Crystal Structure of the *Eco SSB* DNA Binding Domain

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Single-stranded DNA binding protein (SSB) from *Escherichia coli* is a homotetramer that plays essential roles in DNA replication, recombination, and repair. SSB stabilizes single-stranded DNA (ssDNA) intermediates formed during these processes and can bind ssDNA in at least two major binding modes that differ in the number of nucleotides occluded per SSB tetramer (35 or 65 nucleotides), in the number of subunits involved in binding (2 or 4 subunits), as well as in the type of cooperative binding to ssDNA. The ssDNA binding domain of the homotetramer has been crystallized in a complex with two 35-mer ssDNAs, and the structure determined to a resolution of 2.8 Å. This structure describes the vast network of interactions that results in the extensive wrapping of ssDNA around SSB and suggests a structural basis for its various binding modes (Fig. 1).

For the complete article, see S. Raghunathan, A.G. Kozlov, T.M. Lohman, and G. Waksman, "Crystal structure of the homotetrameric DNA binding domain of *E. coli* SSB protein bound to single stranded DNA," Nat. Struct. Biol. **7**, 648-652 (2000).

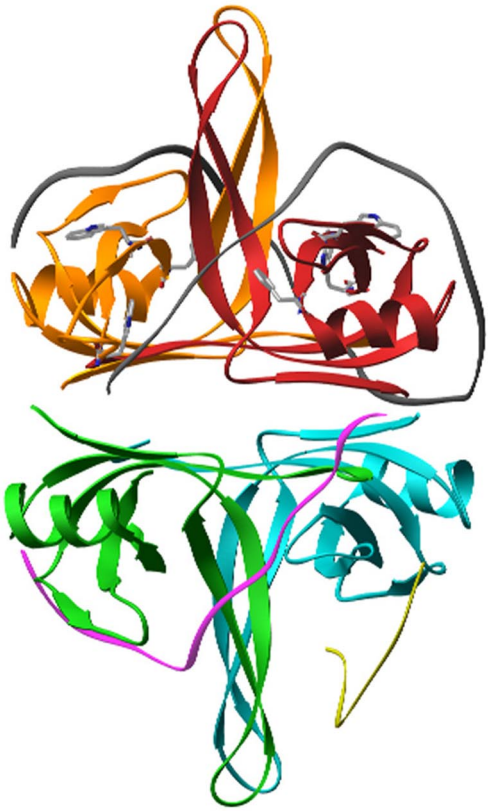

FIG. 1. Ribbon diagram of the SSBc-ssDNA complex. Two 35mer dC oligomers were used in the co-crystallization. On one side of the SSBc tetramer, 28 nucleotides of one 35mer were ordered (in gray). On the other side of the tetramer, two fragments of one 35mer were ordered (in magenta and yellow, respectively). Each SSBc subunit is color-coded.