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Restriction enzyme scissor cut

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BglII is a type-II restriction endonuclease (RE) that recognizes and cleaves the DNA sequence AGACTC. The crystal structure of *Bgl*II bound to DNA resembles other REs, with a major α/β core domain containing a central β sheet flanked by α helices. In the February Nature Structural Biology, Lukacs *et al*. describe the structure of the free *Bgl*II enzyme, which provides an understanding of how DNA enters the binding cleft for hydrolysis (*Nat Struct Biol* 2001, **8:**126-130). It seems, from the free-enzyme structure, that an unusual scissor-like motion allows the entry of DNA. The individual monomers swing out by as much as 50°, like scissor blades, producing significant effects on the tertiary and quaternary structure. The free-*Bgl*II structure offers a new model for understanding protein-DNA recognition events.

References

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2. Understanding the immutability of restriction enzymes: crystal structure of BglII and its DNA substrate at 1.5 A resolution.

3. *Nature Structural Biology*, [http://structbio.nature.com]