IDEAYA BIOSCIENCES

Translating innovative ideas to breakthrough oncology medicines

CORPORATE PROFILE

IDEAYA Biosciences is an oncology-focused biotechnology company committed to the discovery of personalized synthetic lethality medicines targeting DNA damage and repair for genetically defined patient populations and immuno-oncology therapies targeting the tumor microenvironment. Founded in 2015, the Company has assembled a world-class drug discovery team and Scientific Advisory Board (SAB) that is represented by a Nobel Laureate and three Members of the National Academy of Sciences. IDEAYA is located in South San Francisco and La Jolla, California.

A major focus of IDEAYA is to exploit the concept of synthetic lethality, a phenomenon whereby the independent loss-of-function of two different genes have no significant effects on cell growth and viability, but when combined results in robust cell death. Synthetic lethality while a longstanding concept in genetic model systems and cancer biology has only recently been translated into a therapeutic reality with the approval of a PARP-inhibitor, olaparib, in BRCA deficient ovarian cancer. IDEAYA will focus on novel synthetic lethal interactions for genetically defined patient populations, exploiting inherent tumor susceptibilities en-route to discovery and development of small-molecule agents to treat major human cancers. Another area of focus for IDEAYA will be to exploit the potential of modulating DNA repair to augment response to immunotherapy. In addition, drug discovery programs will target pathways known to produce an immune suppressed tumor microenvironment, enabling tumors to escape recognition by the host immune system.

Leadership Team
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Founded August 2015
$46M Series A

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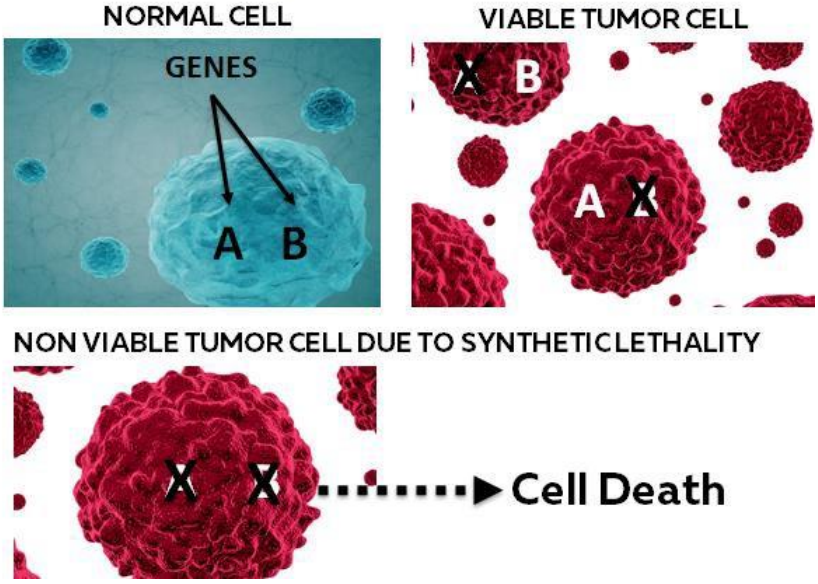
OUR SCIENCE

Synthetic Lethality and DNA Damage

Synthetic lethality (SL) is a concept first identified in the model genetic system Drosophila melanogaster (fruit fly) and recapitulated in yeast and other organisms. It was first suggested as a potential cancer treatment modality nearly 20 years ago (Hartwell et al 1997) and proof of concept for the approach now exists with the 2014 approval of the PARP inhibitor, Lynparza (olaparib), as an effective treatment for patients with BRCA 1/2 mutant ovarian cancer. Importantly, this biomarker driven approach to direct therapy to a "BRCA" subset of ovarian cancer patients has resulted in superior response rates and significant progression free survival. IDEAYA is prosecuting a novel set of DNA repair-based drug targets through a unique, tripartite approach that integrates 1) robustness and conservation of SL interactions across different organisms and in human tumor cells, 2) disease relevance of drug target and prevalent loss-of-function mutation in SL partner gene, and 3) small-molecule drug-ability. Another area of focus for IDEAYA will be to exploit the potential of modulating DNA repair with small molecules to augment response to immunotherapy

Synthetic Lethality Concept

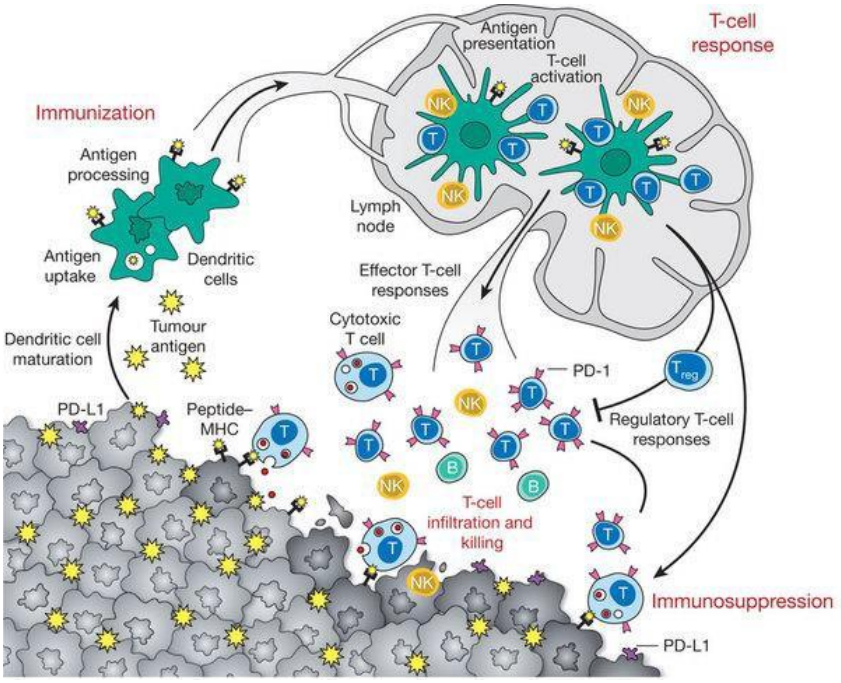
- Normal Cell: Harbors wild type genes A & B
- Viable Tumor Cell: Harbors mutated gene A or B
- Synthetic Lethality: The specific combination of inhibited/mutated gene A and B results in tumor cell death
- Treat genetic sub-populations that harbors specific mutations



Immuno-oncology

The concept of stimulating the human immune system to kill tumor cells has been around since the work of Coley a century ago. Recent advances in immuno-oncology (IO), using an array of treatment modalities is transforming cancer therapy. IDEAYA's IO programs are focusing on small-molecule druggable targets that function to cause an immune-suppressed, tumor-growth permissive, microenvironment. Small-molecule agents targeting these key pathways are predicted to augment immune response directed at tumor cells as monotherapy but also in combination with other immune system targeting therapies to maximize therapeutic response.

The Tumor Microenvironment



Mellman, Coukas, Dranoff, Cancer Immunotherapy Comes of Ages, Nature 2011