

mechanism in cleaving a phosphodiester bond is given by the almost perfect fit of the DNA in the superimposed structures into the active site of the *Serratia* nuclease: the phosphate residue to be attacked and the adjacent phosphates are within 3 Å of Arg 57, Arg 87 and Arg 131, which are important for the activity of *Serratia* nuclease⁷.

In conclusion, a comparison of the structures of I-PpoI and *Serratia* nuclease, together with the results of mechanistic studies, allows a mechanism of phosphodiester bond hydrolysis for I-PpoI to be put forward and suggests how the substrate is bound by the *Serratia* nuclease.

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1. Flick, K.E., Jurica, M.S., Monnat, R.J., Jr. & Stoddard, B.L. *Nature* **394**, 96–101 (1998).
2. Miller, M.D., Tanner, J., Alpaugh, M., Benedik, M.J. & Krause, K.L. *Nature Struct. Biol.* **1**, 461–468 (1994).
3. Lunin, V.Y. et al. *FEBS Lett.* **412**, 217–22 (1997).
4. Johansen, S., Embley, T.M., Willassen, N.P. *Nucleic Acids Res.* **21**, 4405 (1993).
5. Meiss, G., Franke, I., Gimadutdinow, O., Urbanke, C. & Pingoud, A. *Eur. J. Biochem.* **251**, 924–934 (1998).
6. Friedhoff, P., Gimadutdinow, O. & Pingoud, A. *Nucleic Acids Res.* **22**, 3280–3287 (1994).
7. Friedhoff, P. et al. *Nucleic Acids Res.* **24**, 2632–2639 (1996).
8. Kolmes, B., Franke, I., Friedhoff, P. & Pingoud, A. *FEBS Lett.* **397**, 343–346 (1996).
9. Wittmayer, P.K. & Raines, R.T. *Biochemistry* **35**, 1076–1083 (1996).

history

Praise for profiles

The National Library of Medicine recently launched a new web site entitled 'Profiles in Science' (<http://www.profiles.nlm.nih.gov/>) as an electronic museum dedicated to important scientific accomplishments of the 20th century. The site presents archives relating to the research of prominent biomedical scientists, and the presentation is a multimedia one. The first exhibit focuses on the life

and work of Oswald Theodore Avery (1877–1955), a Rockefeller Institute scientist who, along with Maclyn McCarty and Colin MacLeod, first identified DNA as the genetic material. Published and unpublished materials are included, such as pages from lab notebooks, a letter from Avery to his brother and a draft of the famous article that appeared in the *Journal of Experimental Medicine* in 1944.

Numerous photographs are presented, and there are even interviews (in the form of short movies) with McCarty and Joshua Lederberg, who discusses how Avery influenced him. Unlike those who determined the structure of DNA, Avery never won a Nobel prize for his work, despite the fact that his contribution served as the foundation for all of molecular biology. This site is an overdue tribute to his life and work. Hopefully, more exhibits of equal depth and quality will follow, to solidify the 'Profiles in Science' site as a welcome detour into the pages of history. Tracy Smith