Figure S1. Sedimentation equilibrium analysis of DnaG-C at 1.02 (A) and 4.86 mg/mL (B) represented by a plot of $\ln(A)$ versus $\Delta r^2$, where $A$ is the absorbance and $r$ is the radial distance in cm from the axis of rotation ($r^2 = 0$ corresponds to $r = 6.93$ cm). The data were recorded at 280 (A) and 300 nm (B). Data from three separate absorbance scans (in blue) are overlaid, and separate least-squares fits are shown in red. The fits indicate a molecular weight of DnaG-C of about 16,500 (A) and 14,100 (B).
Figure S2. $^{15}$N-HSQC spectra of DnaG-C at different pH values. The protein concentration was 0.2 mM at pH 8.1, 0.4 mM at pH 6.1, and 0.2 mM at pH 4.6. A spectrum at pH 6.1 recorded at 20-fold lower concentration was indistinguishable from the spectrum shown in the second panel. All spectra were acquired at a $^1$H NMR frequency of 800 MHz.
Figure S3. Comparison of $^{15}$N-relaxation rates of DnaG-C at pH 6.1 and relative cross-peak heights in the $^{15}$N-HSQC spectrum at pH 4.6 and pH 6.1. (A) and (B) $R_1^{(15)N}$ and $R_2^{(15)N}$ relaxation rates, respectively, measured at pH 6.1 under the conditions of Figure S4. All measured data are shown (reproduced from Fig. 1 of the main text). (C) Ratio of the cross-peak heights of DnaG-C at pH 4.6 and 6.1 in the $^{15}$N-HSQC spectra shown in Figure S2. The helix boundaries determined for the solution structure at pH 6.1 are indicated.
Figure S4. $^{15}$N-relaxation rates of DnaG-C measured at 25 °C for different pH values. The protein concentration was 0.2 mM at pH 4.6, 0.4 mM at pH 6.1 and 0.2 mM at pH 8.1. All spectra were acquired at a $^1$H NMR frequency of 800 MHz. For improved visualization, data are shown only for those residues for which cross-peaks could be resolved at all three pH values. (Notably, a number of cross-peaks were absent or weak at pH 4.6, see Figures S2 and S3). The helix boundaries determined for the solution structure at pH 6.1 are indicated at the top.
Figure S5. Superposition of $^{15}$N-HSQC spectra of DnaG-C recorded in the absence (blue contours) and presence (magenta contours) of DnaB(1-171). The spectra were recorded at 25 °C with a 0.13 mM solution of DnaG-C in a buffer containing 10 mM Tris.HCl (pH 6.5), 50 mM NaCl, 5 mM MgCl$_2$ and 1 mM dithiothreitol. DnaB(1-171) was used in equimolar ratio.