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Fundamental differences between human and mouse skin, and differences in cellular transformation, pose a challenge to the development of useful models for studying skin diseases and malignancies. In the February 6 Nature Maya Dajee and colleagues at Stanford University School of Medicine in California describe experiments in normal epidermal cells that demonstrate the roles of oncogenic Ras and NFκB pathways in neoplastic transformation (*Nature* 2003, **421:**639-643). They used an animal model in which normal human skin is grafted onto the back of immunodeficient *scid* mice. They delivered a series of oncogenic genes to human keratinocytes using retroviral infections. Co-expression of oncogenic Ras and a stable repressor mutant of IκBα induced large neoplasms similar to human squamous cell carcinoma (SCC). The tumors displayed several SCC characteristics including an elevated mitotic index. Blocking NFκB activity appears to overcome Ras-induced growth arrest and induces the expression of high levels of the protein kinase CDK4. Dajee *et al.* also demonstrate the importance of the human integrin $\alpha_6\beta_4$ in the skin tumorigenesis process.

References

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