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**Caged gene-inducer spatially and temporally controls gene expression and plant development in transgenic Arabidopsis plant.**

Hayashi KI, Hashimoto K, Kusaka N, Yamazoe A, Fukaki H, Tasaka M, Nozaki H

*Bioorg Med Chem Lett* 2006 Feb 8 [[abstract on PubMed](#)] [[related articles](#)]**Selected by** | Andrew Bent **NEW** / Brian Forde

First evaluation 22 Feb 2006 | Latest evaluation 8 Mar 2006

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Wisconsin-Madison, United  
States of America  
PLANT BIOLOGY

- New Finding
- Tech Advance

**Comments**

**It may now be possible to artificially regulate transgene expression with much more spatial and temporal precision in Arabidopsis, and probably other plants.** The interpretive problems associated with constitutive overexpression of a gene are well known, and chemically inducible promoters have offered one way around this issue. The authors now have caged estradiol and dexamethazone chemistries worked out for use in plant experiments, meaning that if light can be delivered precisely and the light itself doesn't cause trouble, some very interesting new experimental approaches may now be possible.

Evaluated 8 Mar 2006 **NEW**[cite this evaluation](#)**Brian Forde**Lancaster University,  
United Kingdom  
PLANT BIOLOGY

- Tech Advance

**This paper reports an exciting new tool for the manipulation of gene expression in transgenic plants. The authors describe novel caged forms of estradiol and dexamethasone that can be activated by UV light.** In combination with suitable estradiol- or dexamethasone-inducible gene expression systems, the caged compounds can be used to obtain precise temporal and spatial regulation of transgene expression. The authors demonstrate their technique by showing how a GFP transgene can be activated in discrete segments of Arabidopsis roots using narrow beams of UV light.

Evaluated 22 Feb 2006

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