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Spider's web

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Spiders (*Araneae*) spin their webs from silk fibers of fibroin proteins that are stored in specialized abdominal glands. It is unclear whether the mechanical characteristics of the silk fibers are due to the spinning mechanisms of the spiders or the sequence of the fibroin proteins. In the March 30 *Science*, Gatesy *et al.* report that sequence motifs within *Araneae* fibroins are highly conserved throughout evolution, implying that the sequences themselves are important (*Science* 2001, **291**:2603-2605). They constructed cDNA libraries of silk glands from five spider genera and sequenced a large number of fibroin genes. Their comparative analysis provides evidence for evolutionary conservation of simple repetitive sequence motifs. Protein sequence appears to contribute together with spinning talents to create high-performance silks and webs.

References

1. *Araneae*, [<http://www.ucmp.berkeley.edu/arthropoda/arachnida/araneae.html>]
2. *Science*, [<http://www.sciencemag.org>]
3. Evidence from flagelliform silk cDNA for the structural basis of elasticity and modular nature of spider silks.