



Letter to the Editor

Re: Minja J. Pfeiffer, Jack A. Schalken. Stem Cell Characteristics in Prostate Cancer Cell Lines. Eur Urol 2010;57:246–55

I have read an interesting paper on stem cell characteristics in prostate cancer cell lines [1]. The authors analyzed the presence of stem cells within six prostate cancer cell lines: DU145, DuCaP, LAPC-4, 22Rv1, LNCaP, and PC-3.

It was found that only the DU145 cell line had a small fraction (0.01%) of CD133⁺ cells. No differences were detected between CD133⁺ and CD133⁻ cells in their capacity to form holoclones in vitro. The authors concluded that CD133 is not a marker for stem cells in prostate cancer cell lines. Alternatively, CD133 was established as a stem cell marker of normal prostate epithelium. CD133 was also regarded as a stem cell marker in primary cultures established from prostate tumor explants [2]. The results presented by Pfeiffer and Schalken are important but also confusing because they indicate the problem of instability in in vitro models (cell lines).

It was previously found that LNCaP cells derived from low- and high-passage numbers display divergent responses to androgens and retinoids [3]. It was proved that culture condition and passage number can change the genetic and phenotypic characteristic of cells lines [4]. It has to be emphasized that cross-contamination of cell lines is also often found (15%), and probably a higher percentage of contamination with other cells can be detected among popular cell lines like HeLa [5].

Can we rely on these models of immortal cell lines that are established in vitro? How removed are the immortal cell lines from tumor-derived primary cultures? Do these

immortal lines contain stem cells at all? It seems that we need time to answer.

Conflicts of interest: The author has nothing to disclose.

References

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