On the abundance of EpCAM on cancer stem cells

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We found the Review by Visvader and Lindeman¹ on cancer stem cells (CSC) in solid tumours ([Cancer stem cells in solid tumours: accumulating evidence and unresolved questions](#), *Nature Rev. Cancer* **8**, 755–768 (2008)) stimulating, and particularly appreciate that epithelial cell adhesion molecule (EpCAM) was discussed as a marker for CSC. We nevertheless believe that [TABLE 1](#) of the Review underestimates the abundance of EpCAM on CSCs of solid tumours and may have benefited from inclusion of some additional data, which are described below.

A close look at materials and methods and supporting online materials of four references^{2–5} cited in the Review reveals that anti-EpCAM antibodies have been used for initial isolation of the investigated CSCs. It must therefore be assumed that all isolated and studied CSCs expressed EpCAM (provided that single cells were isolated with the antibody).

In their seminal paper on CSCs in breast cancer, Al-Hajj *et al.*² showed that the EpCAM⁺, CD44⁺, CD24[−], lineage[−] fraction of CSC had a >10-fold higher frequency of tumour-initiating cells than the EpCAM[−], CD44⁺, CD24[−], lineage[−] CSC fraction.

ESA (epithelial specific antigen) is a synonym for EpCAM, and should no longer be used⁶. In order to avoid confusion, the name EpCAM rather than ESA should also have used for pancreas CSC⁵ in [TABLE 1](#).

It is obvious that EpCAM is more frequently and widely expressed on CSCs than initially reported. As is the case for other CSC markers, EpCAM expression is not limited to CSCs. Its frequent expression

on CSCs from breast, colon, pancreas and prostate tumours is nevertheless remarkable. This may relate to its signalling function and mitotic activity through induction of proto-oncogene MYC and cyclins⁷. It is hoped that future research will shed light on a potential functional role of EpCAM in CSCs and support the use of EpCAM-directed therapeutic approaches for cancer therapy.

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Competing interests statement

The author declares [competing financial interests](#).