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Extracellular DNA

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Bacteria can organize into structured communities, called **biofilms**, that protect them from antibiotics and from immune attack by the host. The biofilms are embedded in a matrix containing a complex mixture of macromolecules including exopolysaccharides and proteins. In the February 22 **Science**, Whitchurch *et al.* report that extracellular DNA is a major component of the biofilms of *Pseudomonas aeruginosa* (*Science* 2002, **295**:1487). They demonstrate that adding DNase I to *P. aeruginosa* cultures inhibited biofilm formation and bacterial colonization. The enzyme could also dissolve established biofilms. The extracellular DNA is thought to be derived from membrane vesicles. Whitchurch *et al.* propose that DNase I treatment may be beneficial to prevent biofilm formation in infection-linked diseases such as cystic fibrosis.

References

1. Bacterial biofilms: a common cause of persistent infections.
2. *Science*, [<http://www.sciencemag.org>]