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## Gene therapy with histones

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William Wells

Email: wells@biotext.com

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In the October 10 [Proceedings of the National Academy of Sciences](#), Balicki *et al.* report that histone H2A can be used to increase the efficacy of gene therapy (*Proc Natl Acad Sci USA* 2000, **97**:11500-11504). Histone H2A has been used in the past to coat DNA prior to transfection. It appears to work both because of its positive charge and some other property, which is presumed to be its nuclear-localizing activity. Balicki *et al.* use H2A for *in vitro* delivery of the gene for interleukin-2 (IL-2) to murine neuroblastoma cells. IL-2 can increase the immunogenicity of tumor cells so that the host immune system attacks not only the re-introduced cells, but distant tumor masses. Histone H2A outperforms a commercially available transfectant called Superfect by inducing larger amounts of murine interferon release, and causing rejection of primary tumors rather than a partial reduction in tumor growth.

## References

1. *Proceedings of the National Academy of Sciences*, [<http://www.pnas.org>]
2. Histone H2A significantly enhances *in vitro* DNA transfection.
3. Induced immunity by expression of interleukin-2 or GM-CSF gene in murine neuroblastoma cells can generate antitumor response to established tumors.