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Phosphatase in metastasis

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Metastasis poses the greatest threat to the survival of cancer patients, yet the molecular events underlying this complex process are unclear. In the October 11 ScienceXpress, Saurabh Saha and colleagues at the Johns Hopkins Medical Institutions, Baltimore, USA, describe serial analysis of gene expression (SAGE) to identify genes involved in liver metastasis in colorectal cancer patients (*ScienceXpress* 10.1126/science.1065817). They developed an immunoaffinity fractionation procedure to purify colorectal epithelial cells away from contaminating hepatic cells. They then analysed 95,000 tags, representing over 17,000 transcripts, and identified 144 transcripts upregulated in metastatic cells. Experimental verification showed that one gene, *PRL-3*, was consistently overexpressed in metastases. *PRL-3* encodes a small tyrosine phosphatase located at the cell membrane and in the nucleus. The gene mapped to chromosome 8q24.3 and was found to be amplified in some colorectal tumours; the gene was found in the Celera sequence database but not within the public Human Genome Project sequence. The authors note that enzymes upregulated in cancer cells make good targets for drug discovery programmes.

References

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