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Title: The Desmoid Tumor Dependency Map

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Abstract

The success of cancer precision medicine is predicated on the ability to interpret the molecular information of a given tumor with regards to its underlying dependencies. While learning from the patient experience is critical to this goal, an insufficient number and diversity of cancer therapies are currently in use to fully realize this goal solely from clinical information. A complementary approach is the use of large-scale, systematic laboratory efforts to grow long-term cellular models from tumors and map their dependencies. We are creating a Desmoid Tumor Dependency Map as a resource to be shared with the scientific community. In the first phase of the project, we are turning existing short-term desmoid models into expandable long-term lines amenable for screening; two such lines have now been included in genetic and drug screens to inform the scale needed for success. Realizing an opportunity to improve the existing knowledgebase for propagating tumor-rich desmoid tumor models, we are now scaling up the creation of long-term models via systematic screening of culture conditions. To enable this, we have developed a multiplexed genomic monitoring solution to track tumor cell content across conditions and passages. We are also piloting imaging-based methods to utilize early, heterogeneous desmoid tumor tissues for target validation.