

Adhesion signaling and tumor cell migration : a systems microscopy approach towards understanding cancer metastasis

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Stellingen

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Adhesion signaling and tumor cell migration: a systems microscopy approach towards understanding cancer metastasis

- 1. Three-dimensional live cell microscopy-based techniques are indispensable to understand tumor cell migration and invasion (*This thesis*).
- 2. Cell fate (including proliferation and migration) is determined by focal adhesion dynamics (*This thesis*).
- 3. Local paxillin protein kinetics is a marker of matrix adhesion dynamics (*This thesis*).
- 4. In MTLn3 cells, the paxillin-JNK signalling axis regulates EGFR expression and, therefore, is a relevant target for breast cancer therapy (*This thesis*).
- 5. Paxillin phosphorylation regulates the assembly and structural organization of cellmatrix adhesions (Zaidel-Bar R et al., J Cell Sci, 2007).
- 6. To get a better insight into the mechanisms of metastasis formation, one needs first to understand the tumor cell autonomous mechanisms (Kopfstein L et al., Cell Mol Life Sci, 2006).
- 7. EGFR overexpression makes a more significant contribution to intravasation than growth so targeting the EGFR pathway is a relevant therapeutic approach to prevent metastasis formation during breast cancer progression (*This thesis* and Xue C et al., Cancer Res., 2006).
- 8. The emergence of dynamic live cell imaging technologies, applied in parallel with detailed image analysis solutions, provides new opportunities for enhanced understanding of mechanistic response and the wider physiological impact of putative anti-invasive therapeutics (N.O Carragher, Clin Exp Metastasis, 2009).
- 9. "Chaos.... allows the opportunity for creativity and growth." (Tom Barret)
- 10. Lorsqu'on emploie trop de temps à voyager on devient enfin étranger en son pays. (When one travels too much, one becomes a foreigner in his own country, Réné Descartes)
- 11. The concept of time is more flexible in the French culture than in the Dutch culture.
- 12. Delivering a baby feels similar to finishing a thesis, it is only faster.

Sylvia Le Dévédec, Leiden, February 2010