

Researchers publish molecular disease model for melanoma

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Cancer Commons, an initiative of CollabRx, a provider of information technology to personalize cancer treatments and accelerate research, announces the publication of a molecular disease model of melanoma (MDMM) which classifies the disease into molecular subtypes, rather than traditional histological or cellular subtypes, and describes treatment guidelines for each subtype, including specific assays, drugs, and clinical trials. The paper, titled "Molecular Disease Model for Melanoma," by Vidwans et al, was published in the March 30th issue of *PLoS ONE*.

Published as a "dynamic" review paper by a panel of leading researchers and clinicians affiliated with the Cancer Commons initiative, the MDMM is maintained online, curated by the authors and continuously updated based on input from the melanoma community to reflect the latest scientific, clinical and technological advancements in [cancer research](#) and treatment. The MDMM is designed as an interface between the research and clinical communities where researchers can learn from [clinical outcomes](#) to refine molecular subtypes and clinicians can use the latest subtype information in treatment decisions. In this way, the online melanoma disease model becomes the core of an adaptive, rapid learning community that provides each patient with the best possible outcome while aggregating results over all patients to advance the standard of care.

The MDMM consists of a set of "actionable" molecular subtypes and proposed practice guidelines for treating each subtype: which therapies (approved or experimental) should be considered and which are

contraindicated. A molecular subtype of melanoma is loosely defined as those tumors containing the same set of molecular (primarily genetic) defect(s) and their associated pathways. A subtype is deemed actionable if there is both a CLIA-approved assay to determine whether a given tumor fits that classification, and at least one FDA-approved or experimental targeted therapy with potential efficacy for that subtype.

Commented Dr. Keith Flaherty, Director of Developmental Therapeutics at Massachusetts General Hospital and co-chief editor of Cancer Commons Melanoma: "While earlier stages of melanoma can be successfully treated by surgical excision, advanced stages are uniquely refractory to standard chemotherapy. Recent developments in our understanding of the molecular drivers of this disease have led to a new generation of targeted therapies that are proving effective in patients whose tumors harbor certain genetic defects. Rather than treating melanoma as a single disease, it makes sense to stratify tumors into molecular subtypes and treat each with the most appropriate therapies."

The molecular disease model for melanoma is the first of many such models planned by Cancer Commons, the open science initiative for personalized oncology that was initially convened by CollabRx. Cancer Commons is creating a network of rapid learning communities where physicians, scientists, and patients collaborate to provide each patient with the best possible outcome by personalizing therapy based on the tumor's genomic subtype. CollabRx is developing web-based applications and services that facilitate this collaboration; the first of these, The Targeted Therapy Finder – Melanoma, leverages the MDMM to find treatments targeted to a patient's specific molecular profile.

"Cancer Commons puts the patient at the front end of a remarkable experiment in 'translational medicine' - one in which basic molecular biology, computational methods and a network of experts and institutions collaborate to work out personalized medical solutions," said

Donald Kennedy, Ph.D., Editor-in-Chief, Science (2000-2008). "Our goal is to run this translational loop in real time, so that what is learned from one patient can be disseminated in time to help the next. By having researchers, clinicians and patients on the same platform, we can take years off of the standard path from an observation to a trial to a publication or conference presentation, to incorporation into formal practice guidelines."

The formation of Cancer Commons was driven by CollabRx chairman and chief executive officer, Dr. Jay M. (Marty) Tenenbaum, a successful technology entrepreneur and [melanoma](#) survivor, whose personal diagnosis of a highly lethal cancer compelled him to seek innovative new ways for physicians and patients to gain information and access to life-saving treatments. Said Dr. Tenenbaum: "We have an urgent need today for a new, personalized cancer treatment paradigm – one that exploits genomics to generate more information from every patient, particularly information about which drugs are likely to work best in specific patients. Such an approach enables drugs to be tested with fewer patients, allowing us to leverage what we learn at the molecular level across many cancers and rapidly develop new off-label uses for approved targeted therapies. Most importantly, it provides each patient with the optimal treatment."

Provided by Public Library of Science

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