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Modulation by matrix

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Interactions of cells with the extracellular matrix (ECM), via the integrin receptors, modulate cell proliferation, survival and differentiation. In the April 10 Proceedings of the National Academy of Sciences, Yarwood and Woodgett describe how the make up of the ECM can affect the cellular response to growth-factor stimulation (*Proc Natl Acad Sci USA* 2001, **98:**4472-4477). They used cDNA microarrays to analyse over 1,718 human genes and measure changes in gene expression when cells were plated on different substrates (either poly-L-lysine, fibronectin or laminin) together with epidermal growth factor. Yarwood and Woodgett were able to define clusters of genes that are influenced by different combinations of ECM and growth factor. While some genes were stimulated by EGF on any substrate, others were specifically regulated by the ECM component. Some groups of genes were even upregulated by EGF when cells were plated on fibronectin, but downregulated on laminin. Hence, gene expression profiling can define the molecular mechanisms by which the ECM modulates the response to growth-factor signalling.

References

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