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Autocrine loops

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Misregulation of autocrine signalling loops may contribute to cancer phenotypes. In the Advanced Online Publication of Nature Genetics, Graeber and Eisenberg of the Howard Hughes Medical Institute and the University of California, Los Angeles describe a computer-based strategy to identify receptor-ligand pairs and autocrine loops in large datasets (29 October 2001, DOI: 10.1038/ng755). They compiled a Database of Ligand-Receptor Partners (DLRP) that is based on the published literature and contains 452 ligand-receptor pairs. They then used this information to screen several published datasets of microarray expression profiling in cancer samples, and measured the correlation coefficient between ligand and receptor expression profiles. Graeber and Eisenberg identified ligand-receptor partners previously implicated in autocrine signalling (for example, inerleukin (IL) 10 and its receptor and tumor necrosis factor (TNF) and its receptors), and propose some new effectors (including several chemokines, such as CCL4 and the CCR5 receptor). These results await experimental confirmation that this strategy can predict receptor-ligand pairs that are relevant to cancer.

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