



European Association of Urology



Letter to the Editor

Reply to Tomasz Drewa's Letter to the Editor re: Udo Nagele, Sabine Maurer, Gerard Feil, et al. In Vitro Investigations of Tissue-Engineered Multilayered Urothelium Established from Bladder Washings. *Eur Urol* 2008;54:1414–22

In a letter to the editor relating to “In Vitro Investigations of Tissue-Engineered Multilayered Urothelium Established from Bladder Washings,” Drewa referred to the low proportion of successful cultures observed [1]. In this study, primary urothelial monolayer cultures were established in 55.2% of the bladder washing samples that were investigated [2]. In subsequent experiments, the success rate of primary urothelial cultures increased up to 69.2% when a modified bladder irrigation fluid was used [3]. Further, yet unpublished, technical modifications significantly increased previous results.

In stratified epithelia, p63 is essential for both the commitment and the differentiation of epithelial stem cells during tissue morphogenesis [4]. In native urothelial tissues, p63 is found in all cell layers, with the highest expression in the basal cells [5]. In monolayered urothelial cultures established from bladder washings, p63 is partially expressed, as it is in cultures established from tissue biopsies from the lower urinary tract. We agree with Drewa that the total number of p63 positive “young cells” with high proliferative potential might be lower in urothelial cultures from the superficial layers, which are usually raised from bladder washings, whereas in cultures established from tissue biopsies, the whole urothelial layer can be used for cell culture. The harvest of native urothelium requires open or endoscopic surgery. Cell harvesting by the bladder-washing procedure is practically noninvasive; thus, irrigation of the bladder is both less traumatic and less complicated than biopsy. In the

patients in our study, complications were not observed.

Nonetheless, the key issue of whether urothelial cells isolated from bladder washings have the potential to be used for regeneration of the urinary tract is not answered yet and will be given by application of tissue-engineered urothelial sheets generated from bladder washings in animal models.

Conflicts of interest: The author has nothing to disclose.

References

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October 8, 2008
Published online on October 18, 2008