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## Understanding and fighting metastasis via dissection of the Core Invasive Machinery

**MetaFight** is a cooperative project funded by the European Commission as part of the 7th Framework Programme of Research and Development (FP7). Within this project 10 institutions/companies work together with the goal of understanding the dissemination and outgrowth of metastasis. This is done through systematic analysis of the **Core Invasive Machinery** contained within integrin-mediated ECM attachment structure. This indeed is a major player in the regulation of cell adhesion, migration and invasion in the early onset of tumor metastasis, as well as in the homing of metastatic cells to target organs.



Our strategy is based on the hypothesis that metastatic cells arise from molecular changes that alter the primary tumor architecture as well as the tumor microenvironment by reversible modulation of cell adhesion, onset of signalling pathways and acquisition of novel migratory and invasive capacities.

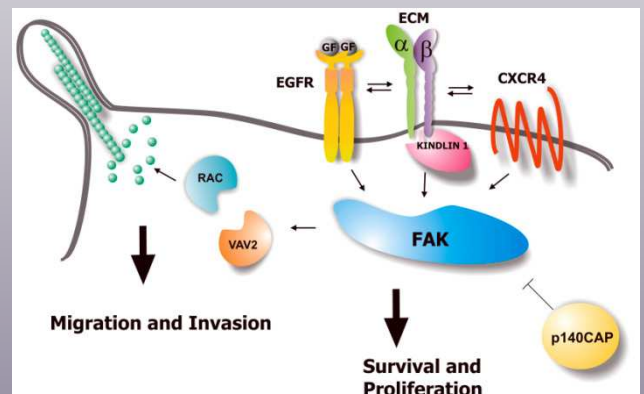


Research has shown that some major and well characterized components of the Core Invasive platform such as integrins and their proximal effectors are regulators of cancer progression and metastasis outgrowth in multiple ways. The signals initiated by ECM-integrin interactions are transduced into cells through the activation of a large and discretely localized **intracellular signalling network** which drives migration and invasion.



The Max Planck Institute of Biochemistry

Recent studies have demonstrated that in many tumor cells the active Core Invasive platform functions to promote cell motility, cell cycle progression and cell survival. For example, integrins can co-cluster with membrane receptor protein-tyrosine kinases such as EGFR and Her2 and also with chemokine receptors such as CXCR4. The first are known dominant oncogenes in transformed cells which trigger invasive properties of cancer cells and the second are involved in chemotactic response of tumor cells.



### Innovation

The MetaFight Consortium has the advantage of combining established expertise on adhesion receptor signaling and also the availability of unique tumor cell and cancer animal model systems. We will characterize known and novel components of the Core Invasive Machinery by innovative in-vivo non-invasive imaging techniques and state-of-the-art mass spectrometry technology. In addition the consortium will develop small molecule-based drugs and innovative ways for delivery of these substances. Basic research, translation and application will result in novel possibilities in metastasis therapeutic tools.

<http://www.metafight.eu>

For further information and contacting the partners, please visit the MetaFight website or send an email to: [metafight-po@arttic.fr](mailto:metafight-po@arttic.fr)

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