



S11 Figure. SEC-SAXS analysis of MBP-2rNT, and the other two Arc constructs used in this study. CTdt refers to the hArc-CTD construct used. **A** SEC elution profiles for the three constructs. Extrapolated I_0 of each frame (lines) are plotted on the left Y-axis and open rings indicate the calculated R_g of the main peak data frames used for data processing and modelling. **B** Scattering profiles of each sample. The data fits from GNOM are shown as black lines and the curves are displaced by two logarithmic units, for clarity. **C** Scattering data shown on a dimensionless Kratky plot. The X indicates the expected maximum for a fully rigid spherical particle ($\sqrt{3}$, 1.104). The rigidity of the MBP-2rNT construct was apparent. **D** Distance distribution profiles. FLrArc-7A showed a characteristic wide profile, indicating elongation, hArc-CTD showed a two-peak profile, typical of bilobar structures and the bell-shaped distribution of MBP-2rNT indicated a more compact fold. **E** *Ab initio* model of the dimeric rArc mutant, produced with no forced symmetry in DAMMIN ($\chi^2=0.9992$). *Ab initio* models of the MBP-2rNT dimer (**F**) and hArc-CTD (**G**), produced using GASBOR without forced symmetry ($\chi^2=1.790$ for MBP-2rNT and $\chi^2=1.261$ for hArc-CTD).