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# Cancer stem cells: The cause or cure for cancer

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Cancer stem cells (CSCs) have been objects of concerted study since their recognition in 1994. The ability of these cancer stem cells to initiate tumors and their inherent resistance to conventional therapeutics has become a major focus of contemporary cancer studies. Cancer stem cells (CSCs) represent a distinct subpopulation of self-renewing oncogenic cells that have DNA-repair capacity and enhanced expression of ABC efflux transporters, which is responsible for these CSCs thriving even in the presence of chemotherapeutic agents. Several *in vitro* assays have been used to identify stem cells, including sphere assays, serial colony-forming unit (CFU) assays (replating assays), and label-retention assays. Targeted CSC-toxic methods are being developed, by identifying their selective markers. Some of the latest therapeutic approaches based on CSCs include blocking signalling pathways, targeting the CSCs microenvironment or CSC markers, drug-efflux pumps inhibitors, and targeting CSCs by manipulation of miRNAs and siRNAs. The use of these CSC specific therapies along with the traditional chemotherapy techniques can act as a promising weapon against cancer relapse and metastasis.

## Biography

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