Electronic Supplementary Material (ESI) for Physical Chemistry Chemical Physics.
This journal is © the Owner Societies 2023

Electronic Supplementary Information. Bio-SAXS of Single-Stranded DNA-Binding Proteins: Radiation Protection by the Compatible Solute Ectoine

Dorothea C. Hallier[1,2,3], Glen J. Smales[3], Harald Seitz[1,2], and Marc Benjamin Hahn*[3]

[1]Universität Potsdam, Institut für Biochemie und Biologie, 14476 Potsdam, Germany
[2]Fraunhofer Institute for Cell Therapy and Immunology, Branch Bioanalytics and Bioprocesses (IZI-BB), 14476 Potsdam, German
[3]Bundesanstalt für Materialforschung und –prüfung (BAM), 12205 Berlin, Germany

In the following additional scattering curves and fitting results and data are presented. Details can be found in the main text.

*marc-benjamin.hahn@fu-berlin.de

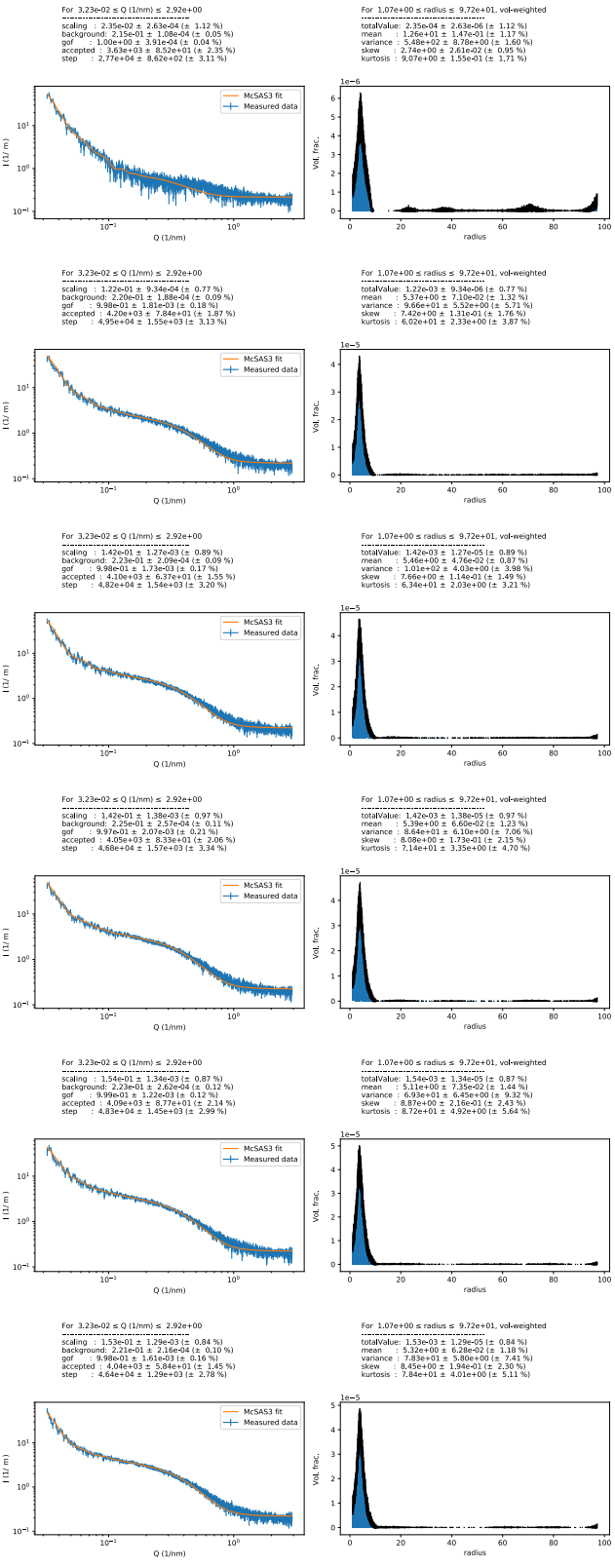

Figure 1: Scattering curves (left) and corresponding McSAS3 fitting results (right) for G5P at 1 mg/mL without Ectoine at (top to bottom) ar t=1 s 100 s, 200 s, 300 s 400 s, and 500 s.

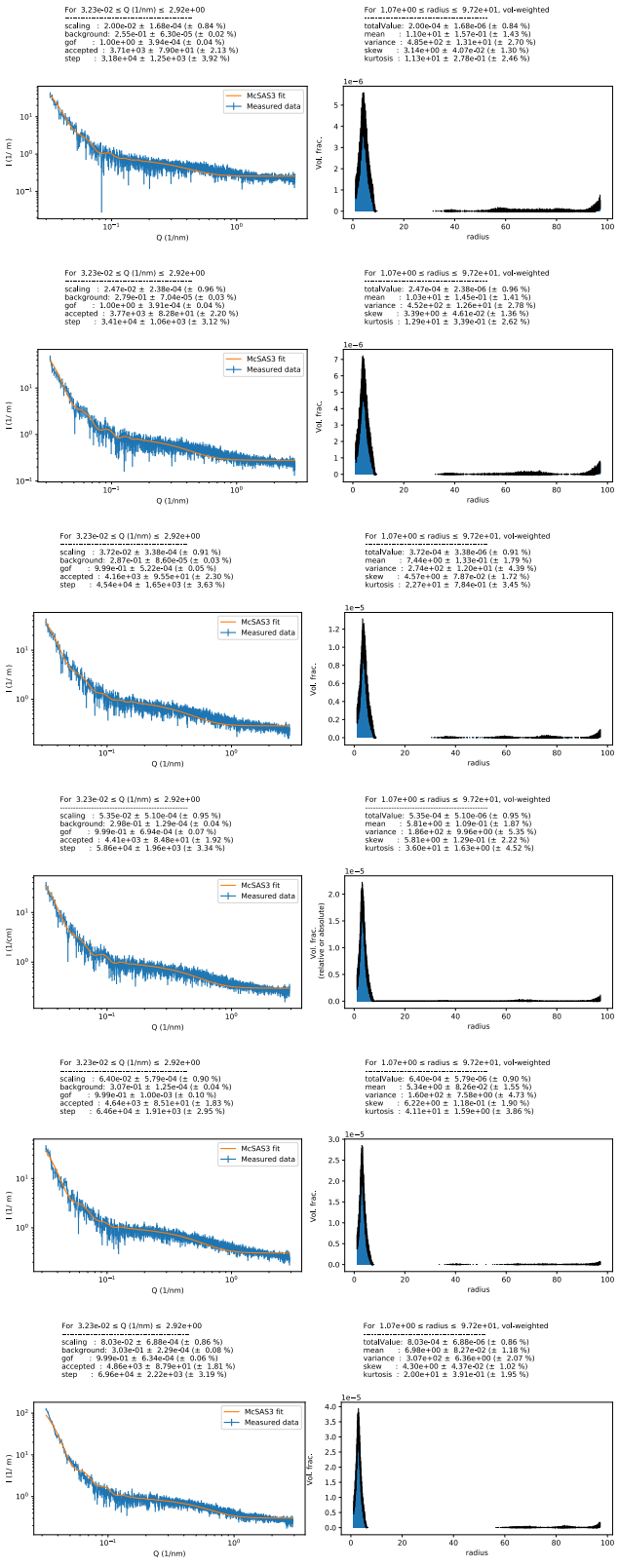

Figure 2: Scattering curves (left) and corresponding McSAS3 fitting results (right) for G5P at 1 mg/mL with Ectoine at (top to bottom) at t=1 s 100 s, 200 s, 300 s 400 s, and 500 s.

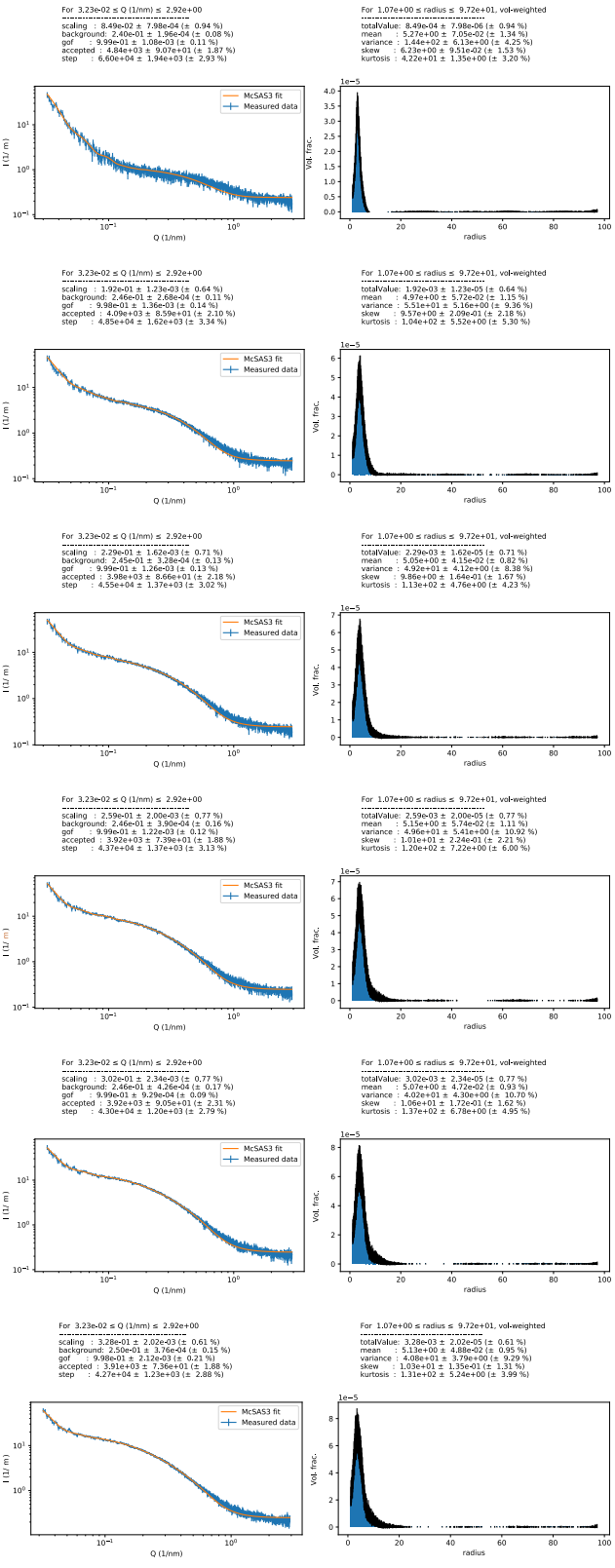

Figure 3: Scattering curves (left) and corresponding McSAS3 fitting results (right) for G5P at 2mg/mL without Ectoine at (top to bottom) ar t=1 s 100 s, 200 s, 300 s 400 s, and 500 s.

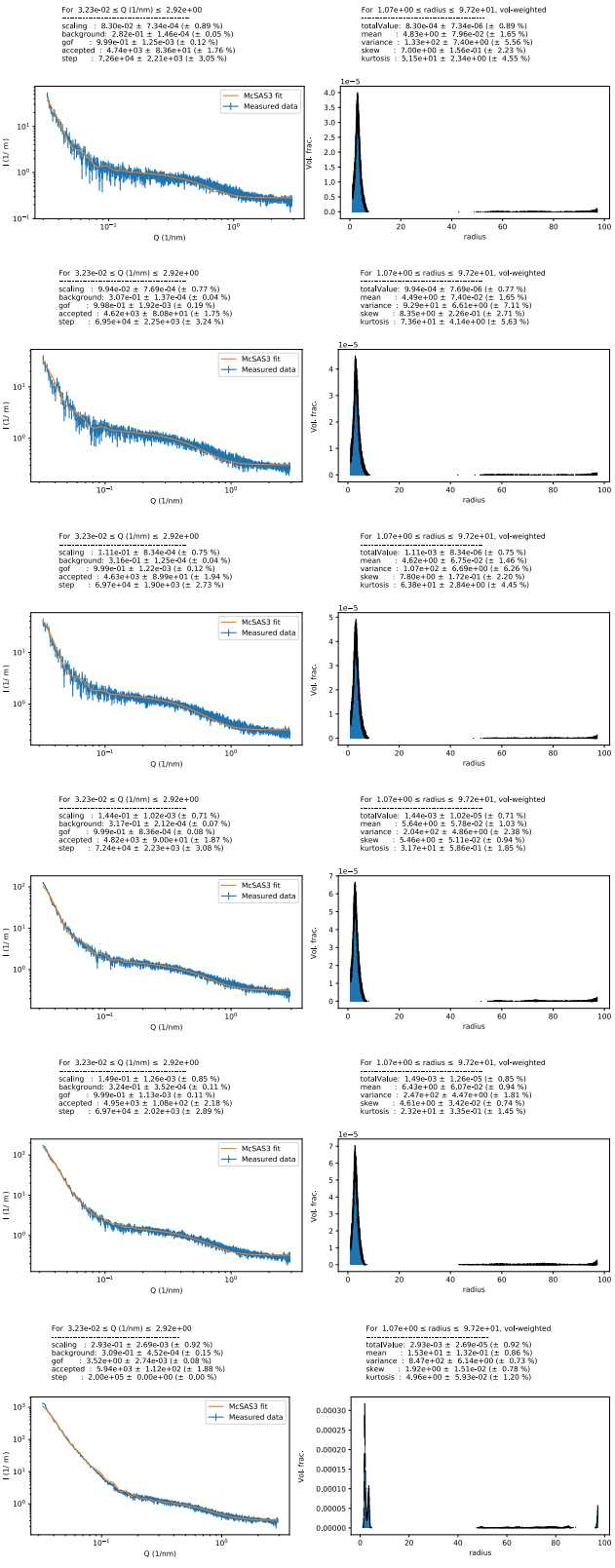

Figure 4: Scattering curves (left) and corresponding McSAS3 fitting results (right) for G5P at 2mg/mL with Ectoine at (top to bottom) at t=1 s 100 s, 200 s, 300 s 400 s, and 500 s.

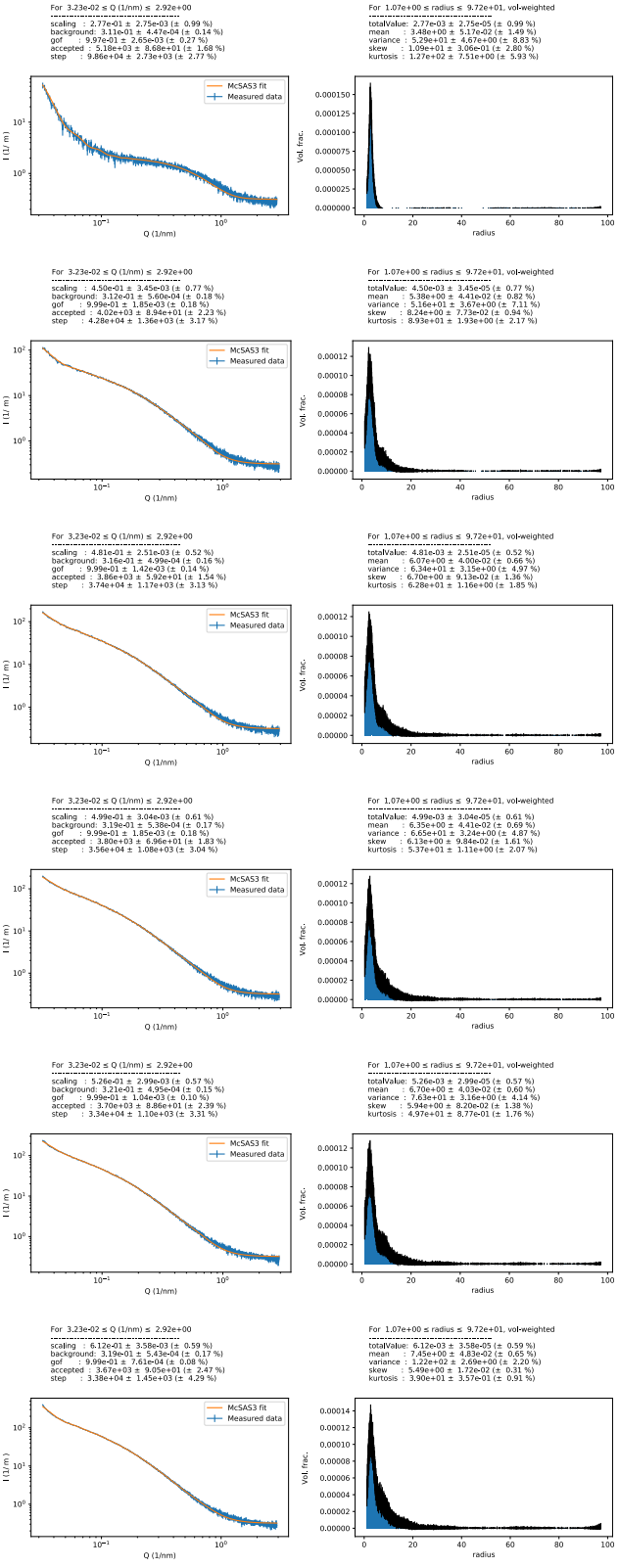

Figure 5: Scattering curves (left) and corresponding McSAS3 fitting results (right) for G5P at 4mg/mL without Ectoine at (top to bottom) at t=1 s 100 s, 200 s, 300 s 400 s, and 500 s.

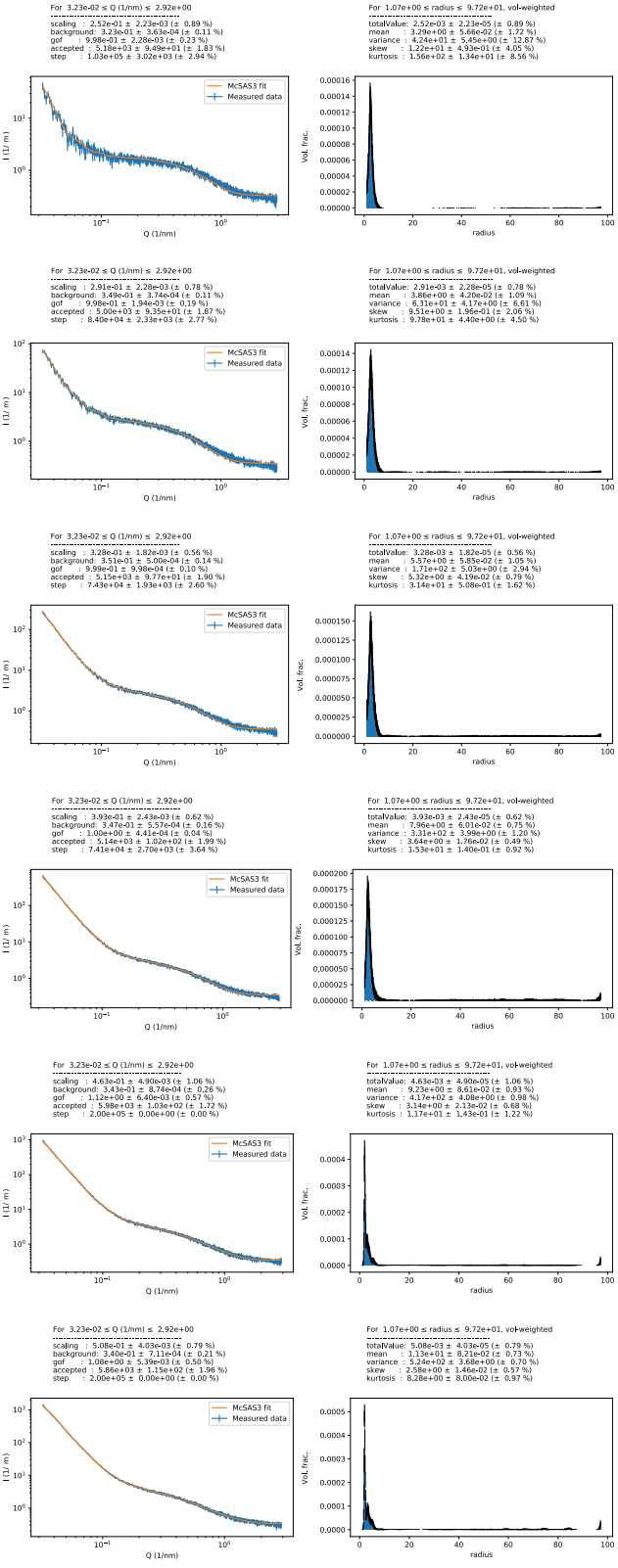

Figure 6: Scattering curves (left) and corresponding McSAS3 fitting results (right) for G5P at 4mg/mL with Ectoine at (top to bottom) at t=1 s 100 s, 200 s, 300 s 400 s, and 500 s.

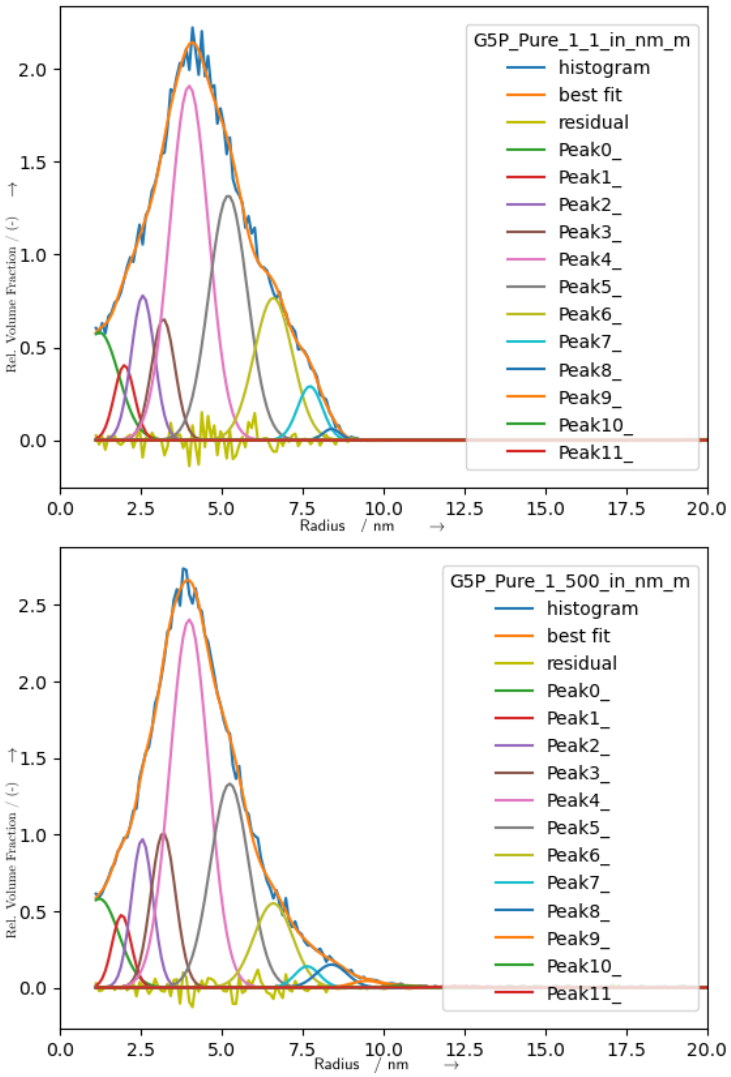

Figure 7: Exemplary histograms of the fitted radii for pure solutions (1 mg/mL) at the beginning (top) and end (bottom) of the irradiation. For details see the main text.

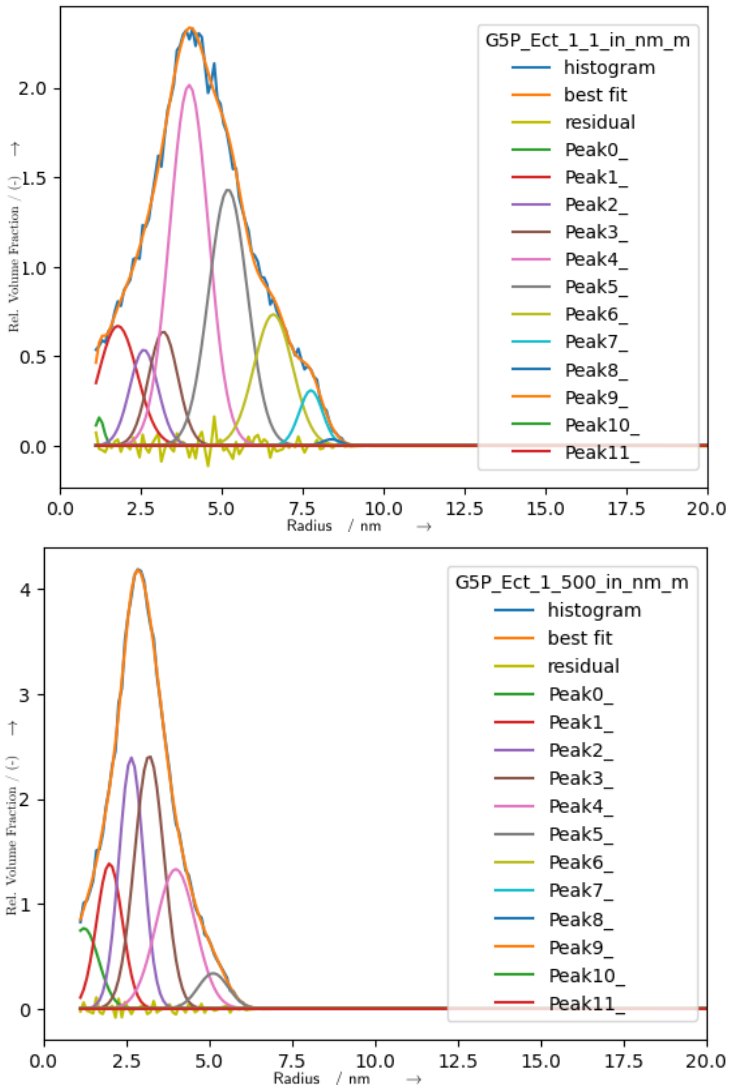

Figure 8: Exemplary histograms of the fitted radii for Ectoine containing solutions (1 mg/mL) at the beginning (top) and end (bottom) of the irradiation. For details see the main text.

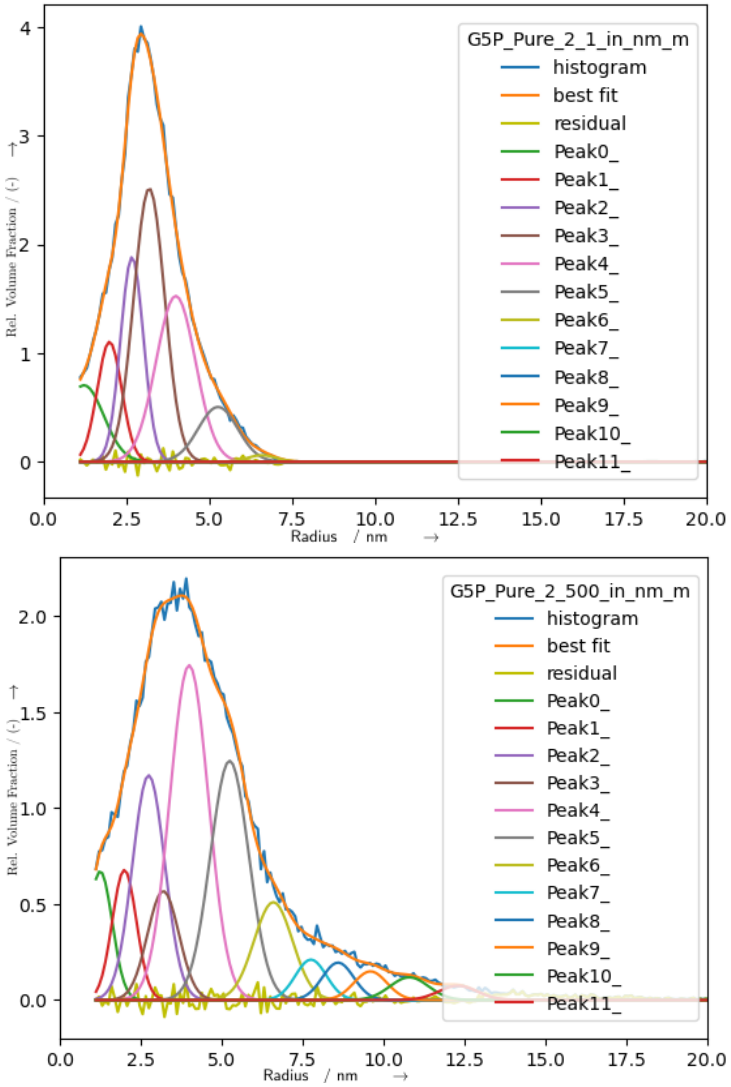

Figure 9: Exemplary histograms of the fitted radii for pure solutions (2 mg/mL) at the beginning (top) and end (bottom) of the irradiation. For details see the main text.

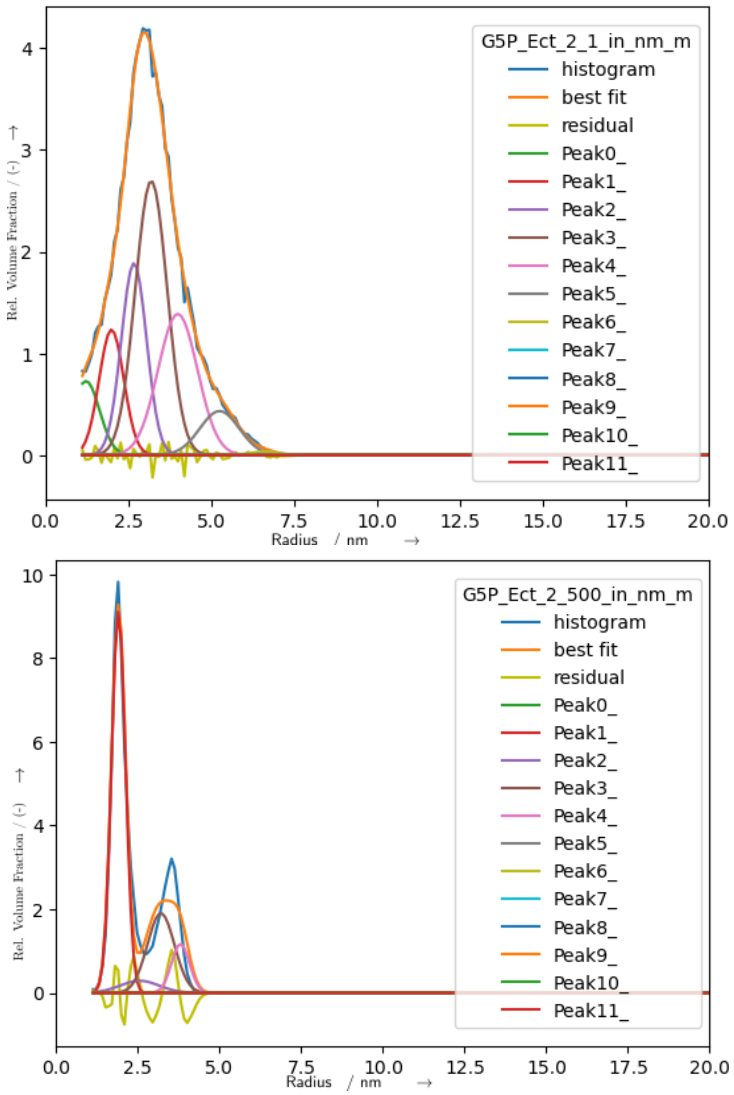

Figure 10: Exemplary histograms of the fitted radii for Ectoine containing solutions (2 mg/mL) at the beginning (top) and end (bottom) of the irradiation. For details see the main text.

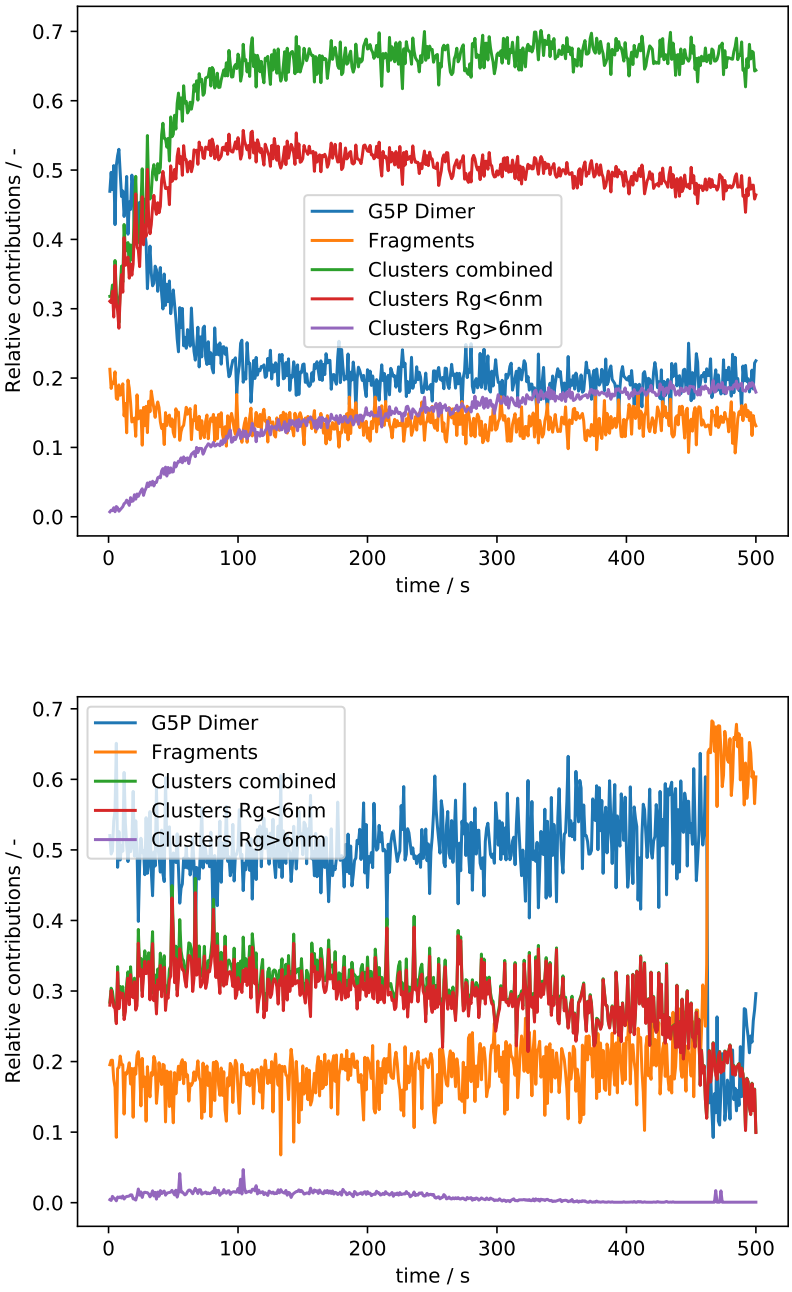

Figure 11: Time evolution of the fits of the different Gaussians corresponding to the various G5P species at concentrations of 2 mg/mL resulting in the distribution of the different fitted radii for pure solutions, without (top) and with (bottom) Ectoine.

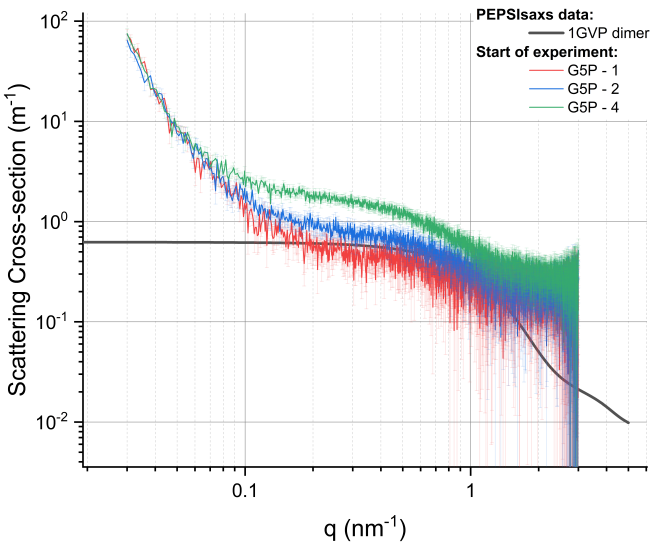

Figure 12: Measured scattering curves of pure G5P with the indicated concentrations at the beginning of the measurements together with the simulated curve from Pepsi-SAXS as described in the main manuscript.

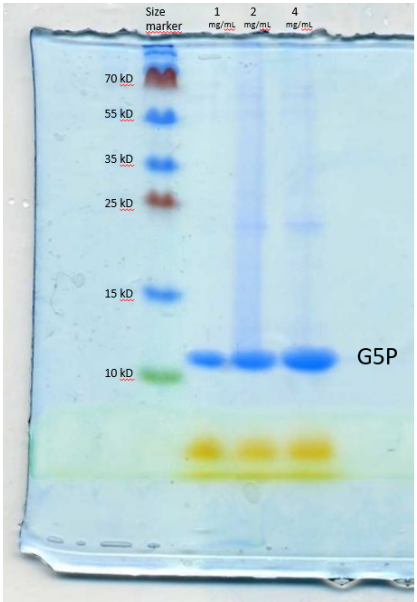

Figure 13: SDS-PAGE (15 %) with G5P purified protein in different concentrations and size marker. The gel was stained with Coomassie brilliant blue.

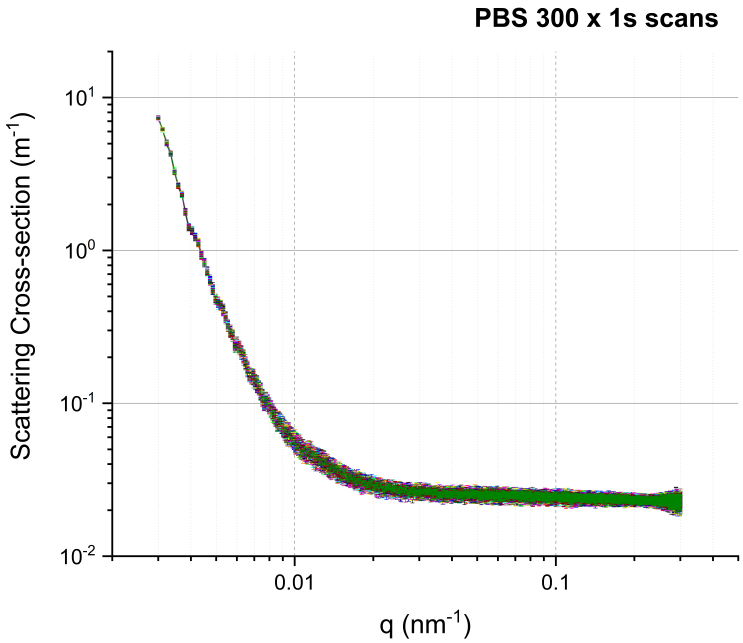

Figure 14: SAXS Scattering curves of the pure PBS buffer at different times. No change is observed for the overlay of 300 curves recorded for 1 s each.