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Mighty splicing machine

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The **spliceosome** is a macromolecular machine, containing five small nuclear RNAs and a number of proteins, that is responsible for the excision of introns from pre-mRNA species. In the September 12 **Nature**, Zhou *et al.* report a complete proteomic analysis of all the polypeptide components of the spliceosome complex (*Nature* 2002, **419**:182-185). They assembled spliceosomes on adenovirus major late pre-mRNA (AdML-M3), which contains three hairpins and can be affinity-purified using a bacteriophage coat protein fused to maltose-binding protein (MS2-MBP fusion protein). Zhou *et al.* demonstrate that the intact complex is highly purified and functional. They examined the protein components by liquid chromatography tandem mass spectrometry (LC-MS/MS) and found around 145 distinct polypeptides; including 88 known splicing-associated proteins. The rest of the proteins had not been previously linked to splicing and include several involved in regulating gene expression, transcription and mRNA export.

References

1. Pre-mRNA splicing in the new millennium.
2. *Nature*, [<http://www.nature.com>]