Copyright and Open Access

Promoting innovation in the life science sector and supporting procompetitive collaborations: The role of intellectual property

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Open Access

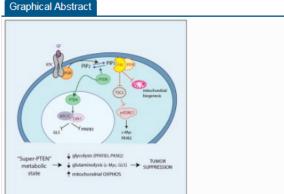
- Internet distribution of research creates new potential to increase research impact
- Copyright law controls distribution rights.
- The law gives copyrights to researchers
- Under the traditional subscription model, researchers transfer publishing rights to publishers.



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Highlights

- "Super-PTEN" mice are viable and show reduced body size due to decreased cell number
- PTEN elevation shifts cellular metabolism to a tumor-suppressive anti-Warburg state
- PTEN controls key metabolic pathways through PI3K-dependent and -independent functions
- PTEN negatively impacts tumor metabolic pathways: glycolysis and glutaminolysis

Summary

Decremental loss of PTEN results in cancer susceptibility and tumor progression. PTEN elevation might therefore be an attractive option for cancer prevention and therapy. We have generated several transgenic mouse lines with PTEN expression elevated to varying levels by taking advantage of bacterial artificial chromosome (BAC)-mediated transgenesis. The "Super-PTEN" mutants are viable and show reduced body size due to decreased cell number, with no effect on cell size. Unexpectedly, PTEN elevation at the organism level results in healthy metabolism characterized by increased energy expenditure and reduced body fat accumulation. Cells derived from these mice show reduced glucose and glutamine uptake and increased mitochondrial oxidative phosphorylation and are resistant to oncogenic transformation. Mechanistically we find that PTEN elevation orchestrates this metabolic switch by regulating PI3K-dependent and -independent pathways and negatively impacting two of the most pronounced metabolic features of tumor cells: glutaminolysis and the Warburg effect.







Photo by: Mike Licht at http://www.flickr.com/photos/notionscapital/

Open Access

- The Open Access movement seeks to realign the free speech values that underlie academic freedom and the pursuit of knowledge . . .
- . With the economics of Internet publication

Budapest Open Access Initiative

In response to the growing demand to make research free and available to anyone with a computer and an internet connection, a diverse coalition has issued <u>new guidelines</u> that could usher in huge advances in the sciences, medicine, and health.

The recommendations were developed by <u>leaders of the Open Access movement</u>, which has worked for the past decade to provide the public with unrestricted, free access to scholarly research—much of which is publicly funded. Making the research publicly available to everyone—free of charge and without most copyright and licensing restrictions—will accelerate scientific research efforts and allow authors to reach a larger number of readers.

The recommendations are the result of a meeting organized by the Open Society Foundations to mark the tenth anniversary of Budapest Open Access Initiative, which first defined Open Access. The recommendations include the development of Open Access policies in institutions of higher education and in funding agencies, the open licensing of scholarly works, the development of infrastructure such as Open Access repositories and creating standards of professional conduct for Open Access publishing. The recommendations also establish a new goal of achieving Open Access as the default method for distributing new peer-reviewed research in every field and in every country within ten years' time.

<u>Translations of the recommendations</u> have already been made in several languages, with more to follow.

For more on the recommendations, please see the <u>press release</u> as well as a <u>blog post</u> by Peter Suber which provides additional background on the Open Access movement.

Open Access

- The term "open" has two aspects
 - Terms of Access = Free on the Internet
 - Terms of Use =
 - Free-to-Reuse in any manner as long as attribution is given to the source.
 - In some case reuse is limited to noncommercial use.

Five Audiences that Open Access serves

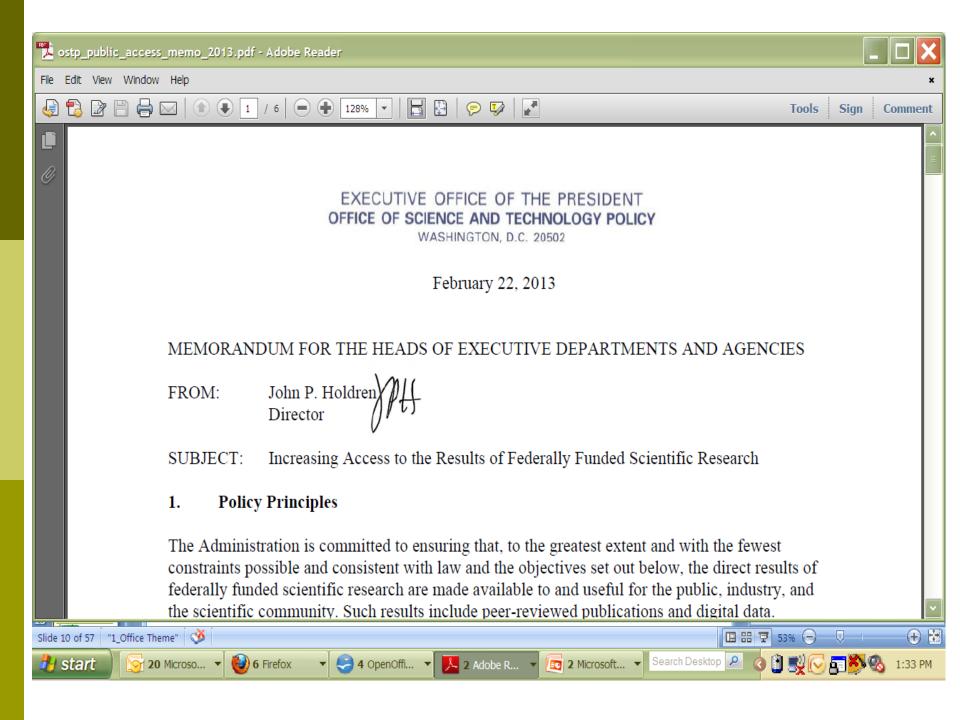
- Serendipitous readers
- Under-resourced readers
- Interdisciplinary readers
- International readers
- Machine readers

Making research freely available over the Internet has seen two lines of development.

Public policy requiring delayed access to publicly-publicly funded research

Open access publishing

 New business model – research grants or institutions fund publishing costs upfront



The OSTP Directive

Agency Public Access Plan

• "The Office of Science and Technology Policy (OSTP) hereby directs each Federal agency with over \$100 million in annual conduct of research and development expenditures to develop a plan to support increased public access to the results of research funded by the Federal Government."

3. Objectives for Public Access to Scientific Publications

- . . . "Further, each agency plan shall:
- a) Ensure that the public can <u>read</u>, <u>download</u>, <u>and</u> <u>analyze in digital form final peer reviewed</u> <u>manuscripts</u> or final published documents within a time frame that is appropriate for each type of research conducted or sponsored by the agency.

. . .

b) Facilitate <u>easy public search</u>, <u>analysis of</u>, <u>and</u> <u>access to peer-reviewed scholarly publications</u> directly arising from research funded by the Federal Government"

- □Policy change is only one source of dynamism in scholarly publishing
- □Changes in the marketplace as well.

Two changes in the marketplace

- New financing model for journals leads to immediate open access with broad reuse rights granted to the public
- Relation between pre-publication peer review and time-to-publication being reconsidered.

In the open access publishing model, copyright generally is licensed to the public by the author under a Creative Commons license.

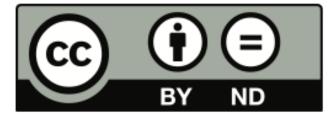
Step 1: Choose Conditions



















PUBLIC DOMAIN most free least free





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