

Supporting Information

Effect of sodium chloride on α -dicarbonyl compounds and 5-hydroxymethyl-2-furfural formations from glucose under caramelization conditions – A multiresponse kinetic modelling approach

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Figure S1. Extracted ion chromatograms of the quinoxaline derivatives of 0.2 µg/ml glyoxal (m/z 131), methylglyoxal (m/z 145), diacetyl (m/z 159) and 3-deoxyglucosone (m/z 235).

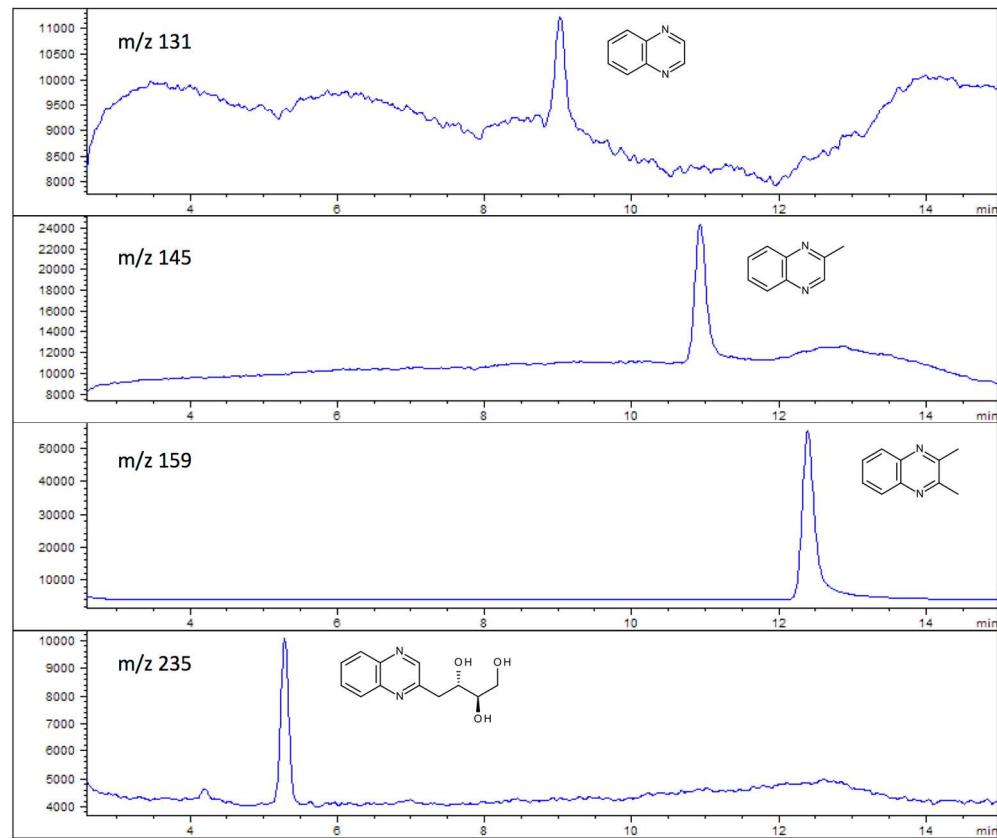


Figure S2. Total and extracted ion chromatograms of the quinoxaline derivatives of α -dicarbonyl compounds identified in a heated glucose-NaCl mixture ($180\text{ }^{\circ}\text{C} \times 3\text{ min}$). Glyoxal: m/z 131; methylglyoxal: m/z 145; diacetyl: m/z 159; 3,4-dideoxyglucosone: m/z 217; 1- or 3-deoxyglucosone: m/z 235; glucosone: m/z 251.

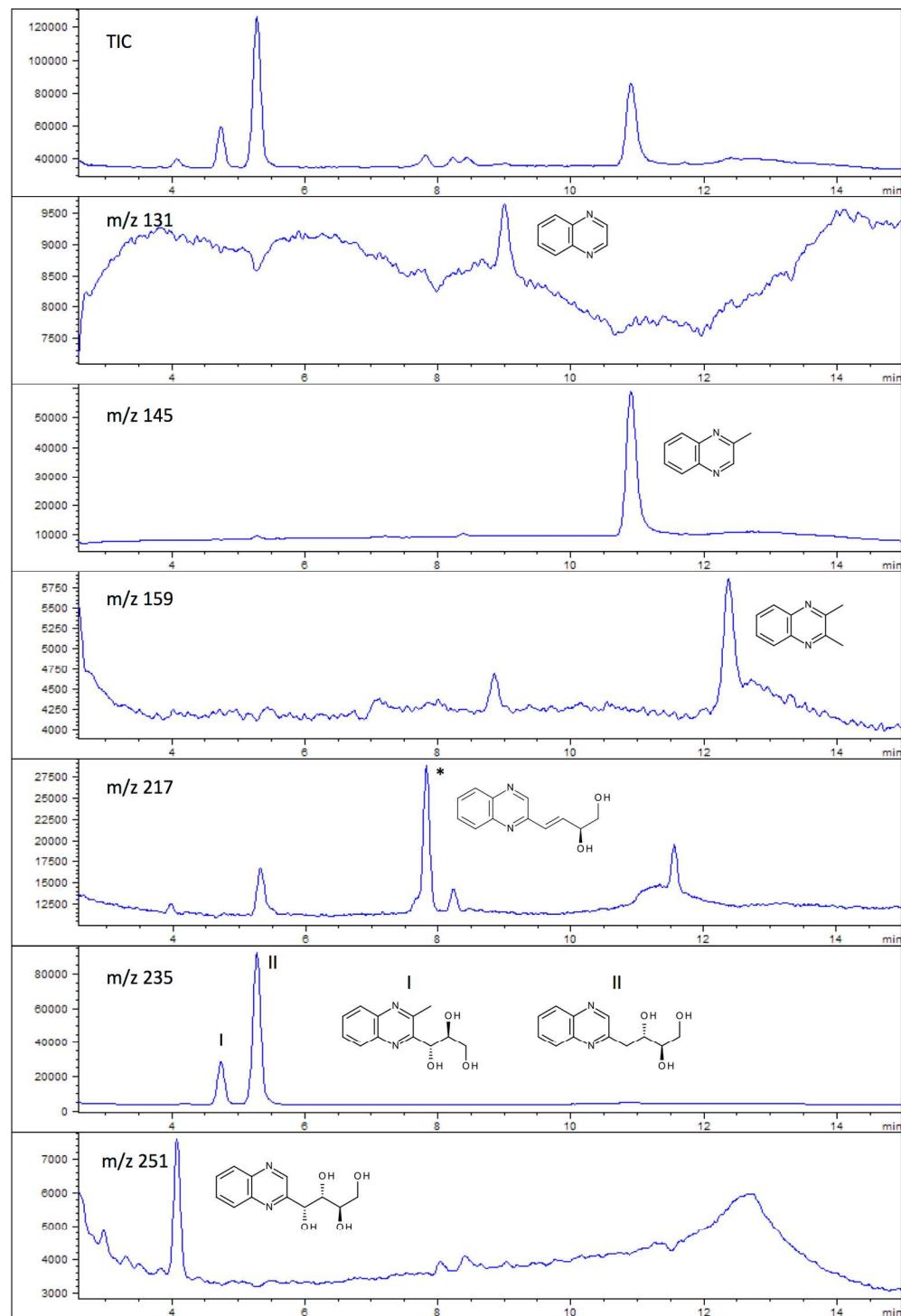


Figure S3. Kinetic model fit (lines) according to the Arrhenius equation to the individually obtained experimental data (markers) of reactants and products in heated glucose system. Blue color for markers and lines designates 160 °C, green 180 °C and red 200 °C. Open gem (\diamond) marker designates glucose, open triangle (Δ) fructose, others (o) as indicated in their y-axis labels.

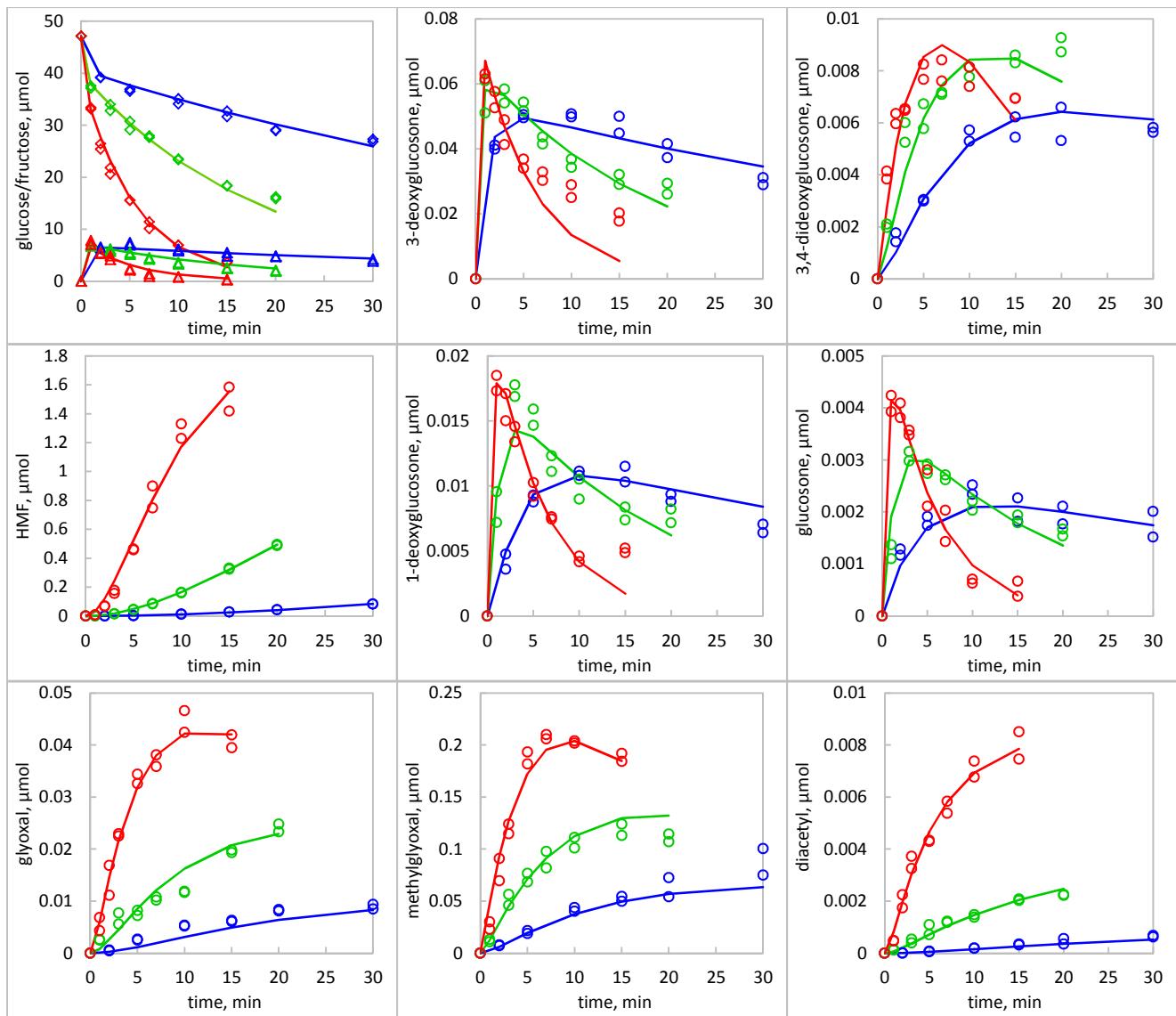


Figure S4. Kinetic model fit (lines) according to the Arrhenius equation to the individually obtained experimental data (markers) of reactants and products in heated glucose-NaCl system. Blue color for markers and lines designates 160 °C, green 180 °C and red 200 °C. Open gem (\diamond) marker designates glucose, open triangle (Δ) fructose, others (o) as indicated in their y-axis labels.

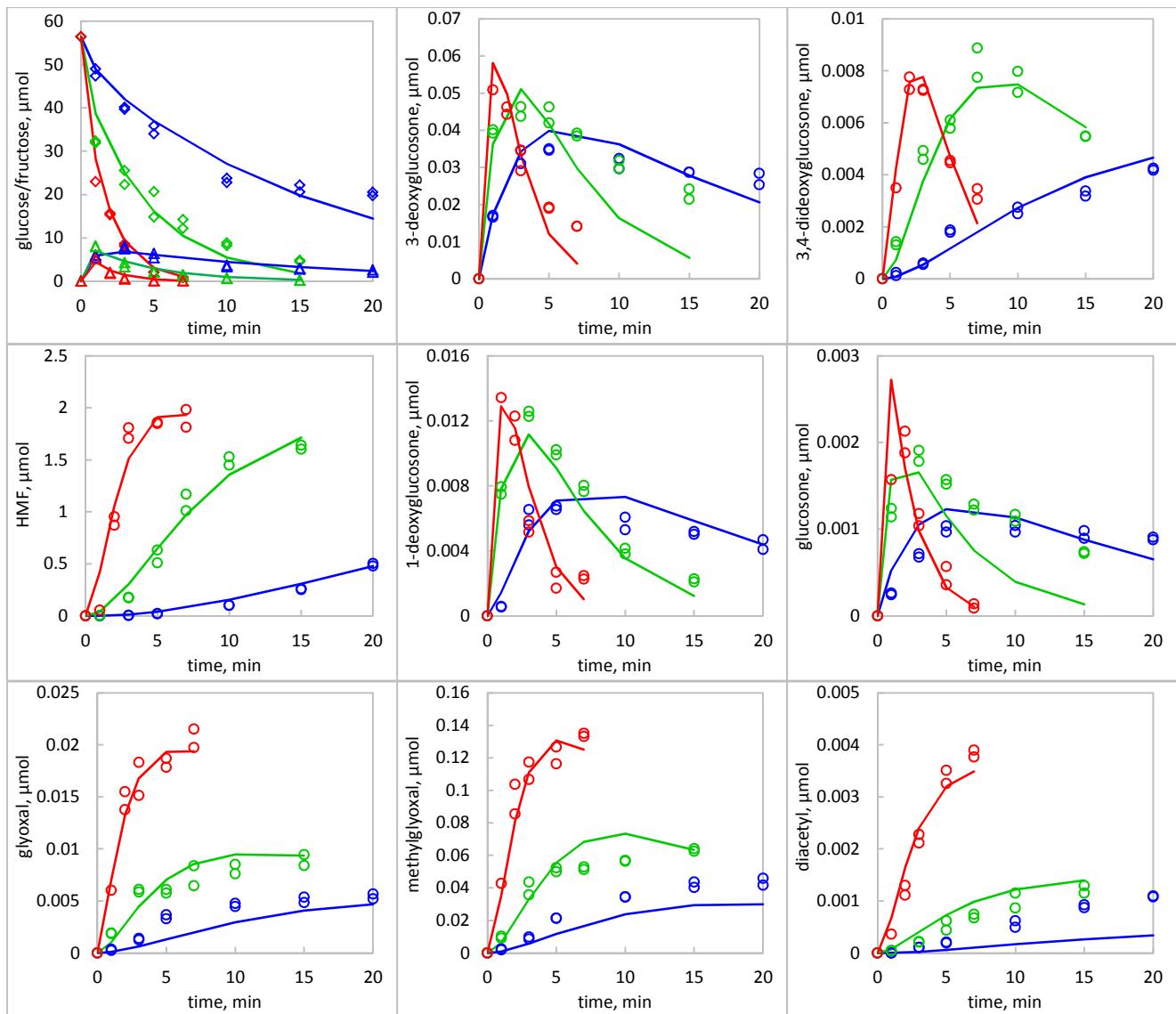


Figure S5. Kinetic model fit (lines), in which HMF formation from fructose omitted, comparing to the individually obtained experimental data (markers) of reactants and products in heated glucose system. Blue color for markers and lines designates 160 °C, green 180 °C and red 200 °C.

