Days of Molecular Medicine 2008
COGNITIVE DYSFUNCTION IN DISEASE: MECHANISMS AND THERAPIES
Karolinska Institutet, Stockholm, Sweden
April 17–19, 2008

ScienceDirect
You have Guest access to ScienceDirect
Find out more...
Login:
Register

Home | Browse | My Settings | Alerts | Help

Quick Search Title, abstract, keywords Author e.g. j s smith
search tips Journal/book title Volume Issue Page Clear Go

DNA Repair
Article in Press, Corrected Proof - Note to users

Abstract | Full Text + Links | PDF (484 K)
Add to my Quick Links E-mail Article

doi:10.1016/j.dnarep.2007.11.012 Cite or Link Using DOI
Copyright © 2007 Elsevier B.V. All rights reserved.

Hot Topics in DNA Repair

DNA repair is crucial for maintaining hematopoietic stem cell function

Laura J. Niedernhofer[a,]

[a]University of Pittsburgh Cancer Institute, Department of Molecular Genetics and Biochemistry, University of Pittsburgh School of Medicine, 5117 Centre Avenue Hillman Cancer Center, Pittsburgh, PA 15213, United States

Received 7 August 2007; revised 17 November 2007; accepted 21 November 2007. Available online 8 January 2008.

Abstract

Richard Cornall and collaborators recently developed a mouse model of Ligase IV syndrome with growth retardation and immunodeficiency due to a defect in nonhomologous end-joining (NHEJ) of DNA double-strand breaks. They demonstrated age-dependent loss of hematopoietic stem cell function in these mice. Simultaneously, Irving Weissman and colleagues demonstrated a similar phenomenon in *Ku80*$^{-/-}$ mice defective in NHEJ and telomere maintenance, *Xpd*^{TTD} mice defective in nucleotide excision repair, and late generation *mTr*$^{-/-}$ missing telomerase activity. These studies strongly support the hypothesis that genomic stress causes aging by limiting the ability of stem cells to indefinitely maintain tissue homeostasis.

Keywords: Aging; Progeria; Oxidative stress; Endogenous damage

Tel.: +1 412 623 7763; fax: +1 412 623 7761.

Note to users: The section "Articles in Press" contains peer reviewed accepted articles to be published in this journal. When the final article is assigned to an issue of the journal, the "Article in Press" version will be removed from this section and will appear in the associated published journal issue. The date it was first made available online will be carried over. Please be aware that although "Articles in Press" do not have all bibliographic details available yet, they can already be cited using the year of online publication and the DOI as follows: Author(s), Article Title, Journal (Year), DOI. Please consult the journal's reference style for the exact appearance of these elements, abbreviation of journal names and the use of punctuation.

There are three types of "Articles in Press":

- **Accepted manuscripts:** these are articles that have been peer reviewed and accepted for publication by the Editorial Board. The articles have not yet been copy edited and/or formatted in the journal house style.
- **Uncorrected proofs:** these are copy edited and formatted articles that are not yet finalized and that will be corrected by the authors. Therefore the text could change before final publication.
- **Corrected proofs:** these are articles containing the authors' corrections and may, or may not yet have specific issue and page numbers assigned.

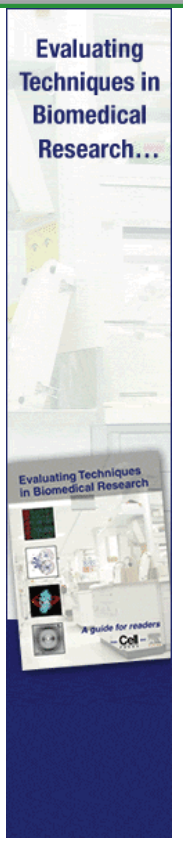
DNA Repair
Article in Press, Corrected Proof

Purchase the full-text article
- PDF and HTML
- ALL references
- All images
- All tables

Related Articles in ScienceDirect
- Hematopoietic senescence is postponed and hematopoietic... *Experimental Hematology*
- Regeneration of Hematopoietic and Cardiovascular Tissue... *Regenerative Biology and Medicine*
- Life and death in hematopoietic stem cells *Current Opinion in Immunology*
- DNA Repair: Bacteria to Humans: A conference sponsored ... *Biochimica et Biophysica Acta (BBA) - Reviews on Cancer*
- Update on the Use of Genetically Modified Hematopoietic... *Gene Therapy of Cancer (Second Edition)*

View More Related Articles

+ Add to 2collab



Home | Browse | My Settings | Alerts | Help

About ScienceDirect | Contact Us | Terms & Conditions | Privacy Policy
Copyright © 2008 Elsevier B.V. All rights reserved. ScienceDirect® is a registered trademark of Elsevier B.V.