



## Volume 36, Number 2, April 2008 Contents

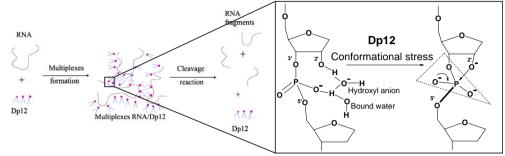
BIOORGANIC CHEMISTRY

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### Cleavage of RNA by an amphiphilic compound lacking traditional catalytic groups

pp 33-45

N.A. Kovalev, D.A. Medvedeva, M.A. Zenkova,\* V.V. Vlassov

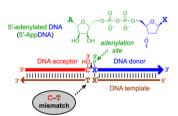


## Improvement of DNA adenylation using T4 DNA ligase with a template strand and a strategically mismatched acceptor strand

pp 46–56

Maha P. Patel, Dana A. Baum, Scott K. Silverman\*

An improved procedure for DNA adenylation is developed. The procedure uses T4 DNA ligase, ATP, a DNA template, and an acceptor strand with a strategic C–T acceptor–template mismatch adjacent to the adenylation site. This mismatch permits efficient adenylation but suppresses subsequent ligation.



### Formation of adducts in the reaction of glyoxal with 2'-deoxyguanosine and with calf thymus DNA

pp 57–64

Donata Pluskota-Karwatka, Agnieszka J. Pawłowicz, Magdalena Tomas, Leif Kronberg\*

The glyoxal adducts formed in reactions with 2'-deoxyguanosine and with calf thymus DNA.

### A continuous assay of acetate kinase activity: Measurement of inorganic phosphate release generated by hydroxylaminolysis of acetyl phosphate

pp 65-69

Soma Mukhopadhyay, Miriam S. Hasson, David A. Sanders\*

A novel continuous assay for acetate kinase has been developed that utilizes purine nucleoside phosphorylase-based measurement of the inorganic phosphate generated by hydroxylaminolysis of one of the products of the acetate-kinase reaction, acetyl phosphate.

### Structural studies on the neutral glycosphingolipids of Manduca sexta

pp 70-76

D. Thusitha U. Abeytunga,\* Lynne Oland, Arpad Somogyi, Robin Polt

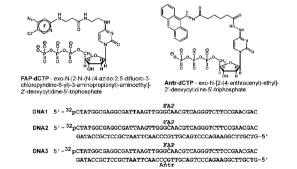
The presence of sphingadienes in the GSLs of M. Sexta

#### Crosslinking of nucleotide excision repair proteins with DNA containing photoreactive damages

pp 77–84

Ekaterina A. Maltseva, Nadejda I. Rechkunova, Irina O. Petruseva, Wim Vermeulen, Orlando D. Schärer, Olga I. Lavrik\*

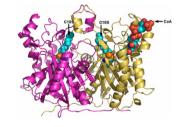
Photoreactive DNA duplexes mimicking substrates of nucleotide excision repair (NER) system were used to analyze the interaction of XPC-HR23B, RPA, and XPA with damaged DNA.



## Probing reactivity and substrate specificity of both subunits of the dimeric Mycobacterium tuberculosis FabH using alkyl-CoA disulfide inhibitors and acyl-CoA substrates

pp 85-90

Sarbjot Sachdeva, Faik Musayev, Mamoun M. Alhamadsheh, J. Neel Scarsdale, H. Tonie Wright, Kevin A. Reynolds\*



## The utilization of bathocuproinedisulfonic acid as a reagent for determining D-glucose and D-galactose levels in glycoconjugates

pp 91-95

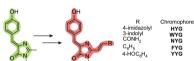
David M. Sovic, Leanna R. Lester, Elizabeth E. Murray, Menashi A. Cohenford\*



## Synthesis and properties of the red chromophore of the green-to-red photoconvertible fluorescent pp 96–104 protein Kaede and its analogs

Ilia V. Yampolsky, Alexander A. Kislukhin, Tynchtyk T. Amatov, Dmitry Shcherbo, Victor K. Potapov, Sergey Lukyanov, Konstantin A. Lukyanov\*

A general method to synthesize red chromophores of Kaede type (Kaede is a green-to-red photoconvertible fluorescent protein belonging to the Green Fluorescent Protein family) is described. Synthesis of Kaede-like chromophores with different groups corresponding to natural amino acids made it possible to evaluate their influence on spectral properties of the chromophore and to find structures with the most red-shifted absorption and emission.



#### PRELIMINARY COMMUNICATION

# Synthesis and bioorthogonal coupling chemistry of a novel cyclopentenone-containing unnatural pp 105–111 tyrosine analogue

Gianni R. Lorello, Marc C.B. Legault, Bojana Rakić, Kathrine Bisgaard, John Paul Pezacki\*

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