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

Lymphocyte signaling

ArticleInfo		
ArticleID	:	4225
ArticleDOI	:	10.1186/gb-spotlight-20011015-02
ArticleCitationID	:	spotlight-20011015-02
ArticleSequenceNumber	:	296
ArticleCategory	:	Research news
ArticleFirstPage	:	1
ArticleLastPage	:	2
ArticleHistory	:	RegistrationDate : 2001–10–15 OnlineDate : 2001–10–15
ArticleCopyright	:	BioMed Central Ltd2001
ArticleGrants	:	
ArticleContext	:	130592211

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During T-lymphocyte activation, signals from a number of cell-surface receptors must be integrated to ensure the appropriate genetic response. Non-dividing, primary T lymphocytes are notoriously difficult to transfect, presenting an experimental limitation to dissecting signaling mechanisms. In the October issue of Nature Medicine, Michael Bell and researchers from the Mayo Clinic in Rochester, Minnesota, describe an efficient method for introducing DNA into non-dividing lymphocytes, so as to analyze gene regulation (*Nature Medicine* 2001, **7:**1155-1158). They optimized the conditions for transiently transfecting mouse thymocytes and human T cells. Using electroporation they achieved over 50% transfection rates while maintaining high cell viability; they then demonstrated that this transfection technology could be used to examine the effects of MAP kinase signaling. Using multiparameter flow cytometry, Bell *et al.*showed that constitutively active MEK-1 MAP kinase induced expression of the anti-apoptotic protein Bcl-2 in double-positive (CD4+ CD8+) mouse thymocytes.

References

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