Supplementary information

Detection of vancomycin resistances in enterococci within 3 ½ hours

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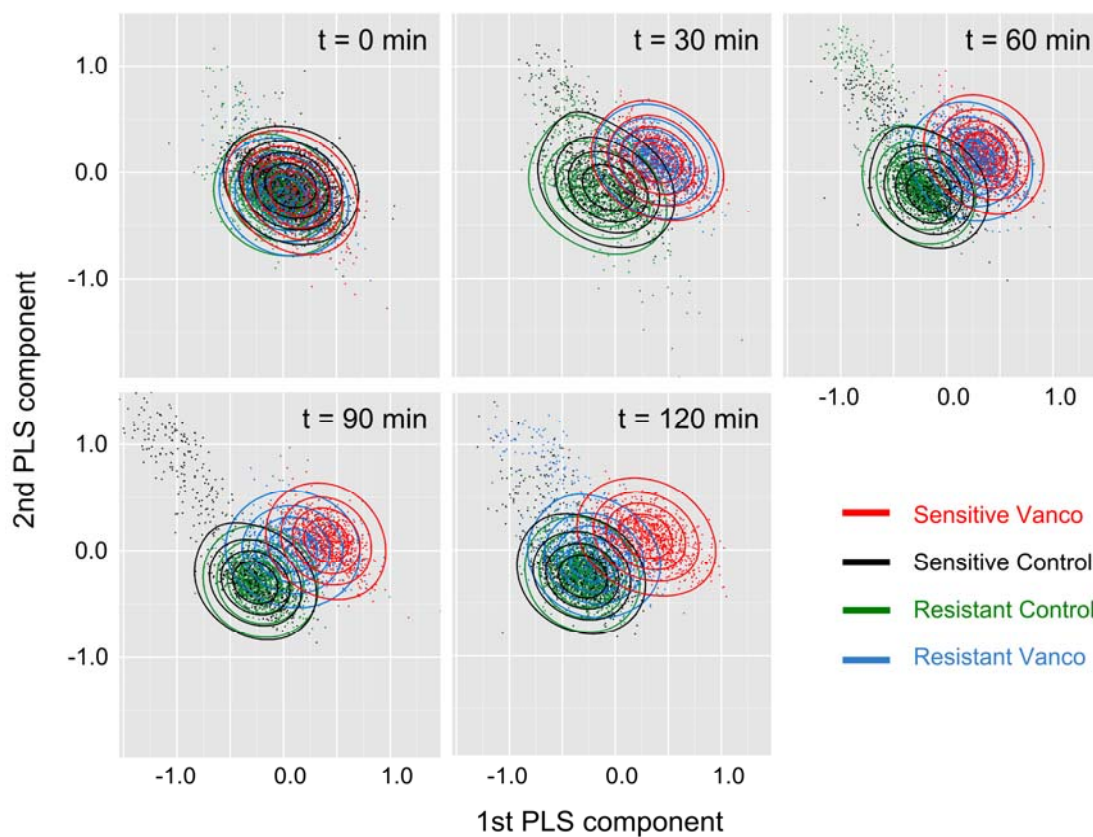
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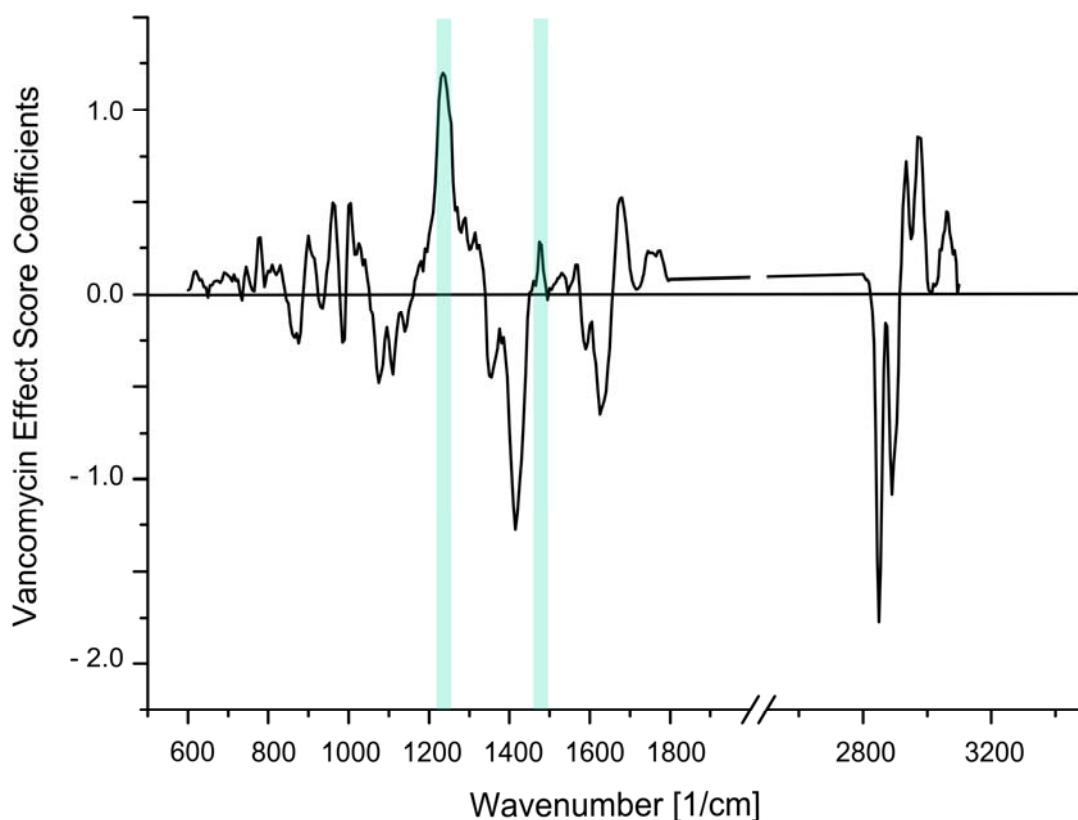
Supplementary Figure S1: Vancomycin effect score coefficients of the model. | The transformation coefficients of PLS and LDA leading to the vancomycin effect scores reveal the differences in the spectra the model is using for its choice of the linear discriminants. The two highlighted regions correspond to the differences discussed in the Raman mean spectra.

Supplementary Figure S2: Spectroscopic analysis of *E. faecium* at different time points with and without antibiotic treatment | (a) Bacterial growth curves of the vancomycin treated sensitive *E. faecium* strain in red, the untreated sensitive strain in black, the vancomycin treated resistant *E. faecium* strain in blue and the untreated resistant strain in green. (b) Raman mean spectra (same color code) are plotted at different time points after addition of vancomycin. Highlighted Raman bands show large changes over time and are comparable with the changes of the Raman bands of *E. faecalis* illustrated in Figure 2b. The blue arrows indicate the trend of relative changes for the treated resistant strain.

Supplementary Figure S3: PLS score plot for *E. faecalis* | The first level of the presented chemometric model consists of a PLS data regularization. The scores of the first and second PLS component are plotted at 0, 30, 60, 90 and 120 min after antibiotic vancomycin addition and contour lines of a smoothed 2D-density estimation are shown as guides. At t = 0 the scores are nearly identical. At t = 30 min the separation of treated and control samples is observed. At t = 60 min the scores of the resistant *E. faecalis* strain start moving towards the scores of the untreated control samples and consolidate at later time points.immediately separates from the sensitive one and behaves like the control samples. (d) The 60 min and 120 min scores in figure (c) are paired to include time dependency in the model.