

OXYGEN FREE RADICALS AND THE TISSUE INJURY

Editors

B. MATKOVICS, M. D., C. Sc.

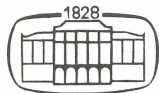
Biological Isotope Laboratory
József Attila University
Szeged, Hungary

D. BODA, M. D., D. Sc.

Department of Pediatrics
Szent-Györgyi Albert University Medical School
Szeged, Hungary

H. KALÁSZ, Ph. D., D. Sc.

Department of Pharmacology
Semmelweis University of Medicine
Budapest, Hungary



AKADÉMIAI KIADÓ, BUDAPEST 1988

CONTENTS

Preface	v
ALTORJAY, I., SÁRI, B. and DALMI, L. Investigation of the influence of paracetamol on the acid haemolysis of erythrocytes in vivo and in vitro	1
ANTAL, M., ROZSNYAY, Z., GENTI, Gy. and MERÉTEY, K. Comparison of luminol and lucigenin-enhanced chemiluminescence of granulocytes. Study on antiinflammatory drugs	11
BARABÁS, K., SZABÓ, L. and MATKOVICS, B. The search for ideal antidote treatment in Gramoxone® intoxication	19
BĀR, V., TÖRÖK, B., RÓTH, E. and ROZSNYAI, I. Studies on the biochemical correlations of the structure and mechanism of action of dihydroquinole-type, water- and lipid-soluble synthetic radical scavengers	31
BELÁGYI, J. and TÖRÖK, B. The effects of MTDQ-DA in biological and model systems. An EPR study	39
FACSKÓ, A. and ÉDES, I. Lipid peroxidation and reduced glutathione contents in cataractous human lenses	45
GYENTI, Gy., ANTAL, M., HORVÁTH, E., BÁLINT, G. and MERÉNYI, K. Free radicals in rheumatic diseases	51
BLÁZOVICS, A., SOMOGYI, A. and FEHÉR, J. Effects of dihydroquinoline antioxidants on hepatic microsomal enzyme activity	61

DEÁK, Gy., NÉKÁM, K., MÜZES, Gy., ROMÁNY, A., VERECKEI, A., LÁNG, I. and FEHÉR, J. Effects of in vivo therapy with 4-amino-5-imidazole- carboxamide-phosphate (Aica-P) on cellular immunoreactivity	69
DELY, M. ZSOLDOS, A., PUPPI, A. and TIGYI, A. Comparison of the changes of tissue redox-state potential and lipid peroxidation in different muscles of the frog	79
ÉDES, I., PIROS, Gy. and CSANÁDY, M. Effects of chronic alcohol ingestion on the myocardial lipid peroxidation and glutathione metabolizing enzyme contents in rats	85
FEHÉR, J. The significance of free radical reactions in human pathology	91
FERDINANDY, K. The effect of free radicals on the leukocyte alkaline phosphatase activity	105
GÓTH, L. Physiology and structure of catalase and its determination in clinical practice	111
HORVÁTH, E., ANTAL, M., BÁLINT, G. and GENTI, Gy. Influence of free radicals on biochemical parameters of synovial fluid in rheumatoid arthritis and osteoarthritis	119
JÓZWIAK, Z. and LEYKO, W. Physical and physico-chemical detection of free radicals	127
KENYERES, P., MORVAY, G., TEKERES, M. and TÖRÖK, B. The fading of evoked muscle potential in general hypoxia before and following MTDQ-DA administration in dogs	149
KOO, E., ANTAL, M., MERÉTEY, K. and GERENCSÉR, F. Study on lipid peroxidation in ragweed pollinosis	157
KÖTELES, G.J. Spatiotemporal relationship of ionizing radiation- induced free radicals and their biological effects	163
LÁSZLÓ, A., MATKOVICS, B. and SZABÓ, L. Lipid peroxidation and antioxidant enzymes in erythrocytes from 21-trisomic Down's patients	175
LOSONCZI, B. and LENGYEL, Á. Oxidation of steroids by singlet oxygen	181

LOVAS, M., SZABÓ, L., MATKOVICS, B. and FISCHER, E. SOD levels in earthworm (<i>Lumbricus terrestris</i>) parts	185
MATKOVICS, B., SZABÓ, L., ALFÖLDI, E. and GÁL, Gy. Antioxidant enzyme changes in human blood stored at 4-5°C	191
MÉZES, M. Effects of serotonin receptor blockers on the lipid peroxidation and activities of some antioxidant enzymes of chicken brain homogenates	203
MÉZES, M. Changes in lipid peroxidation and activities of some antioxidant enzymes of chicken brain homogenates during early postnatal development	211
MÜZES, Gy., NÉKÁM, K., DEÁK, Gy., VERECKEI, A., ROMÁNY, A., LÁNG, I. and FEHÉR, J. Total SOD activities of erythrocytes and lymphocytes in chronic alcoholic liver disease before and after silibinin (Legalon®) therapy	217
MÓZSIK, Gy., CZEGLÉDI, B., SÜTŐ, G., VINCZE, Á. and ZSOLDOS, T. Effects of atropine and cimetidine administered in cytoprotective and antisecretory doses	225
NAGY, J.T., FÜLÖP, T. Jr., PARAGH, G. and FÓRIS, G. Clinical significance of oxidative processes in human granulocytes	235
Zs.-NAGY, I. The role of oxygen free radicals in cellular ageing: a review	247
NÉMETH, I. and BODA, D. Oxidized and reduced glutathione levels in blood samples from premature infants with RDS and critically ill children	269
OROSZLÁN, G., LAKATOS, L. and KARMAZSIN, L. Free radical-induced diseases in the neonate	279
PÁR, A., MÉZES, M., NÉMETH, P., SZEKERES-BARTHO, J., MAGYARLAKI, T., PAÁL, M., KERÉKES, E. and JÁVOR, T. In vivo antioxidant and immunostimulatory effects of a hepatoprotective flavonoid drug, cyanidanol, in patients with chronic liver disease	293
PATAKI, L., MATKOVICS, B., MOLNÁR, A., NOVÁK, Z. and VARGA, Sz. I. Beflavin® (vitamin B ₂) treatment in pathological jaundice of the newborn due to ABO incompatibility	297

PÉNZES, I., BÄR, B. and ILLEI, J. Role of free radical reactions and recently developed possibilities of pharmacotherapy in adult respiratory distress syndrome	307
POLLÁK, Zs., SULYOK, S., KEMENES, I. and FEHÉR, J. Pathological free radical reactions in adolescence; model experiments in young rats	321
HAI, DO, QUY and MATKOVICS, B. Ethanol intoxication and superoxide dismutase activity levels	331
RÖTH, E., TÖRÖK, B., BÄR, V. and TEMES, Gy. Antioxidant protectin against free radical-mediated myocardial injury	341
SÁRKÖZI, A.M., MÉZES, M. and BARTOSIEWICZ, G. Examination of oxygen-derived free radicals in osteoarthrotic patients treated with a glycosaminoglycan polysulphate	349
SÜTÖ, G., VINCZE, Á., ZSOLDOS, T. and MÓZSIK, Gy. Correlation between free radicals and the development of ethanol-induced gastric mucosal damage	357
SZIGETI, Z. and VÁGUJFALVI, D. Protective mechanisms in plants against photodestruction of chlorophyll	365
TÖRÖK, B., RÖTH, E. and MATKOVICS, B. Tissue injuries induced by free radicals, and their interpretation	371
VARGA, Sz. I., MATKOVICS, B., PATAKI, L., NOVÁK, Z. and MOLNÁR, A. Correlation between the activity of red blood cell antioxidant enzymes and lipid peroxidation during the Bflavin® catalysed photosensibilization	377
VINCZE, Á., SÜTÖ, G., ZSOLDOS, T. and MÓZSIK, Gy. Correlations between free radicals and the prostacyclin methyl ester-3-cyclodextrin complex (PCCD)-induced gastric cytoprotective effect in experimental ulcer	389
FRITSCH, B., DIECKMANN, A., MENZ, B., WENDEL, A., HEMPELMANN, E., FRITSCH, K. G., STAHL, W., EISENBRAND, G., SPIRA, D. T., SCHIRMER, H., FRITSCH, G. and JUNG, A. Glutathione and peroxide metabolism in malaria parasitized erythrocytes	397
Subject Index	407