POSTER 16

# Cancer cells Migration: A Laser Scanning Confocal Microscopy Study

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**Introduction:** Nowadays, everyone or almost everyone has seen a love one lose the "battle" against cancer. Even worth than that is to closely watch the pain and agony that current anti-cancer therapies cause to the patient, with a known outcome...

Typical cancer therapies target the inhibition of the epidermal growth factor receptor, EGFR, a membrane receptor that plays a key role in regulating normal cellular processes such as cell survival, proliferation and migration. High expression of EGFR is generally associated with invasion, metastasis, late-stage disease, chemotherapy resistance, hormonal therapy resistance and poor general therapeutic outcome.

In order to develop new approaches for cancer treatment it is necessary to understand it is necessary to study the morphology of cancer cells when exposed to different stimuli. As in the case of this study human cancer lung cells were stimulated with EGF and its behavior was monitored over time using Laser scanning confocal microscope (Zeiss; LSM780).

**Results:** A set of human cancer lung cells were stimulated with its ligand EGF and another set of human cancer lung cells were not stimulated. The morphological changes were followed over time using confocal laser scanning microscopy (CLSM) with time elapse.

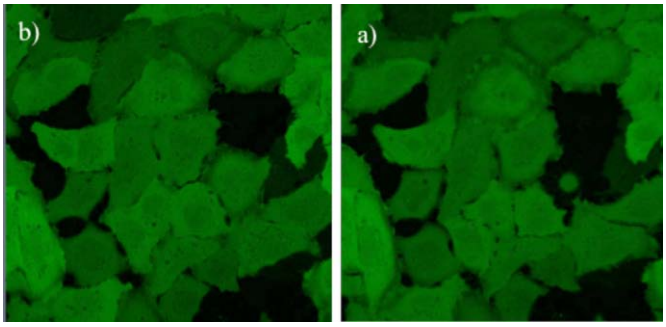


**Figure 1 – Human lung cancer cells stimulated with of EGF.**

As it can be seen on figure 1 the cancer cells morphology did significantly changed its phenotype. On the other hand when these cells were stimulated the morphological changes were significant as it can be seen on figure 2.

The addition of EGF to the culture medium induce significant morphological changes, namely of loss of cell-cell junctions (b), formation of filipodia (b) and tissue disaggregation (c).

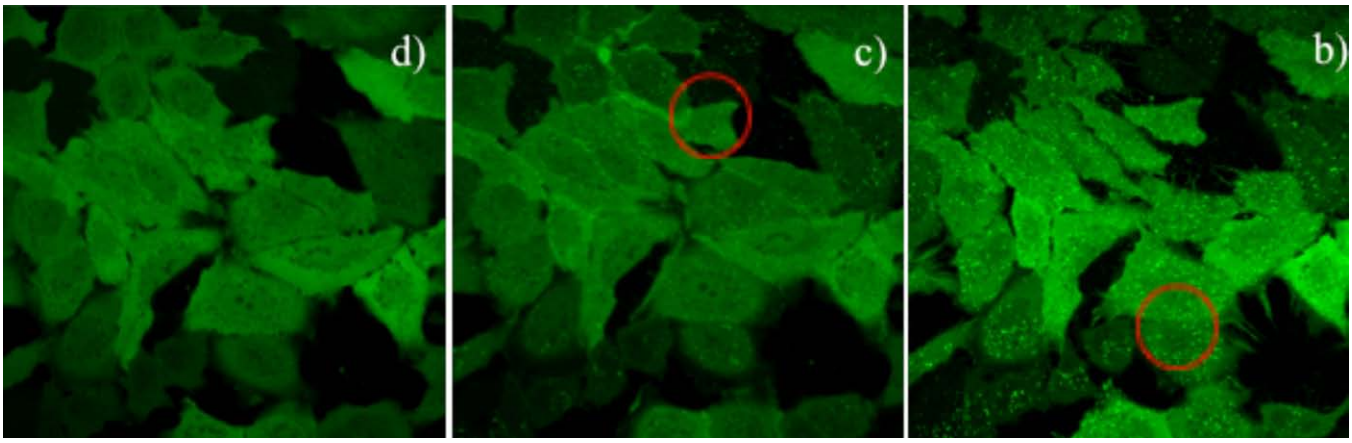


**Figure 2 – Human lung cancer cells stimulated with of EGF.**

Additionally, 3D reconstructions of singles cells were performed which allowed the confirmation of the internalization the EGFR dimers (data not shown).

With time elapse laser scanning confocal microscopy it was possible to follow of the events that lead to cell migration, loss of cell-cell junction, filipodia formation and migration in real time.