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Volume 1, Issue 4, 11 October 2007, Pages 389-402

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Article

Colon Cancer Stem Cells Dictate Tumor Growth and Resist Cell Death by Production of Interleukin-4

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Referred to by: [Chemotherapy and Cancer Stem Cells](#)

Cell Stem Cell, Volume 1, Issue 4, 11 October 2007, Pages 353-355
 Jeremy N. Rich, Shideng Bao
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Summary

A novel paradigm in tumor biology suggests that cancer growth is driven by stem-like cells within a tumor. Here, we describe the identification and

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characterization of such cells from colon carcinomas using the stem cell marker CD133 that accounts around 2% of the cells in human colon cancer. The CD133⁺ cells grow in vitro as undifferentiated tumor spheroids, and they are both necessary and sufficient to initiate tumor growth in immunodeficient mice. Xenografts resemble the original human tumor maintaining the rare subpopulation of tumorigenic CD133⁺ cells. Further analysis revealed that the CD133⁺ cells produce and utilize IL-4 to protect themselves from apoptosis. Consistently, treatment with IL-4R* antagonist or anti-IL-4 neutralizing antibody strongly enhances the antitumor efficacy of standard chemotherapeutic drugs through selective sensitization of CD133⁺ cells. Our data suggest that colon tumor growth is dictated by stem-like cells that are treatment resistant due to the autocrine production of IL-4.

Author Keywords: CELLCYCLE; STEMCELL

Article Outline

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Supplemental Data

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