ANDROLOGY Search Medline for FREE

Journal of Andrology, Vol 15, Issue 4 353–361, Copyright $^{\odot}$ 1994 by The American Society of Andrology

JOURNAL ARTICLE

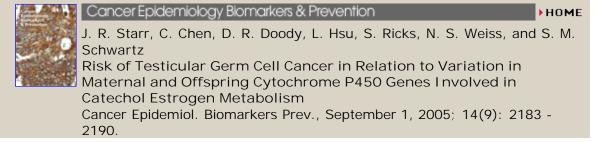
Lipid peroxidation and antioxidant enzyme activities in the rat testis after cigarette smoke inhalation or administration of polychlorinated biphenyls or polychlorinated naphthalenes

V. Peltola, E. Mantyla, I. Huhtaniemi and M. Ahotupa Department of Physiology, University of Turku, Finland.

Lipid peroxidation products and antioxidant enzyme activities were studied in the rat testis following exposures to cigarette smoke, polychlorinated biphenyls (PCBs), or polychlorinated naphthalenes (PCNs). Three hours after a single 1-hour period of smoke inhalation,

the levels of fluorescent chromolipids and thiobarbituric acid-reactive species (TBARS) were markedly increased in the testis (+49%, P < 0.01, and +43%, P < 0.05, respectively). Twelve hours after daily smoking for 1 hour, for 1, 5, or 10 days, such an increase was not found. Activities of the antioxidant enzymes superoxide dismutase (SOD), catalase, glutathione peroxidase (GSH-Px), glutathione transferase (GSH-Tr), or hexose monophosphate shunt (HMS) were not affected immediately, 3 hours, or 12 hours after a single smoking session. Twelve hours after smoking for 5 days, the activity of catalase was decreased (-16%, P < 0.05). Smoking exposures had no consistent effects on serum follicle-stimulating hormone (FSH), luteinizing hormone (LH), or testosterone concentrations. Single i.p. injections of PCB or PCN mixtures resulted in decreases in testicular SOD activity also decreased after both exposures (-30 to -42%, P < 0.05, at days 1-7 after PCB exposure, and -37 to -43%, P < 0.05, at days 3-7 after PCN exposure). Ninety days after the PCN exposure, activities of GSH-Px and GSH-Tr were decreased in the testis (-20%, P < 0.05, and -26%, P < 0.05, respectively). (ABSTRACT TRUNCATED AT 250 WORDS)

This article has been cited by other articles:



This Article

- Full Text (PDF)
- Alert me when this article is cited
- Alert me if a correction is posted

Services

- Similar articles in this journal
- Similar articles in PubMed
- Alert me to new issues of the journal
- Download to citation manager

Citing Articles

- Citing Articles via HighWire
- Citing Articles via Google Scholar

oogle Scholar

- Articles by Peltola, V.
- Articles by Ahotupa, M.
- Search for Related Content

PubMed

- PubMed Citation
- Articles by Peltola, V.
- Articles by Ahotupa, M.



Human & Experimental Toxicology

HOME

P Murugesan, J Senthilkumar, K Balasubramanian, M M Aruldhas, and J Arunakaran I mpact of polychlorinated biphenyl Aroclor 1254 on testicular antioxidant system in adult rats

Human and Experimental Toxicology, February 1, 2005; 24(2): 61 - 66. [Abstract] [PDF]



HUMAN REPRODUCTION

HOME

R. K. Sharma, F. F. Pasqualotto, D. R. Nelson, A. J. Thomas Jr, and A. Agarwal

The reactive oxygen speciestotal antioxidant capacity score is a new measure of oxidative stress to predict male infertility Hum. Reprod., November 1, 1999; 14(11): 2801 - 2807. [Abstract] [Full Text] [PDF]



THE JOURNAL OF CLINICAL ENDOCRINOLOGY & METABOLISM >HOME

K. Erkkilä, V. Hirvonen, E. Wuokko, M. Parvinen, and L. Dunkel N-AcetyI-L-Cysteine Inhibits Apoptosis in Human Male Germ Cells in Vitro J. Clin. Endocrinol. Metab., July 1, 1998; 83(7): 2523 - 2531.

[Abstract] [Full Text]

HOME HELP FEEDBACK SUBSCRIPTIONS ARCHIVE SEARCH TABLE OF CONTENTS

Copyright © 1994 by The American Society of Andrology.