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Using insertional mutagenesis to identify breast cancer drivers and therapy resistance genes in mice = Insertie mutagenese voor het identificeren van genen betrokken bij de ontwikkeling van borsttumoren en therapie resistentie in muizen

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Propositions

Belonging to the thesis

'Using insertional mutagenesis to identify breast cancer drivers and therapy resistance genes in mice'

1. Studying the contribution of the increasing number of candidate cancer genes that are identified by large-scale sequencing of human tumors requires rapid and systematic *in vivo* validation in autochthonous tumor models. (*this thesis*)
2. Insertional mutagenesis screens in mice can uncover driver mutations and novel oncogenic pathways that are not readily identifiable in human tumors. (*this thesis*)
3. The oncogenicity of FGFR2 fusion proteins is determined by absence of the FGFR2 C-terminus rather than by presence of the fusion partner. (*this thesis*)
4. Tumors develop resistance to targeted drugs via various mechanisms, which can be uncovered in mouse models of human cancer. (*this thesis*)
5. Although transposon mutagenesis in mice is a powerful tool for identifying cancer drivers and drug resistance mechanisms, complementary approaches are necessary to capture the full spectrum of mutations. (*this thesis*)
6. To improve the success rates of targeted therapies in clinical trials, we need to optimize mouse cancer models and the design of preclinical drug studies to mimic anti-cancer treatments in human patients as closely as possible. (*this thesis*)
7. The development of personalized cancer treatments may be accelerated when information obtained in parallel trials in mice is rapidly translated to human clinical trials. (*John G. Clohessy & Pier Paolo Pandolfi, Nature Reviews Clinical Oncology, 2015*)
8. Phenotypes observed in mice never lie, we just need to understand the underlying biological mechanisms. (*this thesis*)
9. Coming together is a beginning; keeping together is progress; working together is success. (*Henry Ford*)
10. Motivation comes from working on things we care about. It also comes from working with people we care about. (*Sheryl Sandberg*)