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Light-regulated Sampling of Protein Kinase Activity (I)

Collaborative Project

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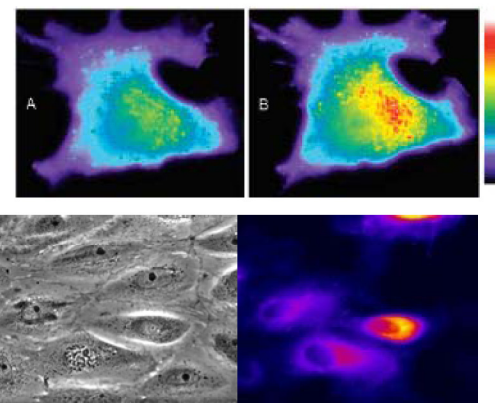
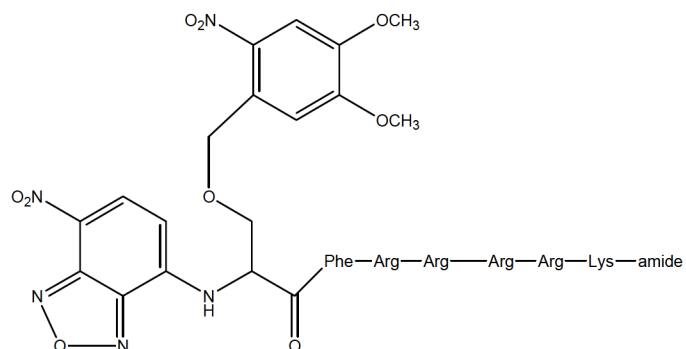
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Light-regulated Sampling of Protein Kinase Activity

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Dai, Z.; Dulyaninova, N. G.; Kumar, S.; Bresnick, A. R.; Lawrence, D. S. *Chem. & Biol.* **2007**, *14*, 1254-1260.
Wang, Q.; **Dai, Z.;** Cahill, S. M.; Blumenstein, M.; Lawrence, D. S. *J. Am. Chem. Soc.* **2006**, *128*, 14016-14017.

Overall Goals/Purpose

To develop sensors for protein kinase activities with controllable sensing capabilities in terms of time, location and environmental stimuli.
To investigate the role of certain kinases in cancer.

Pace Scholarly Research Award

Specific Research Aims

- Develop reporters that can fluorescently sense protein kinase activity in real time and under conditions that are consistent with living cells. Caged sensors are employed so that that report power can be temporally and spatially unleashed by photouncaging.
- Use these sensors to investigate the protein kinase activity in different cell lines and at different phases of cycles to sort out their role in cellular signal transduction and to identify inhibitors and promoters of kinase activity.