

**VOL. 144 NO. 4 OCT. 2008**

**JOBIAO 144 (4) 415-553 (2008)**

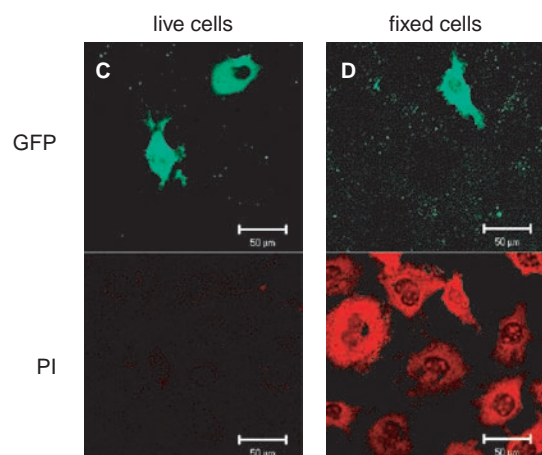
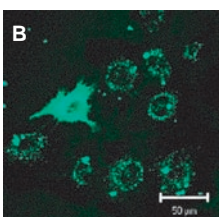
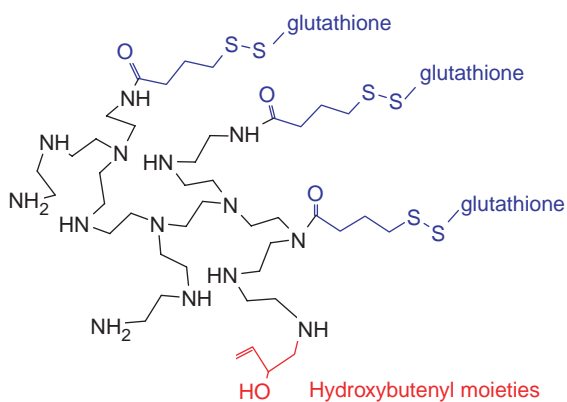
# THE JOURNAL OF BIOCHEMISTRY

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**A**



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Annual subscription rate (Volume 143 and Volume 144, 2008)

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- Neurochemistry
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- Physiological Chemistry
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#### **Molecular Biology:** Molecular Biology General

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- Replication and Recombination
- Gene Expression
- Protein Synthesis
- DNA-Protein Interaction
- RNA Processing
- Genetic Engineering
- Genetic Diseases
- Molecular Genetics
- Molecular Evolution
- Bioinformatics

**Fields:** Topics

**Cell:** Cell General

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Extracellular Matrices and Cell Adhesion Molecules  
Cell Cycle  
Receptors and Signal Transduction  
Stress Proteins and Molecular Chaperones  
Cell Death  
Differentiation, Development, and Aging  
Neurobiology  
Tumor and Immunology

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RNA Technology  
Glycotechnology  
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**COVER:** Polyethylenimine-cationized glutathione conjugates (PEI-glutathione conjugates) were developed in order to efficiently deliver a glutathione *S*-transferase (GST)-fused protein into living cells. By complex formation with a PEI-glutathione conjugate, GST-fused protein easily internalizes into living cells and efficiently expresses its function in cytosol. In this figure, enhanced endosomal escape of transduced GST-fused green fluorescent protein without causing cell death by use of a PEI-glutathione conjugate derivative possessing a hydroxybutenyl moiety is shown. The enhanced endosomal escape by this reagent was confirmed by the observation of more efficient activation of signal transduction pathway due to an internalized GST-fused constitutively active mutant of a kinase protein. These results suggest that PEI-glutathione conjugates developed here are convenient molecular tools specific for protein transduction of widely used GST-fused proteins and therefore useful to analyze protein functions in cytosol. [See Murata *et al.*; p. 447]