DNA deamination in immunity, virology
and cancer

Papers of a Discussion Meeting Issue organized and edited by Patricia J. Gearhart, Tomas Lindahl and Michael S. Neuberger

Preface
Preface 561

Articles
Uracil in DNA and its processing by different DNA glycosylases 563

Molecular mechanism for generation of antibody memory 569

Immunoglobulin class switch recombination: study through human natural mutants 577
A. Durandy

Stochastic properties of processive cytidine DNA deaminases AID and APOBEC3G 583
L. Chelico, P. Pham & M. F. Goodman

Timing matters: error-prone gap filling and translesion synthesis in immunoglobulin gene hypermutation 595

Hijacked DNA repair proteins and unchained DNA polymerases 605
H. Saribasak, D. Rajagopal, R. W. Maul & P. J. Gearhart

Competitive repair pathways in immunoglobulin gene hypermutation 613

Somatic hypermutation of immunoglobulin genes: lessons from proliferating cell nuclear antigen K164R mutant mice 621
P. Langerak, P. H. L. Krüger, M. R. Heideman, P. C. M. van den Berk & H. Jacobs

Shhh! Silencing by microRNA-155 631
G. Tong & F. N. Papavasiliou

Activation-induced cytidine deaminase-mediated hypermutation in the DT40 cell line 639
H. Arakawa & J.-M. Buerstedde

The roles of APE1, APE2, DNA polymerase β and mismatch repair in creating S region DNA breaks during antibody class switch 645
C. E. Schrader, J. E. J. Gukema, X. Wu & J. Stavnezer

Non-homologous end joining in class switch recombination: the beginning of the end 653
A. Kotnis, L. Du, C. Liu, S. W. Popov & Q. Pan-Hammarström

Post-translational regulation of activation-induced cytidine deaminase 667
U. Basu, A. Franklin & F. W. Alt

APOBEC proteins and intrinsic resistance to HIV-1 infection 675
M. H. Malim

APOBEC3G: an intracellular centurion 689
Y.-L. Chiu & W. C. Greene

Powerful mutators lurking in the genome 705
V. Petit, J.-P. Vartanian & S. Wain-Hobson

DNA deamination in immunity, virology and cancer

Papers of a Discussion Meeting Issue organized and edited by Patricia J. Gearhart, Tomas Lindahl and Michael S. Neuberger

Preface
Preface 561

Articles
Uracil in DNA and its processing by different DNA glycosylases 563

Molecular mechanism for generation of antibody memory 569

Immunoglobulin class switch recombination: study through human natural mutants 577
A. Durandy

Stochastic properties of processive cytidine DNA deaminases AID and APOBEC3G 583
L. Chelico, P. Pham & M. F. Goodman

Timing matters: error-prone gap filling and translesion synthesis in immunoglobulin gene hypermutation 595

Hijacked DNA repair proteins and unchained DNA polymerases 605
H. Saribasak, D. Rajagopal, R. W. Maul & P. J. Gearhart

Competitive repair pathways in immunoglobulin gene hypermutation 613

Somatic hypermutation of immunoglobulin genes: lessons from proliferating cell nuclear antigen K164R mutant mice 621
P. Langerak, P. H. L. Krüger, M. R. Heideman, P. C. M. van den Berk & H. Jacobs

Shhh! Silencing by microRNA-155 631
G. Tong & F. N. Papavasiliou

Activation-induced cytidine deaminase-mediated hypermutation in the DT40 cell line 639
H. Arakawa & J.-M. Buerstedde

The roles of APE1, APE2, DNA polymerase β and mismatch repair in creating S region DNA breaks during antibody class switch 645
C. E. Schrader, J. E. J. Gukema, X. Wu & J. Stavnezer

Non-homologous end joining in class switch recombination: the beginning of the end 653
A. Kotnis, L. Du, C. Liu, S. W. Popov & Q. Pan-Hammarström

Post-translational regulation of activation-induced cytidine deaminase 667
U. Basu, A. Franklin & F. W. Alt

APOBEC proteins and intrinsic resistance to HIV-1 infection 675
M. H. Malim

APOBEC3G: an intracellular centurion 689
Y.-L. Chiu & W. C. Greene

Powerful mutators lurking in the genome 705
V. Petit, J.-P. Vartanian & S. Wain-Hobson