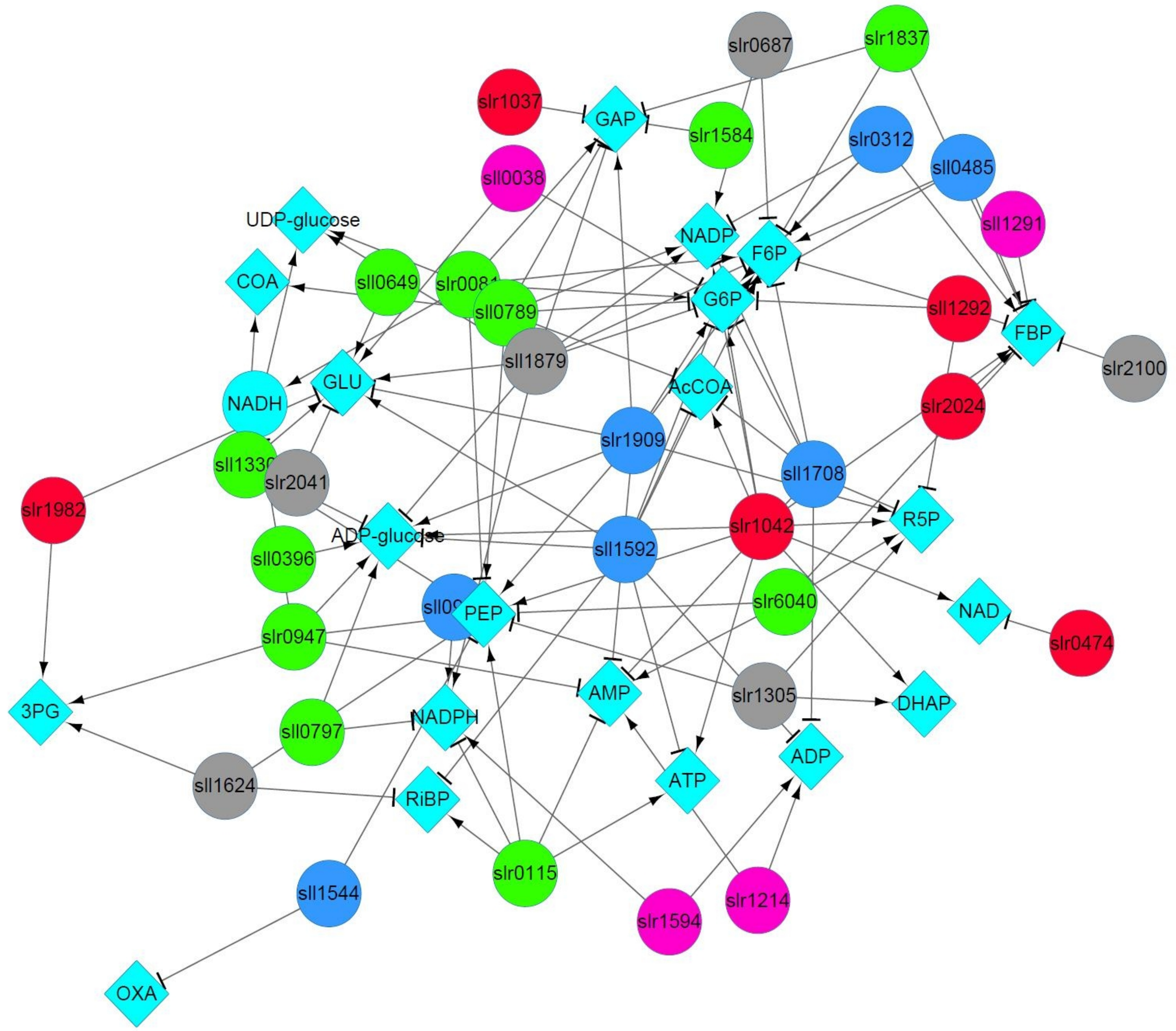
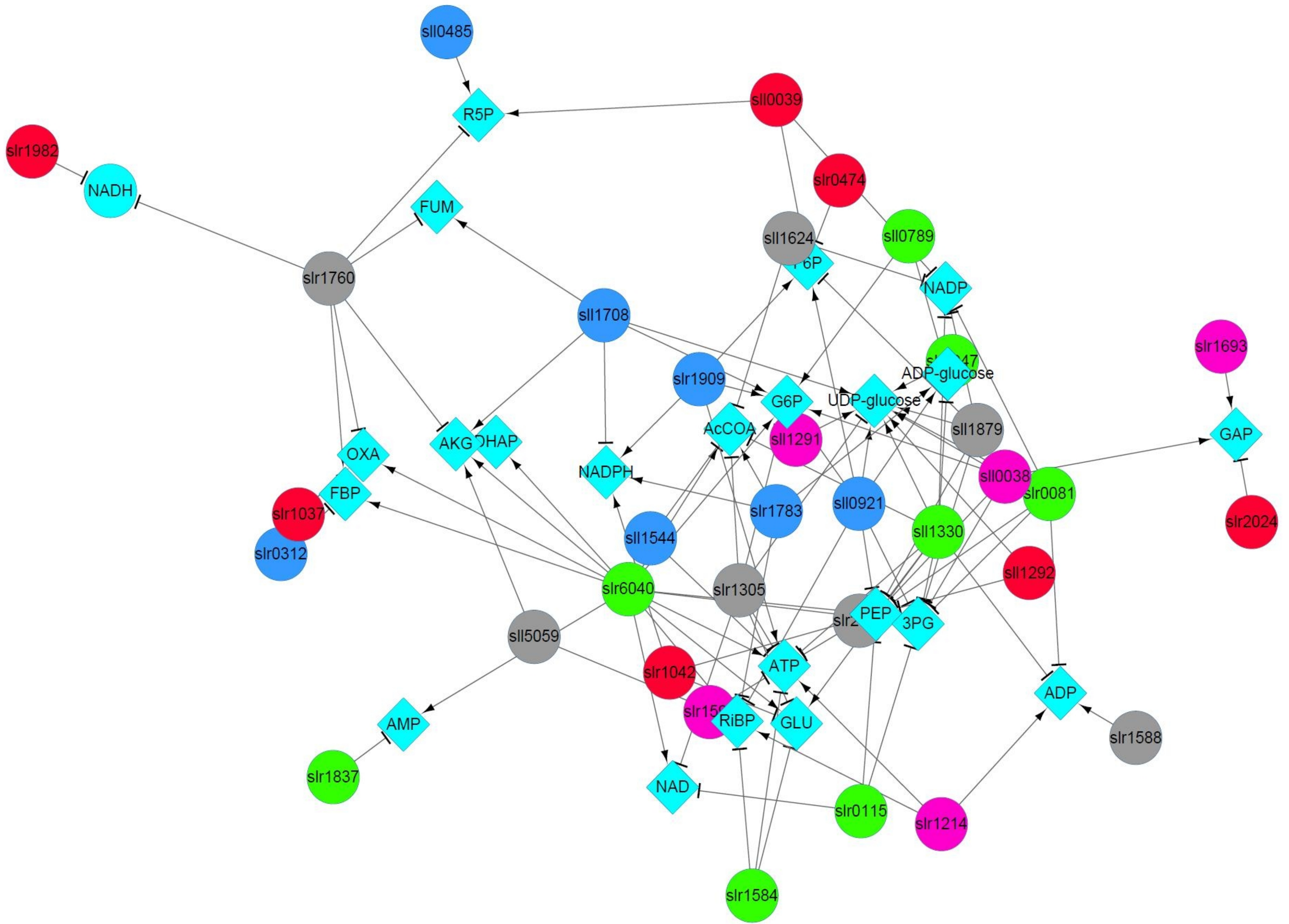


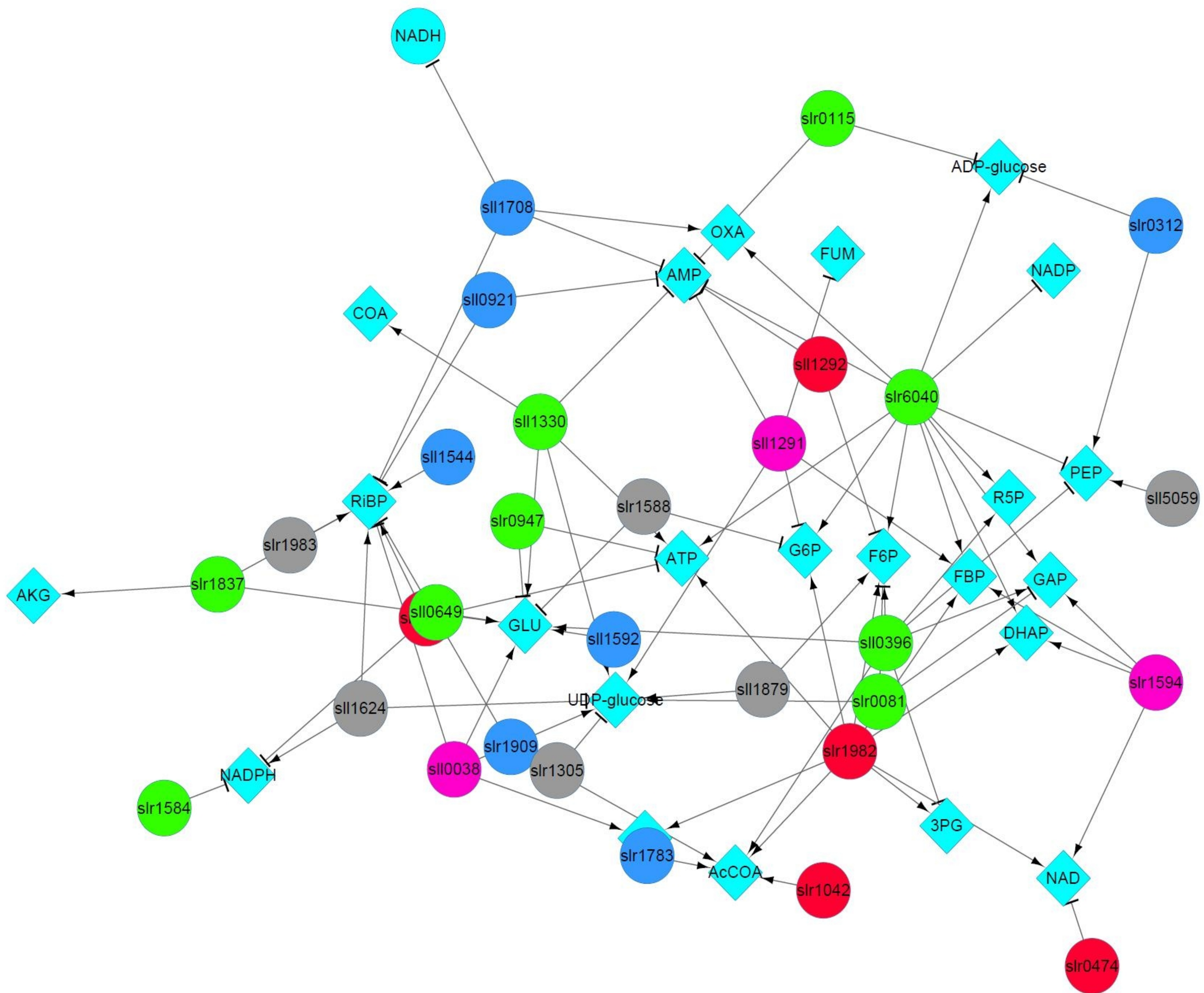
Suppl. Figure S1: Correlation between the RR mutants and regulated metabolites in central carbohydrate and energy metabolism at autotrophic growth 48 h condition.



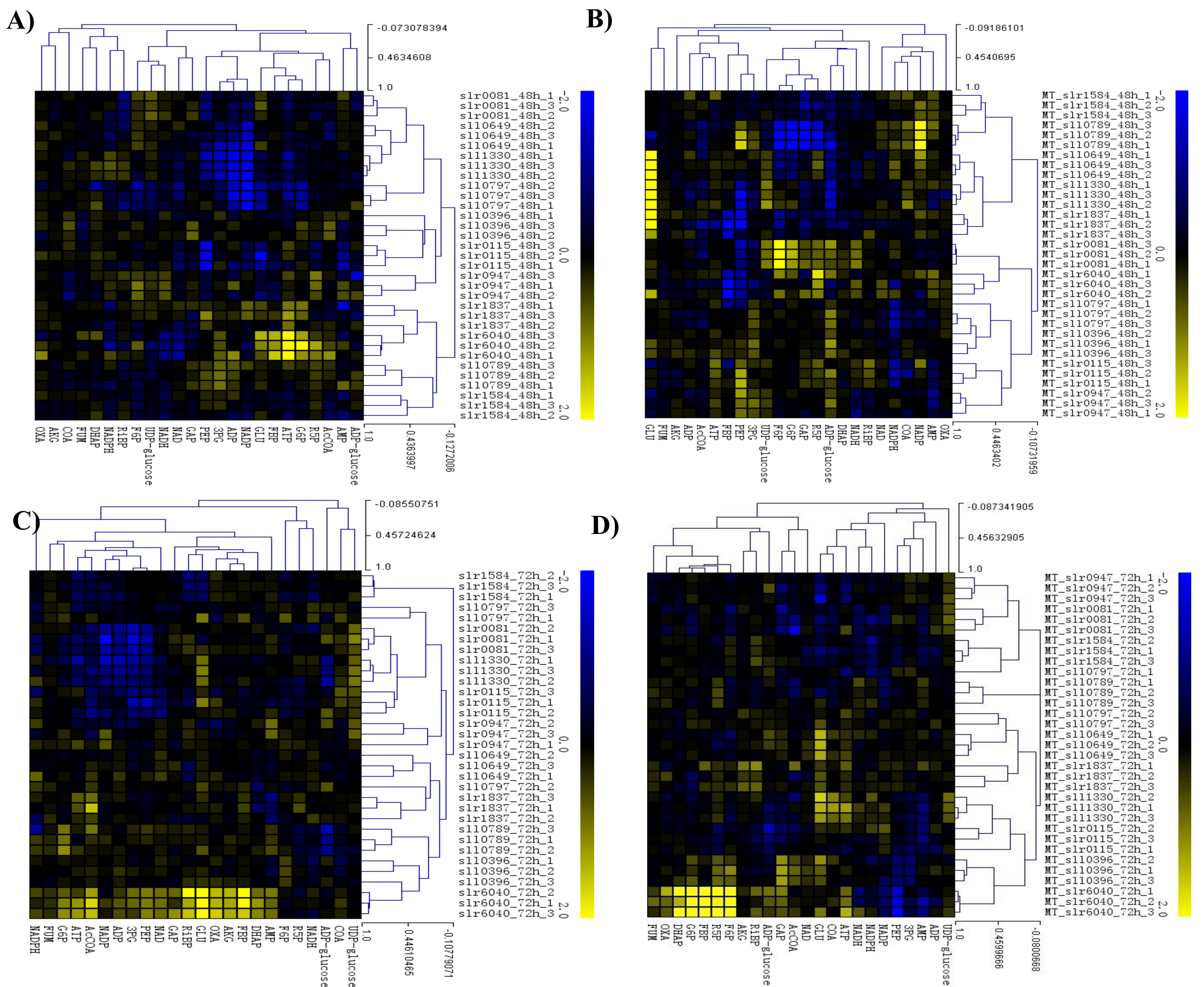
Suppl. Figure S2: Correlation between the RR mutants and regulated metabolites in central carbohydrate and energy metabolism at autotrophic growth 72 h condition.



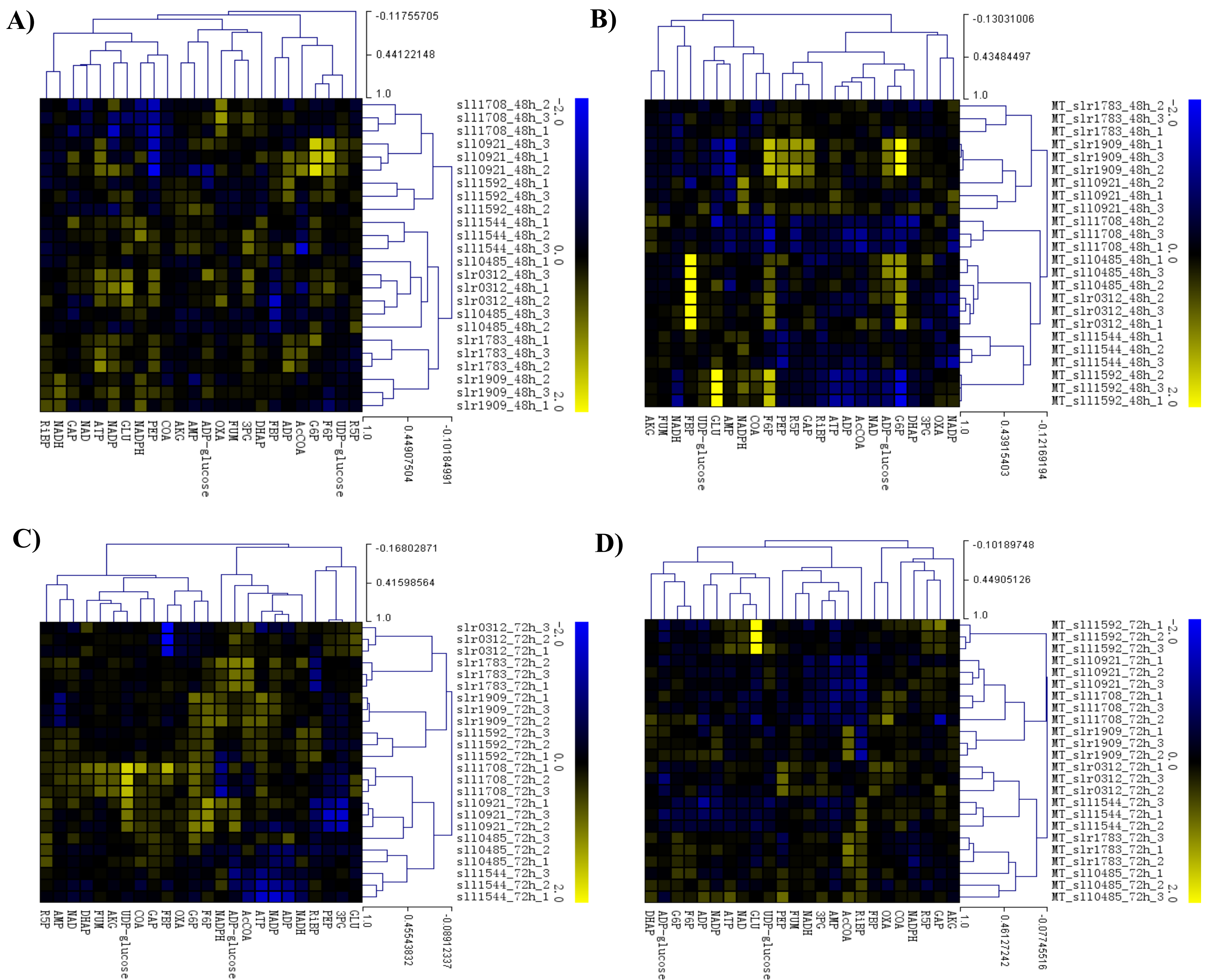
Suppl. Figure S3: Correlation between the RR mutants and regulated metabolites in central carbohydrate and energy metabolism at photomixtrophic growth 48 h condition.



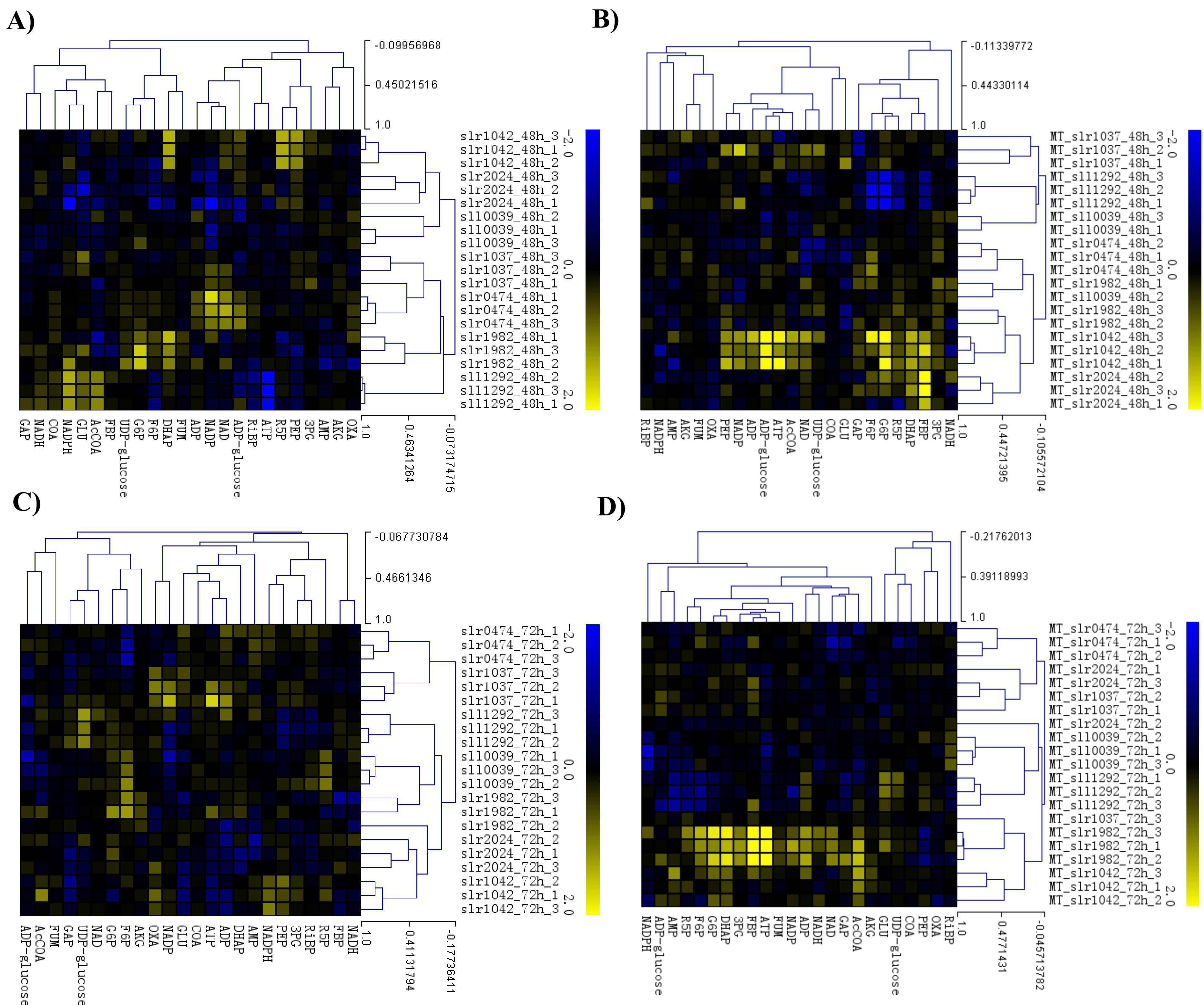
Suppl. Figure S4: Correlation between the RR mutants and regulated metabolites in central carbohydrate and energy metabolism at photomixotrophic growth 72 h condition.



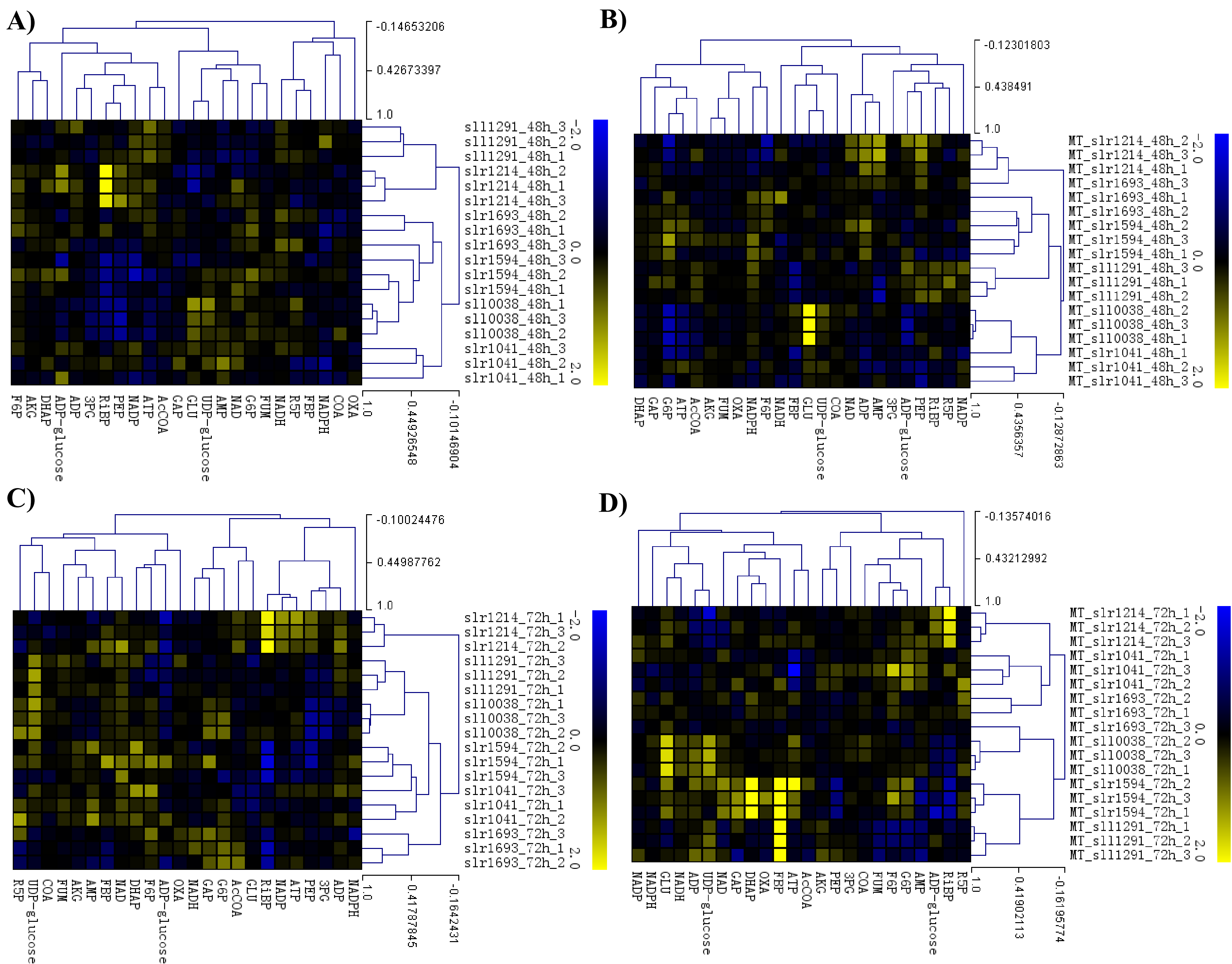
Suppl. Figure S5: Hierarchical clustering analysis of metabolomic profiles in OmpR family RR mutants. A) Autotrophic culture at 48 h condition. B) Photomixtrophic culture at 48 h condition. C) Autotrophic culture at 72 h condition. D) Photomixtrophic culture at 72 h condition.



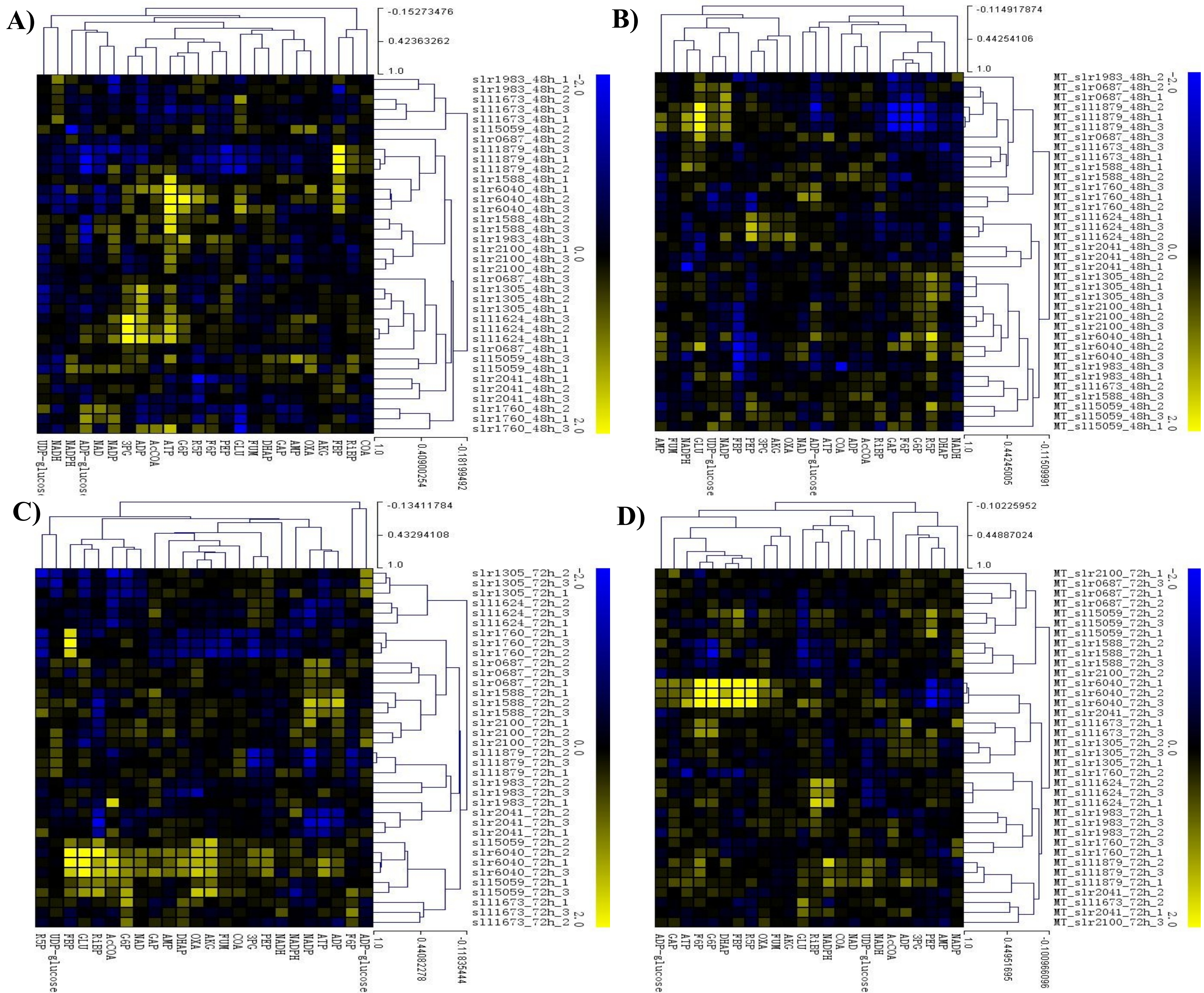
Suppl. Figure S6: Hierarchical clustering analysis of metabolomic profiles in NarL family RR mutants. A) Autotrophic culture at 48 h condition. B) Photomixotrophic culture at 48 h condition. C) Autotrophic culture at 72 h condition. D) Photomixotrophic culture at 72 h condition.



Suppl. Figure S7: Hierarchical clustering analysis of metabolomic profiles in CheY family RR mutants. A) Autotrophic culture at 48 h condition. B) Photomixtrophic culture at 48 h condition. C) Autotrophic culture at 72 h condition. D) Photomixtrophic culture at 72 h condition.



Suppl. Figure S8: Hierarchical clustering analysis of metabolomic profiles in PatA family RR mutants.
A) Autotrophic culture at 48 h condition. **B)** Photomixtrophic culture at 48 h condition. **C)** Autotrophic culture at 72 h condition. **D)** Photomixtrophic culture at 72 h condition.



Suppl. Figure S9: Hierarchical clustering analysis of metabolomic profiles in other families RR mutants. A) Autotrophic culture at 48 h condition. B) Photomixtrophic culture at 48 h condition. C) Autotrophic culture at 72 h condition. D) Photomixtrophic culture at 72 h condition.