Letter to the Editor regarding “Trapping cells on a stretchable microwell array for single-cell analysis”

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Received: 21 March 2013 / Accepted: 15 May 2013 / Published online: 7 June 2013
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Dear Sir,

In the introduction to their article published in your journal [1] as well as in the subsequent erratum [2], Wang et al. refer to the microwell format for trapping and analyzing nonadherent cells on a chip, the LiveCell™ array (LCA). As mentioned in the article, the LCA method is indeed based on our work [3]; however, and in contrast to what was mistakenly stated in the article and might be misconstrued from the erratum, we would like to point out that distribution of the LCA has never been discontinued. In fact, the LCA continues to be one of the very few commercial products available on the market for high-content analysis of nonadherent live cells via static cytometry, with single-cell resolution.

The nonadherent cell group is one of the major cell families (primary blood cells, circulating tumor cells, hematopoietic stem cells, oocyte and sperm cells, blood cell lines, adipocytes), and is of interest to many researchers, some of whom seek a solution for investigation of nonadherent, nontethered cells in a quantitative mode of static cytometry. The following information is complementary to that given in [1] and aims to clarify statements made in the article which might be misconstrued with regard to the LCA and associated procedures, as well as to any present by-products and/or future products based on the LCA concept.

Among all cell-retaining techniques, the microwell array structure is the simplest and most straightforward approach, which keeps to the concept of putting noninterfering walls around each cell in order to physically separate them and to

constrain them within their location without tethering. Within the LCA picoliter well array, nonadherent cells are individually maintained without tethering, each in its own picowell, making long-term measurement possible during various manipulations, such as medium exchange, multiple staining, washing, and drug treatment.

Regarding the determination made by Wang et al. with regard to “fluid exchange characteristics of the LCA,” various stages of the procedures and related performances are demonstrated in three homemade movie clips [4]. Briefly, Parts 1 and 2 are macroviews of liquid flow and liquid exchange within the LCA chamber, respectively. Part 3 demonstrates cell loading and solution exchange within the LCA.

References

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