

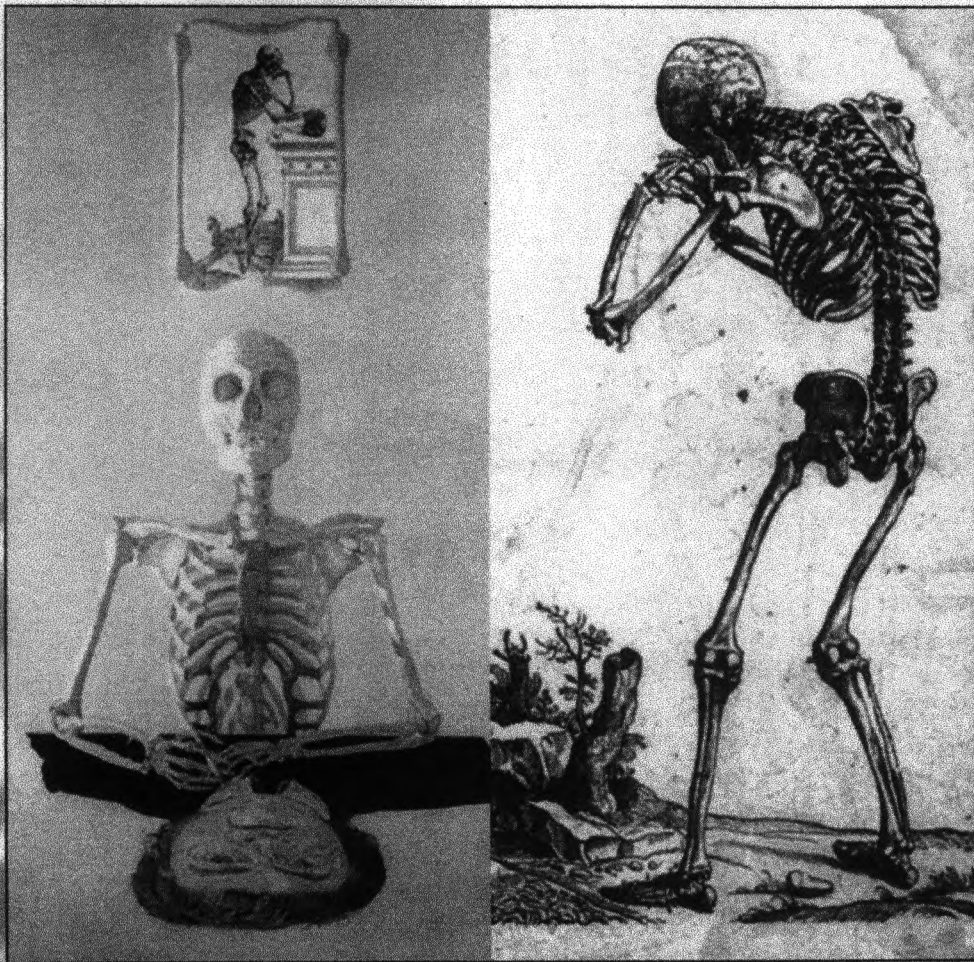


Annals of Volume 196 · 2014 **S1**

ANATOMY

Anatomischer Anzeiger

Official Journal of the Anatomische Gesellschaft



Supplement Issue

**Abstracts 18th Congress
of the International
Federation of Associations
of Anatomists (IFAA 2014)
Anatomy from gross to
molecular and digital**

August 8 - 10, 2014

Beijing, China

Editor-in-Chief

Friedrich Paulsen
Erlangen-Nuremberg,
Germany

Honorary Editor

Wolfgang Kühnel
Lübeck, Germany

ISSN 0940-9602

Ann. Anat.
196(2014)S1
pp. S1-S286

www.elsevier.com/locate/aaanat

© 2014 Elsevier GmbH.

This journal and the individual contributions contained in it are protected under copyright, and the following terms and conditions apply to their use in addition to the terms of any Creative Commons or other user license that has been applied by the publisher to an individual article.

Photocopying

Single photocopies of single articles may be made for personal use as allowed by national copyright laws. Permission is not required for photocopying of articles published under the CC BY license nor for photocopying for non-commercial purposes in accordance with any other user license applied by the publisher. Permission of the publisher and payment of a fee is required for all other photocopying, including multiple or systematic copying, copying for advertising or promotional purposes, resale, and all forms of document delivery. Special rates are available for educational institutions that wish to make photocopies for non-profit educational classroom use.

Permissions

For information on how to seek permission visit www.elsevier.com/permissions or call: (+44) 1865 843830 (UK) / (+1) 215 239 3804 (USA).

Derivative Works

Users may reproduce tables of contents or prepare lists of articles including abstracts for internal circulation within their institutions or companies. Other than for articles published under the CC BY license, permission of the publisher is required for resale or distribution outside the subscribing institution or company. For any subscribed articles or articles published under a CC BY-NC-ND license, permission of the publisher is required for all other derivative works, including compilations and translations.

Language (usage and editing services)

Please write your text in good English (American or British usage is accepted, but not a mixture of these). Authors who feel their English language manuscript may require editing to eliminate possible grammatical or spelling errors and to conform to correct scientific English may wish to use the English Language Editing service available from Elsevier's WebShop <http://webshop.elsevier.com/languageediting/> or visit our customer support site <http://support.elsevier.com> for more information.

Storage or Usage

Except as outlined above or as set out in the relevant user license, no part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without prior written permission of the publisher.

Illustration services

Elsevier's WebShop (<http://webshop.elsevier.com/illustrationservices>) offers Illustration Services to authors preparing to submit a manuscript but concerned about the quality of the images accompanying their article. Elsevier's expert illustrators can produce scientific, technical and medical-style images, as well as a full range of charts, tables and graphs. Image 'polishing' is also available, where our illustrators take your image(s) and improve them to a professional standard. Please visit the website to find out more.

Notice

No responsibility is assumed by the Publisher for any injury and/or damage to persons or property as a matter of products liability, negligence or otherwise, or from any use or operation of any methods, products, instructions or ideas contained in the material herein. Because of rapid advances in the medical sciences, in particular, independent verification of diagnoses and drug dosages should be made.

Although all advertising material is expected to conform to ethical (medical) standards, inclusion in this publication does not constitute a guarantee or endorsement of the quality or value of such product or of the claims made of it by its manufacturer.

Papers may be sent to the Editors.

Instructions for Authors - see: www.elsevier.com/locate/aaanat

⊗ As of vol. 178, number 1 (1996) the paper used in this publication meets the requirements of ANSI/NISO Z39.48-1992 (Permanence of Paper).

ABSTRACTS

THE 18th CONGRESS OF THE INTERNATIONAL FEDERATION OF ASSOCIATIONS OF ANATOMISTS

BEIJING CHINA 08-10 AUGUST 2014

Edited by Yunqing Li, Changman Zhou

Organization Committee:

Bernard Moxham B.Sc., B.D.S., PhD, FHEA, FSB, FAS
Emeritus Professor of Anatomy
President of the International Federation of Associations of Anatomists (IFAA)
Cardiff School of Biosciences
United Kingdom

Friedrich Paulsen Prof. Dr. med.
Head Dept. Anatomy; FAU Erlangen, Erlangen Germany
Secretary General of IFAA

Richard L. Drake, Ph.D.
Director of Anatomy, Professor of Surgery Cleveland Clinic
Lerner College of Medicine. USA Treasurer of IFAA

Yunqing Li MD.Ph.D
Professor, Chairman of Department of Anatomy, Histology and Embryology, The Fourth Military Medical University Xi'an China.
President of Chinese Society of Anatomical Sciences(CSAS).

Changman Zhou MD.Ph.D
Professor in Department of Anatomy and Histology at Peking University Health Science Center, China.
Currently Vice-President and General Secretary of CSAS.

Ming Zhang MB, MMed, PhD
Clinical Anatomist, Department of Anatomy, University of Otago, New Zealand.

Local Scientific Committee:

Qunyuan Xu; Prof. Capital Medical University, Beijing China

Yunqing Li; Prof. 4th Military Medical University Xian China

Changman Zhou; Prof. Peking University, Beijing China

Huanjiu Xi; Prof. Liaoning University, Jinzhou China

Xiaosong Gu; Prof. Nantong University, Nantong China

He Li; Prof. Huadong Univeristy, Wuhan China

Guomin Zhou; Prof. Fudan University, Shanghai China

Shaoliang Zhang; Prof. 3th Military Medical University, Chongqing China

Chunhua Zhao; Prof. Peking Union Medical College, Beijing China

Wei An; Prof. Capital Medical University, Beijing China

Shungen Guo; Prof. Chinese Meidcine University, Beijing China

Shuling Bai; Prof. Chinese Medical University, Shenyang China

Fulu Gao; Prof. Hebei Univeristy Hebei China

Ya Jing; Prof. Shanxi Medical University, Shanxi China

Yuanshan Zeng; Prof. SUN YAT-SEN Univeristy, Guangzhou China

Wenlong Ding; Prof. Shanghai Jiaotong University, Shanghai China

Houqi Liu; Prof. 2th Military Medical University, Shanghai China

Shuwei Liu; Prof. Shandong University, Jina China

Chuanda Xu; Prof. Nanfang Medical Univeristy, Guangzhou China

Hongquan Zhang; Prof. Peking University, Beijing China

Chao Ma Prof. Peking Union Medical College, Beijing China

Content

Foreword

Abstract

Authors index

1
2-286
I-IX

Foreword

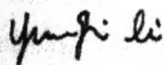
The 18th Congress of the International Federation of Associations of Anatomists (IFAA) is scheduled for August 8-10, 2014 in Beijing, China. On behalf of the organizing committee and the Chinese Society for Anatomical Sciences (CSAS), I would welcome you to this Congress. The congress will be hosted by the CSAS and will take place at the Beijing International Conference Centre, Beijing Continental Grand Hotel, Beijing, China. The conference centre and hotel are located in the Beijing Olympic Park. A wide range of accommodations are available around the Park, from budget accommodation up to 7 star hotels to suit all tastes and requirements.

The theme of the Congress will be **Anatomy, from gross to molecular and digital**. The IFAA Congress, as always, aims to bring together anatomists and other scientists around the globe to present and debate the latest and best research on anatomy, histology, morphology, cell biology, developmental biology, anthropology and digital morphology during the coming 4 years. It will provide an opportunity for networking and for delegates.

Beijing, as the Capital of China with an over 5,000 years civilization history, has countless historic and scenic spots, such as the Great Wall, Forbidden City, Summer Palace, Temple of Heaven, etc. You may have had a glimpse of her breathtaking beauty during the Beijing 2008 Olympic Games. The 2014 IFAA Congress will provide you an unforgettable opportunity to experience it by yourself. We will organize a wide range of a half day and day tours for your family during the conference. We will also arrange pre-/post-conference tours for you and your family to visit various tourist attractions around China.

We look forward to the pleasure of greeting you at what promises to be an exciting and fruitful meeting.

See you in Beijing! See you in 2014!



Professor Yunqing Li, MD, PhD.
President of Chinese Society for Anatomical Sciences
Professor of Anatomy
Head of Department of Anatomy, The Fourth Military Medical University, Xi'an, PR China
Email: deptanat@fmmu.edu.cn

Medicine, Shahid Chamran University, Ahvaz, Iran
 *Department of Clinical Sciences, Faculty of Veterinary
 Medicine, Shahid Chamran University, Ahvaz, Iran
 *kkhazaeil@gmail.com

Fluoroquinolones changes in the articular cartilage especially with high doses and more than two weeks use. So, due to relatively excessive use of enrofloxacin in the sheep flocks, this study was done to investigate the effects of enrofloxacin on cellular and molecular changes in growing lamb articular cartilage to evaluate some possible mechanisms involved these changes. Twelve, 2 month – old male lambs divided in three groups: control group received only normal saline; therapeutic group received 5mg/kg enrofloxacin subcutaneously, daily, for 15 days and toxic group received 35 mg/kg enrofloxacin as the same manner as therapeutic group. Twenty four hours after the last dose, the animals were euthanized and their stifle joints were dissected. Sampling from distal femoral and proximal tibial exterimities were done quickly for further histological and molecular studies. Collagen-n content was studied with avidin- biotin immunohistochemistry method in different groups. Expression of Sox9 and caspase-3 was evaluated by Real – time PCR. Immunohistochemical changes were included decreases of matrix proteoglycans, carbohydrates and Collagen-n in toxic group. Some of these changes were observed in therapeutic group with less intensity in comparison to toxic group. Enrofloxacin were significantly decreased (P 0.05) Sox9 expression in therapeutic and toxic groups compared to control group. But caspase -3 expression in toxic group significantly increased (P=0.0001) with comparison to other groups, while between control and therapeutic groups, there were no significant differences. So, it can be concluded that enrofloxacin increases apoptosis in chondrocytes and decreases their numbers. Enrofloxacin use in growing lambs even at recommended therapeutic dose, is not completely safe on articular cartilage. moreover higher doses of enrofloxacin induce sever changes in lamb articular cartilage.

IFAA2014-2-011

The Histopathologic appearance of the pancreatic islet in hyperglycaemia

Ervati Darwin, Muhamad Farid, Delmi sulastri

Departemnt Histology, Faculty of Medicine Andalas
 University, Padang-Indonesia.
 *ervatidarwin@fk.unand.ac.id

Hyperglycemia is a crucial factor in the development of diabetic nephropathy because of its effects on glomerular and might cause renal damage. To determine the effect of hyperglycemia on pancreatic islet, we examined the pancreatic tissues from the four groups of male Swiss Albino mice, induced by different doses of glucose. Morphometric analysis on Haematoxilin-eosin stained pancreatic sections showed that the area and diameter of islet were higher in group G1 but lower in group G2 and G3 (p<0.05). The islet cells count was higher in group G2 and G3 (p<0.05). However, there was no significant difference on islet cells count between Kontrol group and group G1 (p>0.05). Islet density was slightly higher in all treated group (p<0.05). The result suggest that hyperglycemia caused significant changes in histopathological features of mice pancreatic islet.*

The 18th Congress of the International Federation of Associations of Anatomists
<http://www.csas.org.cn/ifaa2014/>

IFAA2014-2-012

Ameliorative effect of ginkgo biloba on neurodegeneration caused by fluoride

R Jetti¹, C.V Raghuvver², M.R Chamallamudi³,
 Somayaji¹, P.B Billakanti⁴

¹Department of Anatomy, Melaka Manipal Medical
 Manipal University, Manipal, India; ²Department of
 Pathology, Yenepoya Medical College, Yenepoya Un
 Mangalore, India; ³Department of Pharmacology, M
 college of Pharmaceutical Sciences, Manipal Univer
 Manipal, India; ⁴Department of Anatomy, Kasturba
 College, Manipal University, Manipal, India
 *raghujetti@yahoo.co.in

Excessive consumption of fluoride through drinking
 other sources leads to skeletal and dental fluo
 addition to bones and teeth soft tissues and major o
 also affected by fluoride toxicity. In the present
 attempted to investigate the structural cha
 hippocampus followed by fluoride exposure and
 the ameliorative effect of Ginkgo biloba against ne
 caused by fluoride. Animals were randomly divided
 groups (n=6 in each group), Control,
 Fluoride+Vehicle (F+V), Fluoride+Ginkgo biloba
 Control animals received plain tap water; all the oth
 received 100ppm fluoridated water for 30 days. In
 F+GB groups received 100mg/kg body weight of g
 and Ginkgo biloba respectively for 15 days. At
 experimental period animals were euthanized brain
 processed and stained with cresyl violet staining. We
 sections free from artefacts were selected for
 mean number of viable neurons. The fluoride group
 reduction in the mean number of viable neurons
 control, whereas more viable neurons were found
 biloba treated group in comparison to fluoride group.
 the Ginkgo biloba may be an alternate therapeutic
 treat fluorosis victims.

IFAA2014-2-013

3D scanning of unsectioned adult optic nerve with a CLARITY method by laser scanning confocal microscopy

Sen Lin, Bingyin Su

Dept. of Anatomy and Histo-Embryology, Department
 Regeneration Key Lab of Sichuan Province, Chengdu
 Medical College, Chengdu, China.
 *lsroger@163.com

Studying axon in the central nervous system
 hampered by current histological and imaging
 because they provide only partial information
 reactions. The optic nerve(ON) crush model
 be a classic model for studying CNS. In this
 C57BL/6 mice were anesthetized and the ON was
 5s to observe a clear cut, however do not
 Animals with permanent ischemia were examined
 by embedding ON in hydrogel monomers. Laser
 thermally triggered initiators into tissue

IFAA2014-10-016

Withdraw.

IFAA2014-10-018**Hydrogen peroxide impairs the proliferation of bone marrow stem cells and their endothelial differentiation independent of reactive oxygen species generation**

Yuan Xiao, Xin Li, Yuqi Cui, Lingjuan Liu, Jia Zhang, Patrick Liu, Hong Liu, Guanglong He, Zhenguo Liu

*Davis Heart & Lung Research Institute and Division of Cardiovascular Medicine, the Ohio State University Wexner Medical Center, Columbus, Ohio, USA***zhenguo.liu@osumc.edu*

Cell therapy with bone marrow mesenchymal stem cells (MSCs) remains a viable option for tissue repair and regeneration. One of the major challenges for cell-based therapy is the limited survival of the cells after in vivo administration. Although the exact mechanism(s) for impaired in vivo cell survival remains to be defined, oxidative stress is considered to be involved in the process of in vivo cell damage. The present study was to investigate the effect of hydrogen peroxide (H₂O₂) on bone marrow stem cells and their endothelial differentiation and the underlying mechanisms in vitro. **Methods and Results:** Rat bone marrow multipotent adult progenitor cells (MAPCs) were treated with H₂O₂ (with the final concentration from 0 to 50 μ M) with or without the antioxidant N-acetylcysteine (NAC, 1 mM). H₂O₂ generated a significant amount of reactive oxygen species (ROS) in the culture system as measured with electron paramagnetic resonance spectroscopy, substantially inhibited the proliferation, Oct-4 expression, and endothelial differentiation of MAPCs, and induced the apoptosis of MAPCs in a dose-dependent manner. The phosphorylation levels of p38 and p53 were significantly increased in the cells treated with H₂O₂, while no significant changes in the expression and activation of Akt and ERK1/2 were observed. ROS production from H₂O₂ in the culture system was completely blocked by NAC (1 mM). However, NAC treatment didn't prevent H₂O₂-induced apoptosis, and inhibition of cell proliferation and endothelial differentiation of MAPCs. **Conclusion:** H₂O₂ exposure increased the apoptosis of MAPCs and inhibited their proliferation, Oct-4 expression, and endothelial differentiation with a mechanism independent of ROS generation in vitro. The effects of H₂O₂ on rat MAPCs might be mediated through p38 and/or p53-related signaling pathway(s).

IFAA2014-10-019**Effect of bone marrow – mesenchymal stem cell on the expression of metalloproteinase-1 matrix and type I collagen in burn healing**

Yanwirasti Yanwirasti, Gusti Revilla, Nur Afrainin Syah

*Department of Anatomy, Faculty of Medicine Andalas University, Padang, Indones.***yanwirasti@yahoo.com*

This study aimed at determining the effect of Bone Marrow Mesenchymal Stem Cell (BM-MSC) on the expression of metalloproteinase-1 matrix and type I collagen in rat burn healing. This research was an experimental research in post-test only control design, using 24 Wistar rats. The rats were divided into 3 groups: control (no burn), treatment I (full thickness burn administered Phosphate Buffer Saline (PBS)), and treatment II (full thickness burn administered BM-MSC 2x10⁶ cells/ml subcutaneous). On day 14, burn tissues were taken to see the expressions of metalloproteinase-1 matrix and type I collagen by immunohistochemical staining. The results were analyzed by ANOVA test and Post Hoc Bonferroni. The expression of metalloproteinase-1 matrix increased in treatment I. The increase was different significantly compared to the increase that occurred in control and treatment II. There was no significant difference between the control group and treatment II. The expression of type I collagen increased in treatment II. The increase was different significantly compared to the increase occurred in treatment I. However, there was no significant difference between treatment II and control. Thus, this study showed the administration of BM-MSC can increase the expression of type I collagen and decrease the expression of metalloproteinase-1 matrix.

IFAA2014-10-020**Synergistic effect of peripheral blood mononuclear cells (PBMCs) and bone marrow bm- derived mesenchymal stem cell (BM-MSC) on the percentage of integrin α 2 β 1 in full thickness burn in rats**Gusti Revilla¹, Eryati Darwin², Fedik A. Rantam³, Yanwirasti Yanwirasti¹*¹Anatomy Department of Medical Faculty Andalas University Padang, Indonesia; ²Histology Department of Medical Faculty Andalas University, Padang, Indonesia; ³Laboratory Institute of Tropical Disease (ITD) Airlangga University, Surabaya, Indonesia.***gustirevillaelok@yahoo.com*

Using both Bone Marrow-stem cell (BM-MSC) and peripheral blood mononuclear cells (PBMCs) from allogeneic donors as part of the therapy to heal the burn wound seems to give positive prospect for the future treatment. In this experiment, PBMC and rat BM- derived from mesenchymal stem cell were used as the therapy model. Immunocytochemistry was used as the method to characterize the phenotype of MSC, it was also used to express the integrin α 2 β 1. The rats with burn wound were divided into 2 kinds of group; the first group of rats was selected to control the use of PBS; while second group of rats was used as the treatment object that was medicated by the applying the combination of both BM-MSC and PBMC. Stem-cells subcutaneously administered dose applied to each rat was around of 2 x 10⁶ cells. The result showed that the increase the percentage of integrin α 2 β 1 and this result statistically showed significant differences ($p=0.037$). This research proves that the combination of BM-MSC and PBMC stem cell served can accelerate the healing process for the burn wound on rats through increasing the percentage of