SPATIO-TEMPORAL CONTROL OF PROTEIN INTERACTIONS

Tech ID: 20050 / UC Case 2008-172-0

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OTHER INFORMATION

CATEGORIZED AS

- Biotechnology
  - Other
- Imaging
  - Molecular

RELATED CASES

2008-172-0

BRIEF DESCRIPTION

BACKGROUND: There is a general need for dynamically regulatable protein binding domains to control functional protein interactions in a variety of experimental and commercial applications. The majority of such systems that have been developed are based on the administration of chemical dimerizers which require the slow, irreversible diffusion into the cell of small molecules that target the dimer-interface site. An alternative method is the control of protein interaction in any suitable host cell or organisms by light. This invention relates to a light-regulatable protein-protein interaction system based upon phytochromes, a family of photoreceptors that enable plants to adapt to their prevailing light environment.

TECHNOLOGY: UCSF inventors have developed the first genetically encoded system for the fine spatial and temporal control of the localization and activity of proteins on sub-micrometer and sub-second scales. The system has further been optimized to be modular and easily switched to future arbitrary signaling pairs and localization tags.

SUGGESTED USES

- Studying protein-protein interactions
- Studying protein localization in a spatio-temporal fashion
- Versatile tool for dynamically tagging cells or cell sub-populations

ADVANTAGES

- Reversible, Second-timescale control of protein-protein interactions
- Capable of spatial, sub-cellular targeting of enzymatic activity
- High-throughput adaptable

IP STATUS

PCT patent application has been filed; world wide rights available.

PUBLICATIONS

The Scientist selected this as one of the **TOP TEN INNOVATIONS OF 2009**:

http://www.the-scientist.com/article/display/56171/

Here is a link to the original paper:

http://limlab.ucsf.edu/papers/pdfs/al_2009.pdf

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	8,828,658	09/09/2014	2008-172

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