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Tumor suppression by FEZ

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The [FEZ1/LZTS1](#) gene maps to chromosome 8p22, a region lost in many tumors. In the Early Edition of the [Proceedings of the National Academy of Sciences](#), Hideshi Ishii and colleagues, from [Thomas Jefferson University](#), Philadelphia, describe a mechanism for [FEZ1-mediated growth suppression](#). They created an inducible gene-expression system in MCF7 breast cancer cells, in which *FEZ1* expression was controlled by tetracycline. *FEZ1* expression inhibited cell growth *in vitro* (at the S-phase to G2/M transition in the cell cycle) and tumor formation *in vivo*. Ishii *et al.* demonstrated that the FEZ1 protein is phosphorylated by cAMP-dependent protein kinase (PKA) during the cell cycle. Two-hybrid protein-protein interaction analysis in yeast showed that FEZ1 interacts with elongation factor EF1 γ . Also, FEZ1 is associated with microtubule components and with the p34cdc2 mitotic kinase. FEZ1 appears to suppress tumor growth by regulating microtubule dynamics and progression through mitosis.

References

1. The *FEZ1* gene at chromosome 8p22 encodes a leucine-zipper protein, and its expression is altered in multiple human tumors.
2. *Proceedings of the National Academy of Sciences* , [<http://www.pnas.org>]
3. Thomas Jefferson University , [<http://www.tju.edu>]
4. *FEZ1/LZTS1* gene at 8p22 suppresses cancer cell growth and regulates mitosis., [<http://www.pnas.org/cgi/content/abstract/181222898v1>]