Figure 10.9 A simplified version of one molecular mechanism of genetic recombination. Homologous DNA molecules pair and exchange DNA segments. The mechanism involves breakage and reunion of paired segments. Two of the proteins involved, a single-stranded binding (SSB) protein and the RecA protein, are shown. The other proteins involved are not shown. The diagram is not to scale: Pairing can occur over hundreds or thousands of bases. Resolution occurs by cutting and ligating the cross-linked DNA molecules. Note that there are two possible outcomes, depending on which strands are cut during the resolution process. In one outcome the recombinant molecules have patches, whereas in the other the two parental molecules appear to have been cut and then spliced together.