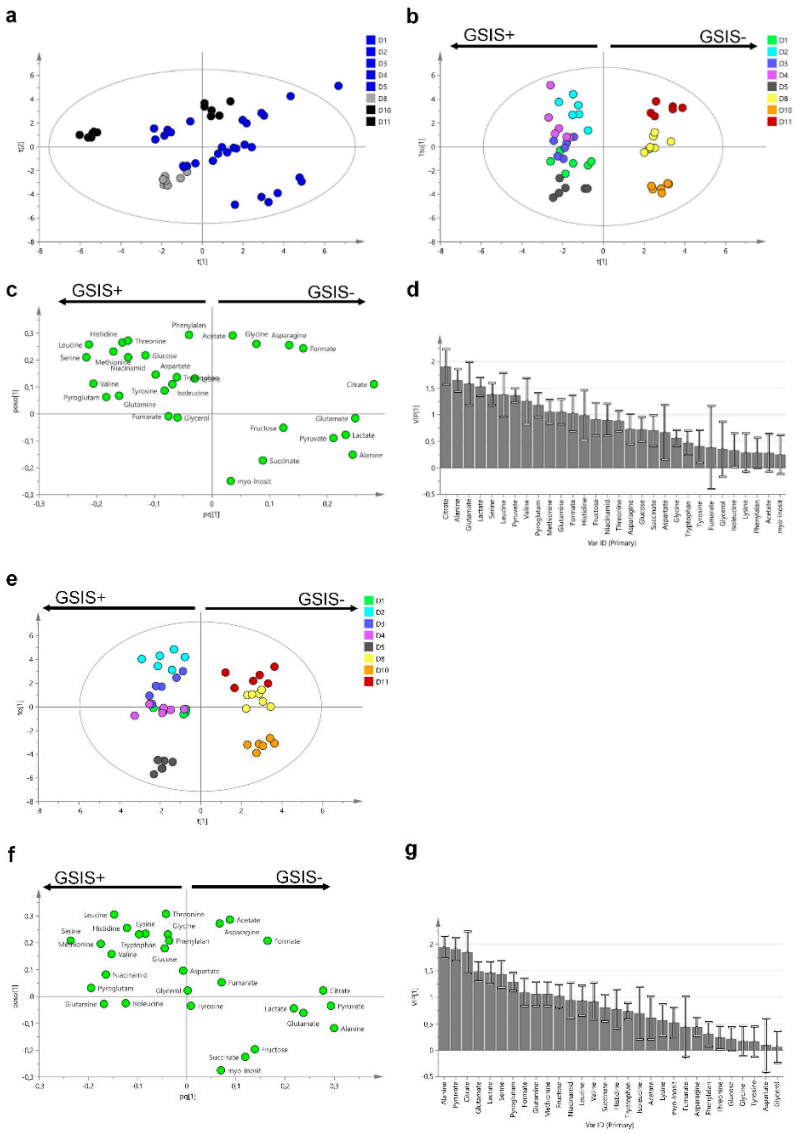


Figure S2, related to Figure 1C: Multivariate analyses to compare metabolic signature of islets under control and glucolipotoxicity conditions. (a) Principal component analysis (PCA) scores plot of data from 1 H NMR metabolomics analysis of healthy functional islets (blue), unfunctional islets (grey) and DT2 donor islets (black) after 48 h in control condition (N = 49, R2 = 0.8, and Q2 = 0.531 on 5 principal components). GSIS positive and negative islets cannot be discriminated. (b) Partial least squares-discriminant analysis (PLS-DA) scores plot of data from 1 H NMR metabolomics analysis of islets after 48 h in control condition shows the separation achieved according to GSIS status (p-value= 9.25x10-21). Colours correspond to different donors as show on the panel. The 3-class model is based on 1 predictive component and 2 orthogonal components (R2(X) = 0.489, R2(Y) = 0.94, and Q2 = 0.914) (c) OPLS-DA loading plot associated to the score plot presented in b. Each point represents the group association of each variable (metabolite). (d) Plot of variables importance for the projection (VIP) that summarizes the importance of each variables on the PLS-DA model. The VIP ranking priority was according to the VIP values. Metabolites with VIP >1 are empirically considered has having a significant impact on the model discrimination power. (e) Partial least squares-discriminant analysis (PLS-DA) scores plot of data from 1 H NMR metabolomics analysis of islets after 48 h in glucolipotoxicity condition shows the separation achieved according to GSIS status (p-value= 9.25x10-21). Colours correspond to different donors as show on the panel. The 3-class model is based on 1 predictive component and 2 orthogonal components (N = 49, R2(X) = 0.681, R2(Y) = 0.923, and Q2 = 0.871). (f) OPLS-DA loading plot associated to the score plot presented in e-f. Each point represents the group association of each variable (metabolite). (g) Plot of variables importance for the projection (VIP) that summarizes the importance of each variables on the PLS-DA model. The VIP ranking priority was according to the VIP values. Metabolites with VIP >1 are empirically considered has having a significant impact on the model discrimination power. All ellipses show in the models represent the Hotelling T2 with 95% confidence. Each data point represents one islet supernatant sample, and the distance between points in the plot indicates the similarity between samples.