Evaluation of cells integrity using different fixation time by scanning electron microscopy

ABSTRACT

he study aims to evaluate the integrity and structural changes of two intestinal cells adhered with Lactobacillus sp. in different fixation time. HT-29 and CCD-18Co intestinal cells with Lactobacillus sp. were fixed with 2.5% glutaraldehyde in 0.1 M phosphate buffer for two, four, six and 12 hours at room temperature. Our study revealed that the different fixation time affects and change the integrity, viability and durability of cells. HT-29 cells structure remain intact even after 12 hours fixation while CCD-18Co cells remain intact at two and four hour fixation time whereas at six hour cells also remain intact except cilia structure not clearly seen on surface of the cell. However, at 12 hours fixation, CCD-18Co cells were completely broken and degraded. Lactobacillus sp. cells remains stable in both cell lines, showing that the bacteria cells were unaffected with various fixation time. The present study suggested fixation time is important as an aware different cell has different endurance and structural integrity.

Keyword: Scanning electron microscopy; HT-29; CCD-18Co; Lactobacillus