

Digital Optical Cytology: The Physical Cell Morphology and its Intercellular Union

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Received: May 24, 2019

Abstract

This study refers to what was found as a consequence of processing an image of retinal OCT, and especially with reference to the pigmentary epithelium, through sequencing, deconvolution and filtering of images of the pigment epithelium, adding the adhesion mechanisms and intercellular tension spaces. (Tensioactive intercellular phase).

The morphometric analysis through pixelography, pixelometry and pixeloarquitectura demonstrates in 2D the physical construction of the cells and their intercellular spaces, absolutely original images that are related to similar ones observed in other recent communications that we have made.

With deconvolution we perform a math operation to restore signals and degraded data by the physical processes of the tomography, correcting defocuses and noise by diffraction and photons.

The tissue in the study area was cut into small parts of no more than 4 to 6 cells, taking independent images and adding the results, achieving iterative algorithms such as maximum likelihood estimation in microscopy (Guedel).

Keywords: Physical; Cell

Introduction

There is a new paradigm in morphological image: it emerges from the intersection of physics, biology and informatics: information as the primary foundation of the universe we perceive and perhaps matter and energy as its representation or unfolding.

It is the fusion of physics with computer theory and genetics, a new understanding of what is the fundamental substrate of the universe: information are theoretical-informatic in origin, and this is a participatory university. The whole universe is then seen as a computer - a cosmic information-processing machine... When photons and electrons and other particles interact, what are they actually doing? Interchanging bits, pixels, transmitting quantum states, processing information. The laws of physics are algorithms.

However, the possibility of storing their own information, a unit, which is the pixel, makes it more accurate, dynamic and reliable. Quantum physics is the physics of the possibilities of change, management of unified fields of the four forces: gravity, electromagnetism and the strong and weak force of the atomic nucleus.

Einstein suggested in his theories, the existence of a field holding space-time transformations and mass - energy. This field is the pixel. In the different photos that we show, can be seen digital se-cuentiation of the retina tissue, detection technique based in sequencing images, obtained in our Digital Laboratory (Maimonides University).

Results

This image of physical cell are the definitive methods of physical-mechanical comprehension of the cellular activity of the retinal pigment epithelium and the maintenance of the interphase between cell and cell thereof. on the other hand its function of phagocytosis and its metabolic framework.

The observed images are produced by digital optical biopsy [1,5], that is, the sequencing of OCT images (optical coherence tomography), to cyto-histology by pixelography, pixelometry and pixeloarquitectura techniques [2-4,6-10].

Figure 1: Cones and rods and pigmentary epithelium pixel graphics view and your intercellular unión. Physical view of the coexist external segments with the pigmentary epithelium.

Figure 2 and 3: Pigmentary epithelium. Physical morphology of cells and intercellular spaces with different pseudoporous body and tens active peri cellular substance.

Figure 4 and 5: Physical function of phagocytosis , pseudopodia and interactive tensional bodies.

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Volume 2 Issue 6 July 2019

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