

Cell cycle-dependent variation of a CD133 epitope in human embryonic stem cell, colon cancer, and melanoma cell lines.

Journal: Cancer Res

Publication Year: 2008

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PubMed link: 18829544

Funding Grants: Trophoblast differentiation of human ES cells. , Burnham Institute CIRM Stem Cell Training Grant (Type II)

Public Summary:

Scientific Abstract:

CD133 (Prominin1) is a pentaspan transmembrane glycoprotein expressed in several stem cell populations and cancers. Reactivity with an antibody (AC133) to a glycosylated form of CD133 has been widely used for the enrichment of cells with tumor-initiating activity in xenograph transplantation assays. We have found by fluorescence-activated cell sorting that increased AC133 reactivity in human embryonic stem cells, colon cancer, and melanoma cells is correlated with increased DNA content and, reciprocally, that the least reactive cells are in the G(1)-G(0) portion of the cell cycle. Continued cultivation of cells sorted on the basis of high and low AC133 reactivity results in a normalization of the cell reactivity profiles, indicating that cells with low AC133 reactivity can generate highly reactive cells as they resume proliferation. The association of AC133 with actively cycling cells may contribute to the basis for enrichment for tumor-initiating activity.

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