

Validation of Washed Cell Counter Slides

Background

Countess-II™ automated cell counter works both with plastic, single use slides and a reusable glass slide. Single use slides are costly and become a biohazardous plastic waste after single-use, on the other hand glass reusable slides require tedious manual cleaning steps and always carry a risk of cross-contamination thus inaccurate cell counts. Moreover, the reusable slides expose the user to biohazardous waste during the cleaning procedure.

iWash® Slide cleaner is designed to wash plastic slides safely and make them reusable without affecting the accuracy of the cell counting. Each slide can be washed multiple times.

In this study, we test the washed versus brand new plastic slides for cell counting accuracy as well as how many times each plastic slide can be washed without affecting the performance of the slide.

Method:

In this test, we performed a side-by-side comparison of washed slides versus brand new slides. First we obtained the images of brand new, loaded and washed slides (Figure1). Then the washed slides were loaded with cell solution (stained with 50/50 with trypan blue) and washed with iWash® for five (5) consecutive times before the next cell counting was obtained. At each comparison between washed and brand-new slides a new cell solution was prepared and the same cell solution was used to load both washed and brand-new slides. This ensured that the washed and new slides were loaded with exactly the same cell solution and the cell death caused by the prolonged storage of the cells in a trypan blue solution did not cause any experimental variations between the first readings and the last readings during the experiment time. Used slides were washed up to 20 times and at the end of every fifth consecutive wash a cell count was carried out.

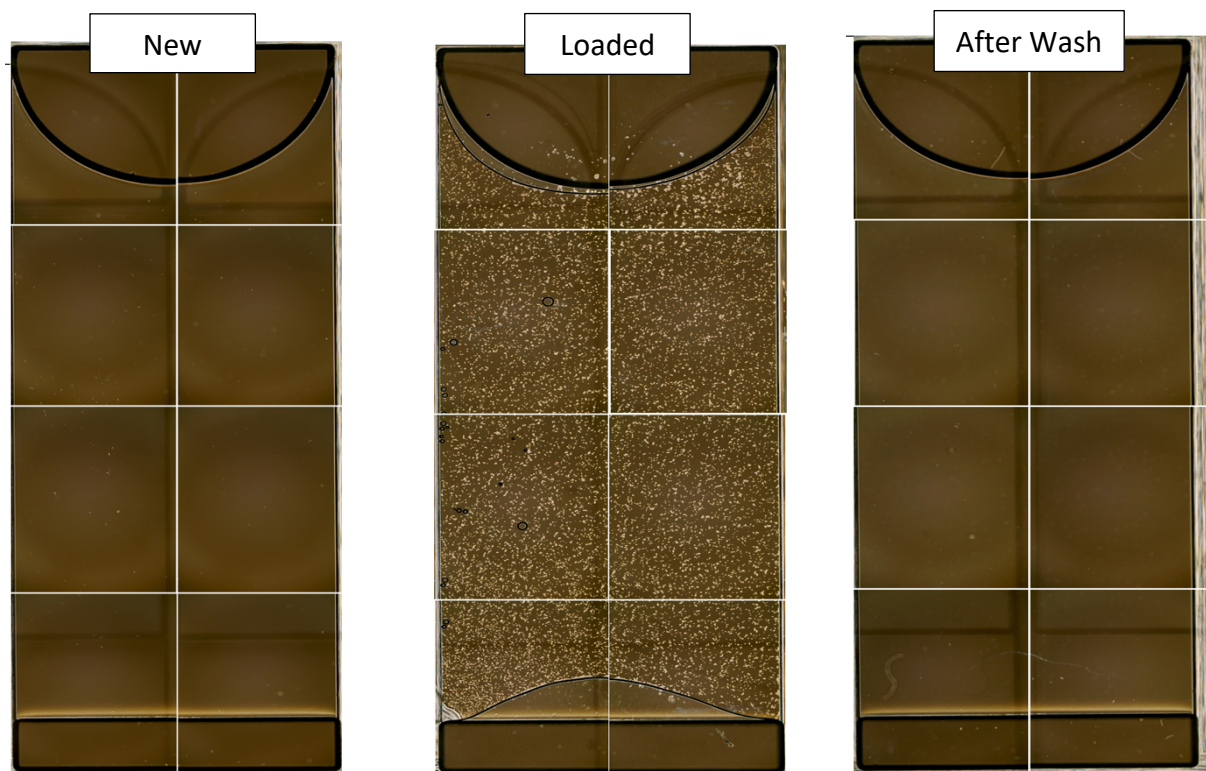


Figure1: The images of the disposable slide when brand new, after loading and after washing has been obtained. Washing can successfully remove all of the cells and debris from the slide.

New versus washed slide comparison

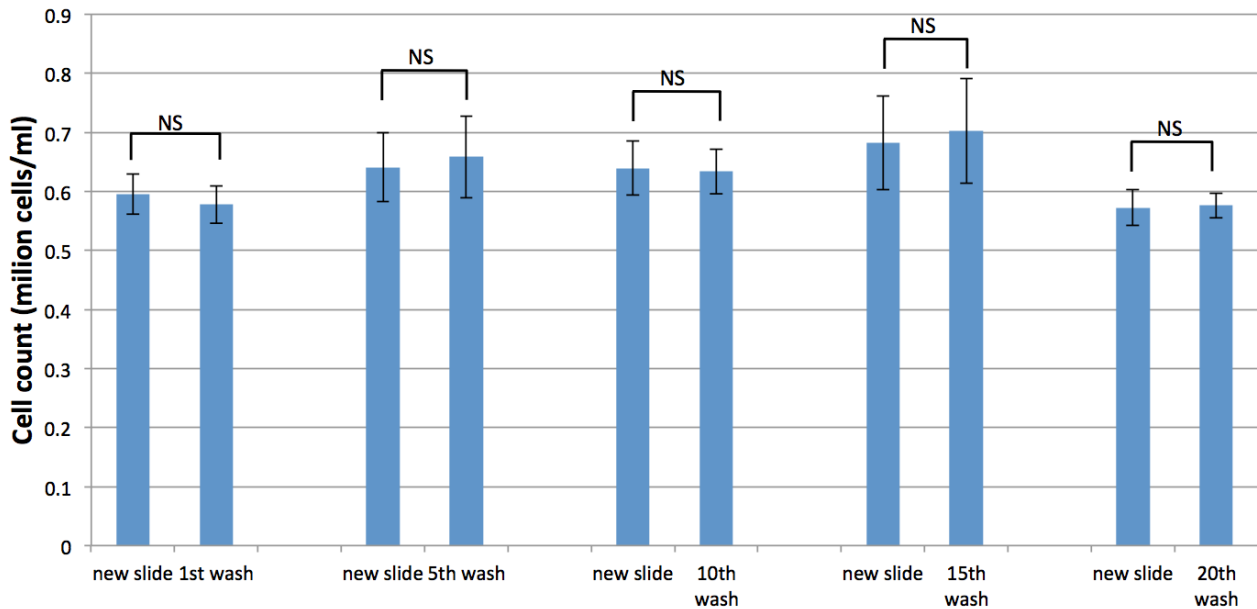


Figure 2: Slides have been loaded with cells and washed up to 20 times. After each 5 consecutive load and wash, the washed slides and brand new slides were loaded with the same cell solution and cells counted using Invitrogen's CountessII™ cell counter. Results show no significant difference between the brand new and washed slides even after 20 washes. Each bar represents average of four readings.