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## Kinase mutations in cancer

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The [RAS-RAF pathway](#) regulates mitogenic signal transduction, and oncogenic *RAS* mutations are found in 15% of human cancers. In an Advanced Online Publication in [Nature](#), Davies *et al.* describe results of a systematic genome-wide screen for mutations of genes in this pathway (9 June 2001, DOI:10.1038/nature00766). They found examples of somatic substitution mutations in the human *BRAF* gene in cancer cells. Analysis of over 500 cancer cell lines revealed a high mutation frequency in malignant melanomas, as well as mutations in a wide range of other tumor types. Mutant forms of the BRAF protein had elevated kinase activity, resulting in signalling and increased transforming capacity. Furthermore, Davies *et al.* found cancer cell lines that contain oncogenic mutations in both the *RAS* and *BRAF* genes, suggesting that tandem-activating mutations in more than one component of a signalling pathway may contribute to tumorigenesis.

## References

1. Control of the ERK MAP kinase cascade by Ras and Raf
2. *Nature*, [<http://www.nature.com>]