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Horizontal transfer of tumorigenesis

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Jonathan B Weitzman

Email: jonathanweitzman@hotmail.com

Apoptotic bodies are rapidly cleared in the body by [phagocytosis](#). In the May 22 [Proceedings of the National Academy of Sciences](#), Bergsmedh *et al.* provide evidence that the uptake of apoptotic bodies can deliver oncogenes to the phagocytotic host cell (*Proc Natl Acad Sci USA* 2001, **98**:6407-6411). They could detect the [horizontal transfer](#) of H-rasV12 or c-myc oncogenes from dying, transformed rat fibroblast cells to recipient mouse fibroblasts. DNA transfer was detected by PCR analysis and fluorescent *in situ* hybridization staining. Transferred DNA caused the formation of foci and of tumorigenic cell lines. The authors defined the conditions necessary for transferring tumorigenesis. The recipient phagocytic cell required a mutated *p53* gene, and long-term propagation of the transferred DNA was only observed when it conferred a selective advantage. It remains to be determined whether horizontal genetic transfer plays a role in tumour progression *in vivo*.

References

1. Phagocytosis and clearance of apoptotic cells is mediated by MER.
2. *Proceedings of the National Academy of Sciences*, [<http://www.pnas.org>]
3. Horizontal transfer of DNA by the uptake of apoptotic bodies.