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Cytokine gene regulation by NFAT

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Cooperation between nuclear factor of activated T cells (NFAT) and the Fos/Jun transcription factors is central to integrating converging signals upon lymphocyte activation. In the 1 September EMBO Journal Macian *et al*. (EMBO Journal 2000, 19:4783-4795) engineered mutants of NFAT1 that no longer interact with Fos/Jun dimers, but still bind DNA and activate transcription. These proved to be powerful tools for defining the need for NFAT-Fos-Jun cooperation in regulating cytokine gene expression. The target genes for NFAT can be divided into those that absolutely require cooperation for activation (e.g. the genes for interleukin (IL)-2, GM-CSF, IL-3, IL-4 and FasL), and those that are induced by NFAT alone (e.g. TNFalpha and IL-13). Cooperation is also functionally important for activation-induced cell death of lymphocytes. These results have therapeutic implications for the development of more specific immunosuppressive drugs.

References

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