

PublisherInfo		
PublisherName	:	BioMed Central
PublisherLocation	:	London
PublisherImprintName	:	BioMed Central

## Shaping gene expression

ArticleInfo		
ArticleID	:	4406
ArticleDOI	:	10.1186/gb-spotlight-20020220-01
ArticleCitationID	:	spotlight-20020220-01
ArticleSequenceNumber	:	72
ArticleCategory	:	Research news
ArticleFirstPage	:	1
ArticleLastPage	:	2
ArticleHistory	:	RegistrationDate : 2002-2-20 OnlineDate : 2002-2-20
ArticleCopyright	:	BioMed Central Ltd2002
ArticleGrants	:	
ArticleContext	:	130593311

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Cell shape has a dramatic influence on the organization of the cell and its genetic program. In the February 19 [Proceedings of the National Academy of Sciences](#), Thomas *et al.* describe a method to investigate the link between nuclear shape and gene expression (*Proc Natl Acad Sci USA* 2002, **99**:1972-1977). They studied primary osteogenic cells and measured changes in the expression of genes encoding differentiation markers, such as type I collagen and osteocalcin. They controlled cell shape using a microfabricated substrate with [adhesive islands](#) of defined shape and size, and combined this with sensitive reverse-transcription *in situ* PCR to measure changes in mRNA levels in individual cells. Thomas *et al.* could define optimal cell and nuclear shapes that resulted in maximal gene expression. This system will be useful in studies aiming to explore the connection between the cytoskeleton, the nuclear matrix and transcriptional regulation.

## References

1. Role of cell shape in growth control.
2. *Proceedings of the National Academy of Sciences*, [<http://www.pnas.org>]
3. Geometric control of cell life and death.