

Using Innovative Models to Understand How Cells Divide for Improved Therapeutic Targets



Julien Sage
Professor of Pediatrics and Genetics

CURRENT RESEARCH

Fundamentally understanding cell proliferation will lead to novel approaches for cancer treatment and tissue repair

Cells divide during various stages in the human body, such as the development of an embryo or child, to maintain homeostasis, and to replace aging or dysfunctional cells and repair damages. However, in some diseases—most notably cancer—our cells have lost their ability to control their proliferation. Dr. Julien Sage, Professor of Pediatrics and Genetics at Stanford University, is interested in the fundamental mechanism driving the proliferation of cells. He uses novel genetic tools to understand the basic mechanisms of cancer initiation and progression, and explore how cells divide. By understanding the molecular basis of how cancers start and progress, he aims to find effective therapeutic targets and therapeutic strategies to prevent and treat metastasis, as well as enhance the proliferation of cells for tissue repair.

Dr. Sage's work primarily focuses on the molecular machinery that decides whether a cell divides or not. Many of his experiments use stem cells, which often function as the source for other cells in the body during tissue repair and in cancer initiation. He is specifically working on a tumor suppressor named RB. The term "RB" is derived from a pediatric eye cancer called retinoblastoma. RB is expressed in all cells in the body, but children who have mutations in this gene develop tumors in their eyes or their bones; currently, it is not understood why this occurs. When RB is inactivated, cells tend to proliferate when they should not, which has been implicated in the development of cancer, initially in children, but also in adults. Dr. Sage's cancer genetics lab, which comprises postdoctoral fellows, undergraduate and graduate students, research technicians, a master's student, and an...

AFFILIATION

 Stanford University

EDUCATION

- PhD 1998, University of Nice, France

RESEARCH AREAS

Life Science, Genomics / Congenital, Oncology / Cancer, Regenerative Medicine

FUNDING REQUEST

Your contributions will help fund Dr. Sage's continued research in understanding the proliferation of cells using novel stem cell and in vivo mice models. Costs include \$80K/year for one staff member or post doc, \$115K/year for in-vitro mice, \$115K/year for supplies, \$300K/year to conduct experiments, and \$400K/year to maintain staff and trainees. Play a role in exploring this process, which will lead to new approaches for advanced tissue repair and prevent cell proliferation in tumors; fund Dr. Sage.

Copyright © 2017 / Benefunder 4790 Eastgate Mall, Ste 125, San Diego, CA 92121 / info@benefunder.com / (858) 215-1136

[Read More at benefunder.com/](https://benefunder.com/)