Horizontal transmission of malignancy by cell-cell fusion.

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**Abstract**

Introduction: The crosstalk between tumor and stromal cells has become an increasing important subject of the biology of oncogenesis, also involving new therapy paradigms for treating tumor-reactive host cells and vasculature. Areas covered: This article describes the long-term propagation in hamsters of a human glioblastoma which was derived from the in-vivo fusion of the human tumor cells with hamster stromal cells. The hybrid tumor cells retained at least seven human genes, of which three were able to translate their protein products during serial passages in vitro and in vivo, as well as features of the original tumor's histological appearance. This heterospecific fusion of cancer and normal host stromal cells is discussed as a mechanism for the horizontal transmission of malignancy, which may be a more common phenomenon in human cancer than appreciated previously. Expert opinion: Cell-cell fusion in vivo is one of several mechanisms by which genetic information can be transmitted from tumor to host cells, resulting in new and different (more aggressive) tumor cell populations.

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