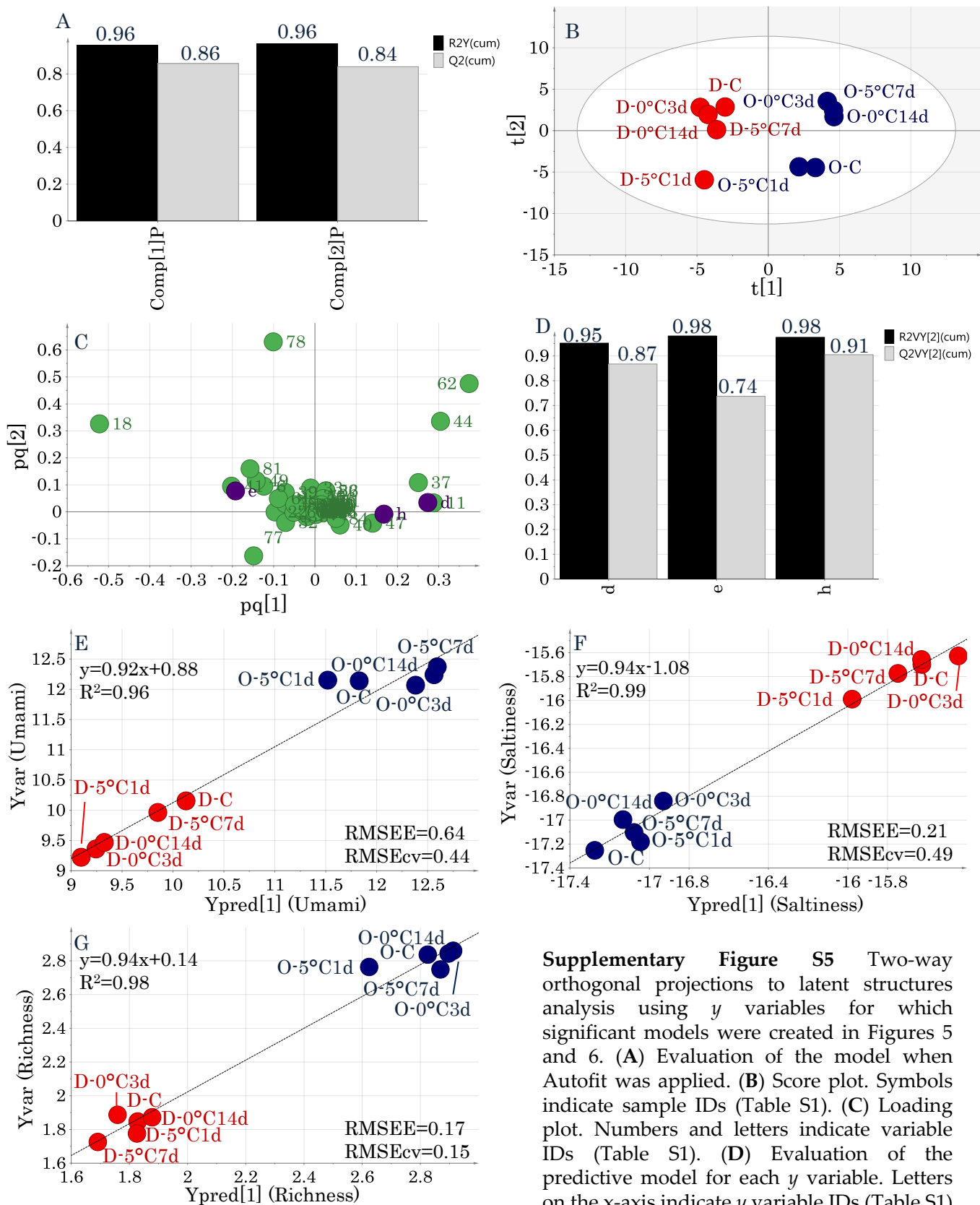
Supplementary Figure S2 Score plots (A, B, E, F) and loading plots (C, D, G, H) obtained by a principal components analysis (PCA)-X of metabolic profiles in dark (A-D) and ordinary (E-H) muscle. Data were pretreated with unit variance scaling (A, C, E, G) and pareto scaling (B, D, F, H). Symbols in score plots (A, B, E, F) indicate sample IDs (Table S1). Numbers in loading plots (C, D, G, H) indicate x variable IDs (Table S1).



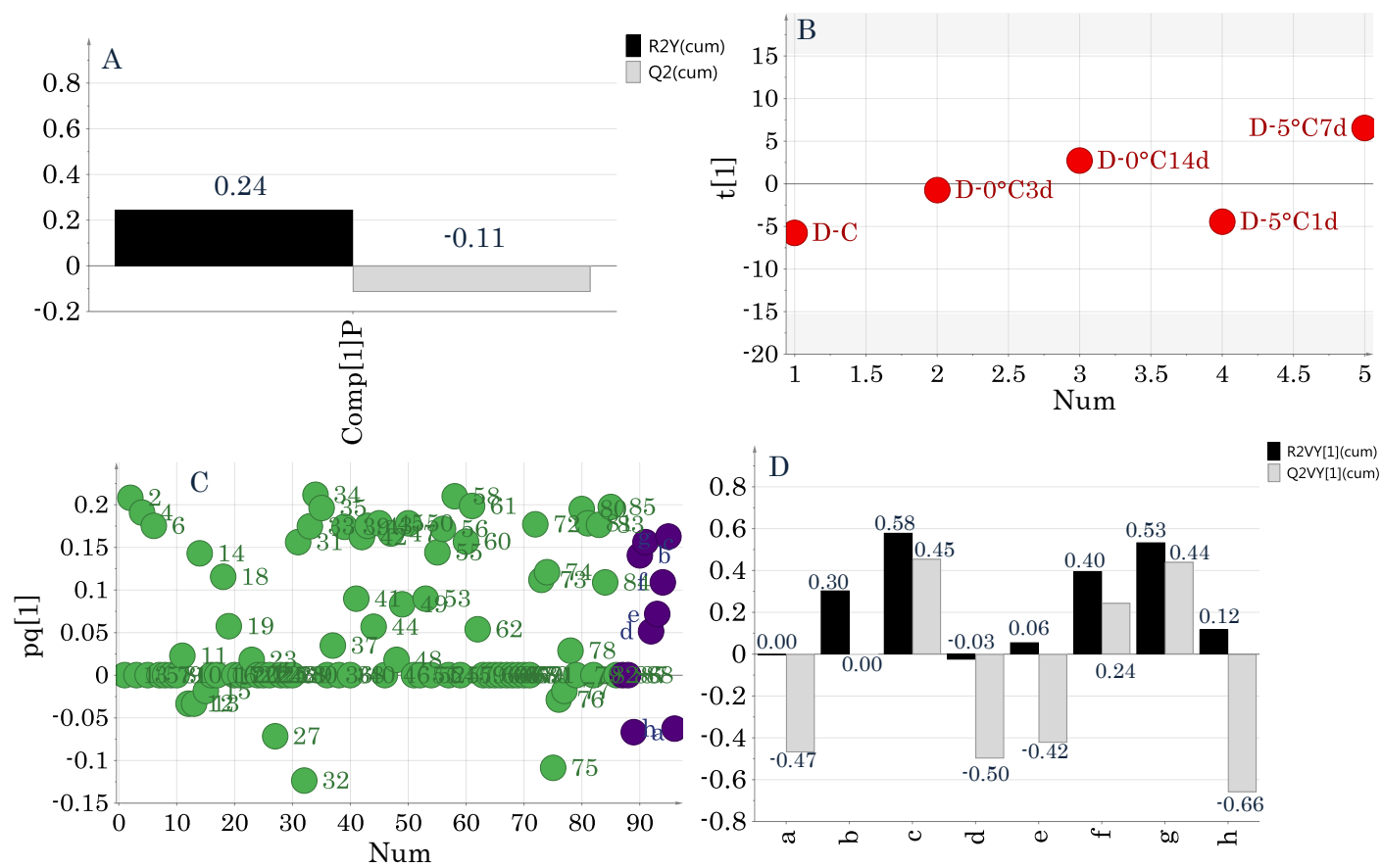
Supplementary Figure S3 Two-way orthogonal projections to latent structures analysis with pareto scaling as a pretreatment. **(A)** Evaluation of the model when Autofit was applied. Model dimensionality was 1+1+3. **(B)** Score plot. Symbols indicate sample IDs (Table S1). **(C)** Loading plot. Numbers and letters indicate variable IDs (Table S1). **(D)** Evaluation of the predictive model for each y variable. Letters on the x-axis indicate y variable IDs (Table S1).



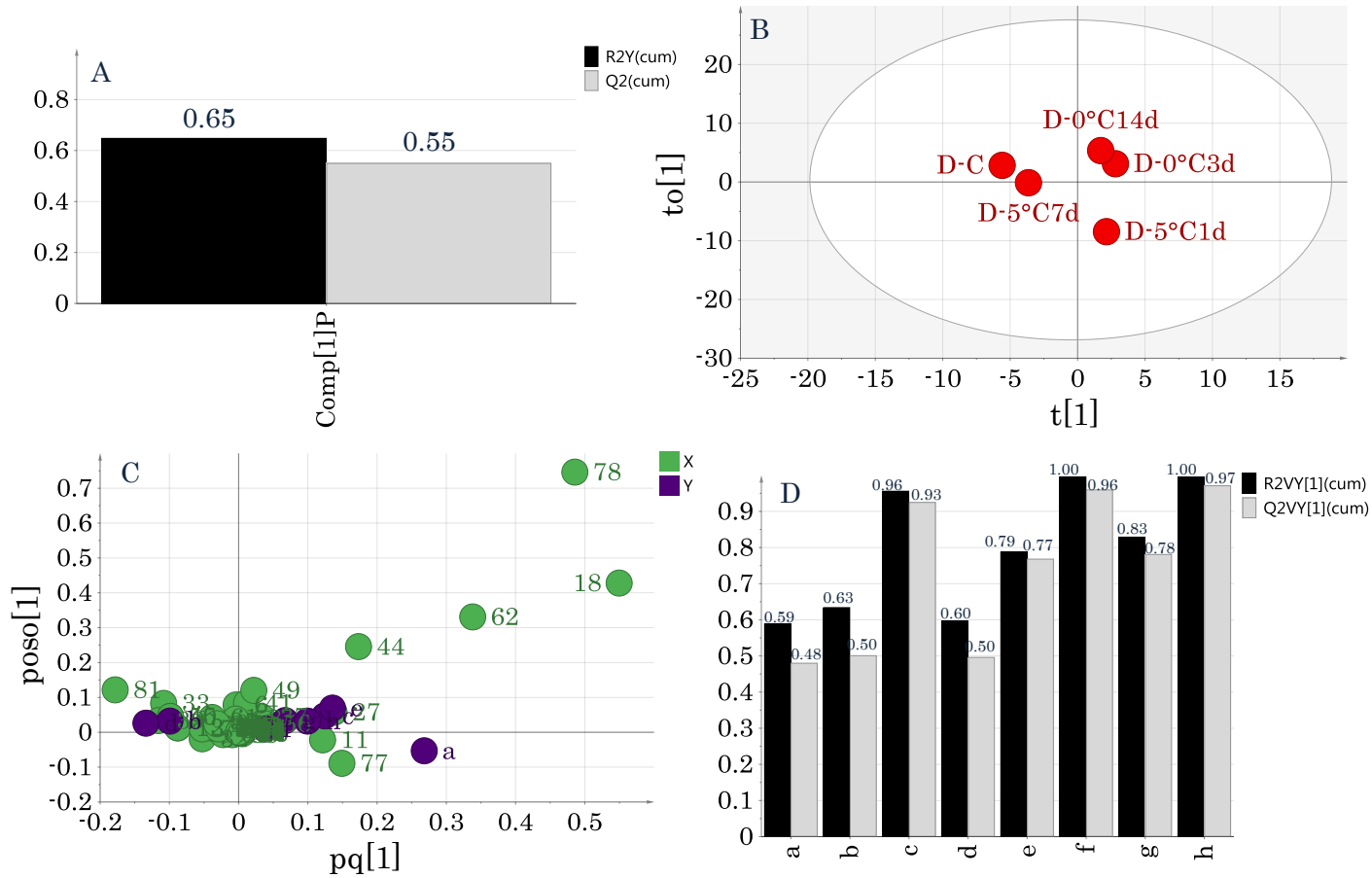
Supplementary Figure S4 Regression analyses of the predictive model for each y variable. (A) Sourness. (B) Acidic bitterness. (C) Irritant. (D) Umami. (E) Saltiness. (F) Bitterness. (G) Astringency. (H) Richness. Symbols indicate sample IDs (Table S1). *RMSEE*, root mean square errors of estimation; *RMSEcv*, root mean square errors of cross-validation.



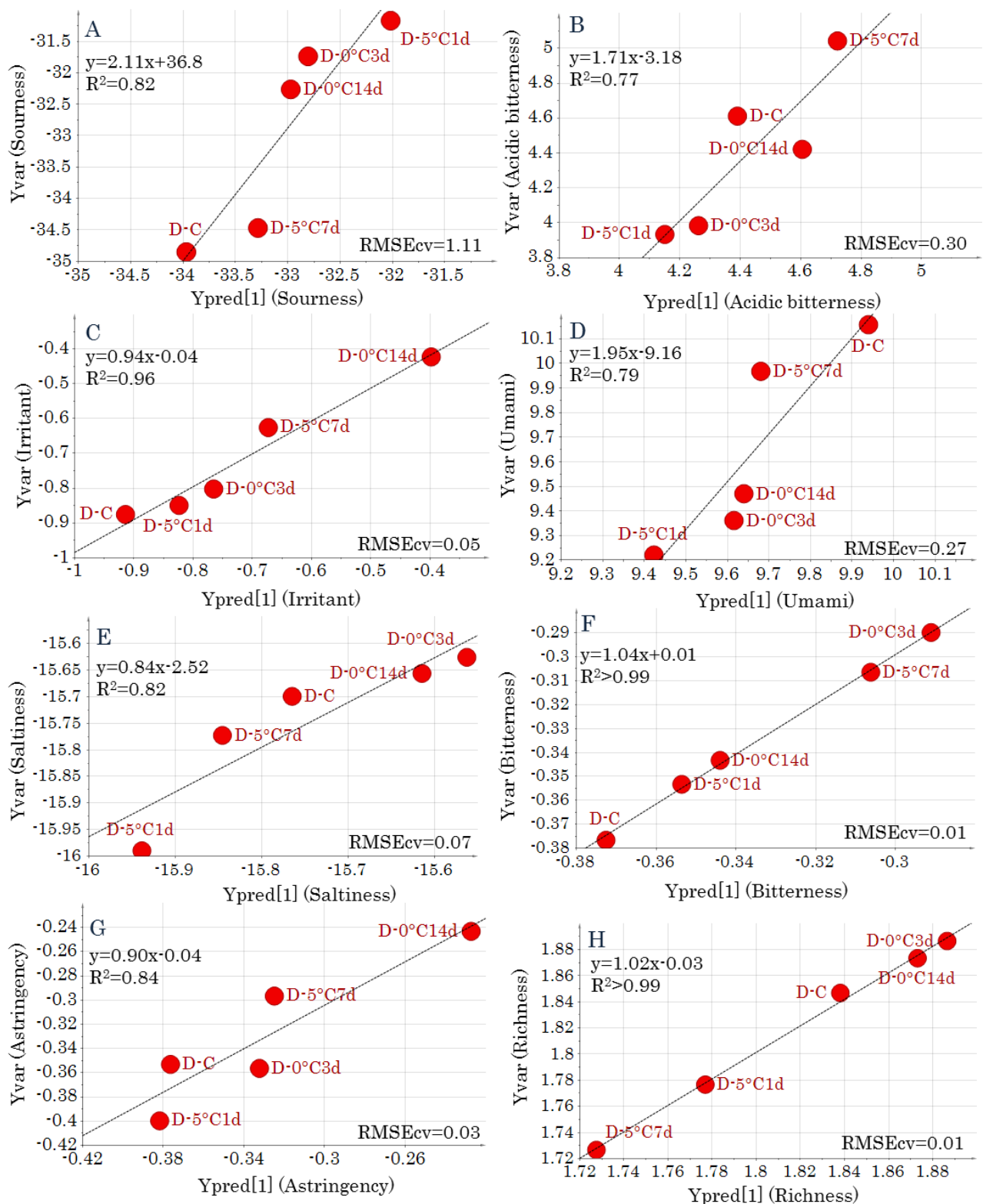
Supplementary Figure S5 Two-way orthogonal projections to latent structures analysis using y variables for which significant models were created in Figures 5 and 6. (A) Evaluation of the model when Autofit was applied. (B) Score plot. Symbols indicate sample IDs (Table S1). (C) Loading plot. Numbers and letters indicate variable IDs (Table S1). (D) Evaluation of the predictive model for each y variable. Letters on the x-axis indicate y variable IDs (Table S1). (E–G) Regression analyses of the predictive model for each y variable. Symbols indicate sample IDs (Table S1). RMSEE, root mean square errors of estimation; RMSEcv, root mean square errors of cross-validation. (E) Umami. (F) Saltiness. (G) Richness.



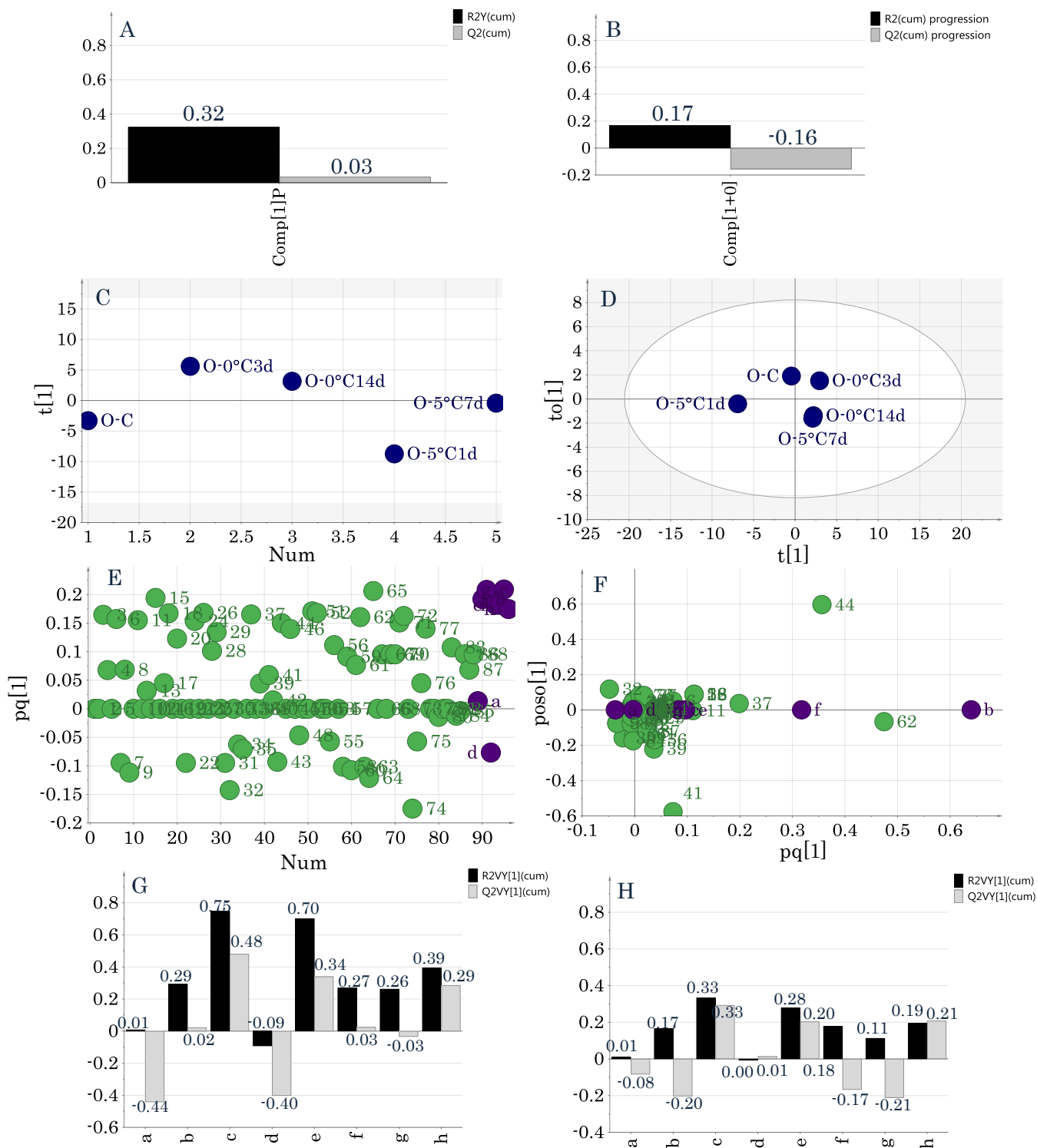
Supplementary Figure S6 Two-way orthogonal projections to latent structures analysis with unit variance scaling as a pretreatment in dark muscle samples. (A) Evaluation of the model when Autofit was applied. (B) Score plot. Symbols indicate sample IDs (Table S1). (C) Loading plot. Numbers and letters indicate variable IDs (Table S1). (D) Evaluation of the predictive model for each y variable. Letters on the x-axis indicate y variable IDs (Table S1).



Supplementary Figure S7 Two-way orthogonal projections to latent structures analysis with pareto scaling as a pretreatment in dark muscle samples. **(A)** Evaluation of the model when Autofit was applied. Model dimensionality was 1+3+3. **(B)** Score plot. Symbols indicate sample IDs (Table S1). **(C)** Loading plot. Numbers and letters indicate variable IDs (Table S1). **(D)** Evaluation of the predictive model for each y variable. Letters on the x-axis indicate y variable IDs (Table S1).



Supplementary Figure S8 Regression analyses of the predictive model for each y variable in Figure S7. (A) Sourness. (B) Acidic bitterness. (C) Irritant. (D) Umami. (E) Saltiness. (F) Bitterness. (G) Astringency. (H) Richness. Symbols indicate sample IDs (Table S1). $RMSE_{cv}$, root mean square errors of cross-validation.



Supplementary Figure S9 Two-way orthogonal projections to latent structures analysis of ordinary muscle samples. Data were pretreated with unit variance scaling (A, C, E, G) and pareto scaling (B, D, F, H). (A, B) Evaluation of the model when Autofit was applied. Model dimensionality was 1+0+1 (A) and 1+1+0 (B). (C, D) Score plot. Symbols indicate sample IDs (Table S1). (E, F) Loading plot. Numbers and letters indicate variable IDs (Table S1). (G, H) Evaluation of the predictive model for each y variable. Letters on the x-axis indicate y variable IDs (Table S1).