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## Radiodurans' rings and radioresistance

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The bacterium *Deinococcus radiodurans* has the remarkable ability to resist doses of ionising radiation many times higher than those that kill other organisms. In the January 10 *Science* Smadar Levin-Zaidman and colleagues at the [Weizmann Institute of Science](#), Israel, report that the *D. radiodurans* genome has an unusual ring-like structure that may account for its radioresistance by restricting the diffusion of radiation-generated free DNA ends (*Science* 2003, **299**:254-256). Scanning electron microscopy revealed that *D. radiodurans* cells have a tetrad morphology with each quarter containing equal amounts of DNA (each contains a single copy of the bacterial genome). This compartmentalization suggests that DNA repair after radiation does not involve homologous recombination. The bacterial nucleoids adopt a toroidal morphology that presumably dictates a rigid structure, facilitating template-independent, error-free, end-joining of DNA breaks.

## References

1. Resistance to radiation.
2. *Science*, [<http://www.sciencemag.org>]
3. Weizmann Institute of Science , [<http://www.weizmann.ac.il>]