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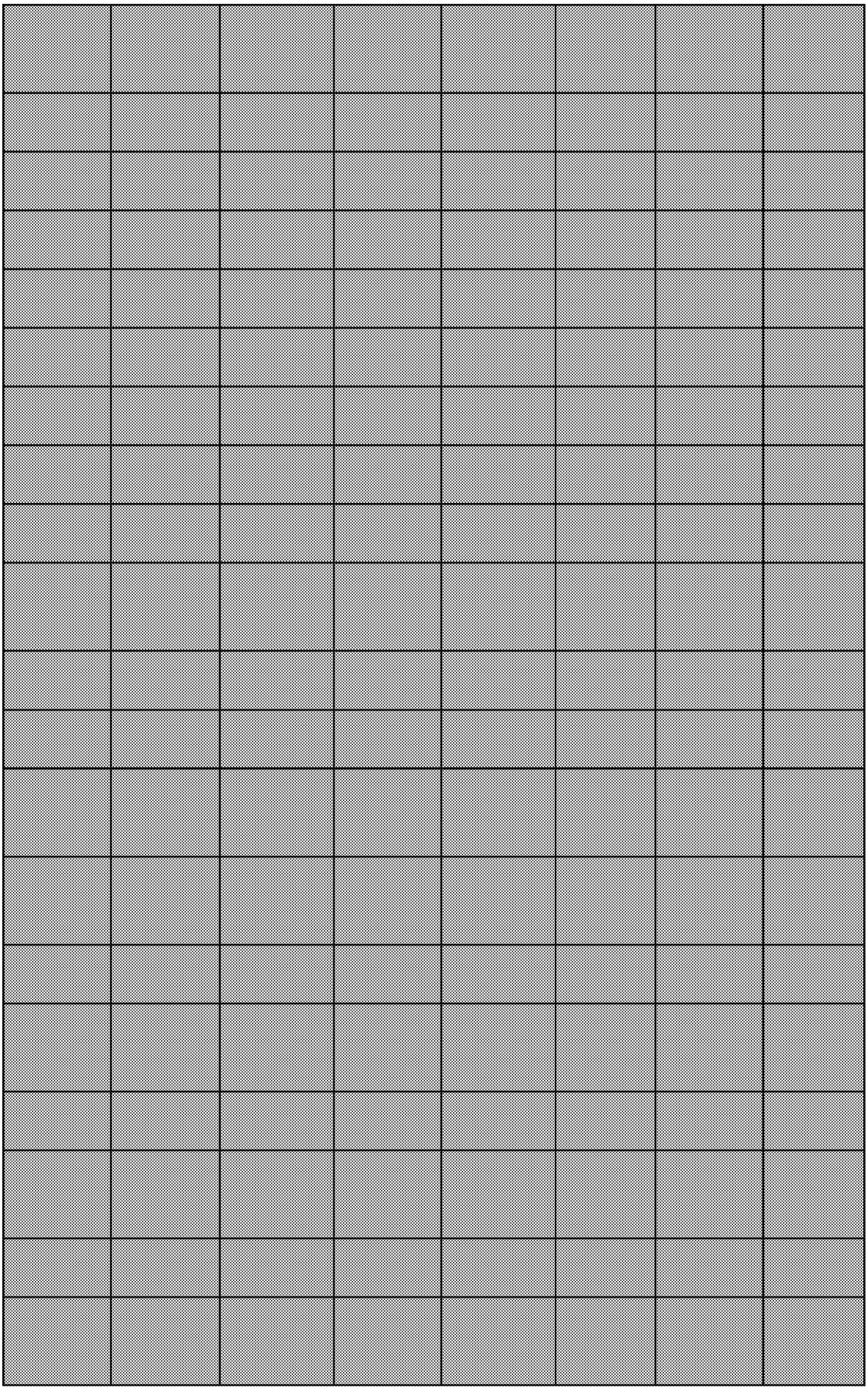

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The dielectrophoretic (DEP) crossover method has been applied to the detection of cell responses to toxicants. Time and
In multi-cellular organisms, failure to properly regulate cell-cycle progression can result in inappropriate cell death or un
Endogenous or exogenous substances that are toxic to dopaminergic cells have been proposed as possible cause of idiop
During drug discovery, assessment of renal safety for a compound is important for further development of a candidate d
Effects of recombinant beta-carotene on the resistance of E. coli culture to menadione and paraquat were studied. The p
Coping with the continuous production of free radicals is a daily routine of the cell. Despite their toxicity, the reactive oxy
Vibrio cholerae non O1 26/06, a non-pathogenic strain, was subjected to treatment by different concentration of paraqua
To study the mechanism(s) by which manganese-containing superoxide dismutase (MnSOD) mediates cellular growth inh
In the green alga, Chlamydomonas reinhardtii, externally added abscisic acid (ABA) partly released the growth suppressi
To study the mechanism of toxicity of paraquat and formaldehyde, the response of oxidant-exposed cultured NIH3T3 cel
A water-soluble anthraquinone derivative (2-[methylamino-N-(1'-methylethyl)]-9,10-anthraquinone monophosphate), p
Paraquat (1,1'-dimethyl-4,4'-bipyridylium dichloride) is a widely used herbicide and is highly toxic to human and animals.
The mitochondrial production of reactive oxygen species has been implicated in the anticancer activity of furanonaphtho
Cyanidin 3-glucoside (C3G) isolated from black rice was investigated for hepatoprotective effects in HepG2 cells under ox
The activation of cell division and oxidative stress responses has been investigated in the case of leaf protoplast-derived
To develop new and safe approaches to protect and preserve the function of the human corneal endothelium (HCE), we
This study examined the neuroprotective effects of kobophenol A (kob A), oligomeric stillbene, and a resveratrol tetrame

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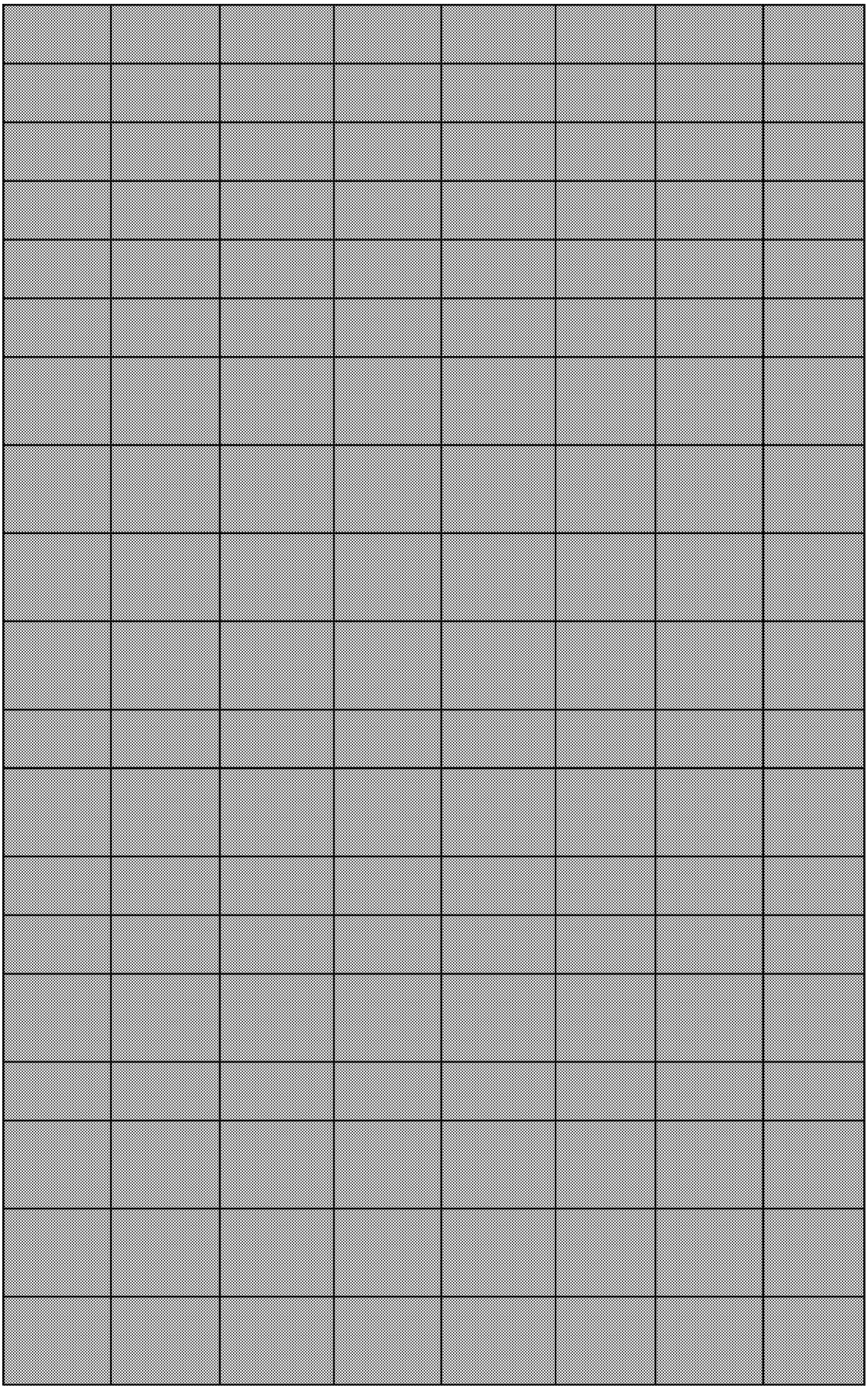

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TRP-2 (dopachrome tautomerase) is a melanogenic enzyme whose expression was recently reported to modulate melan
Plant programmed cell death (PCD) plays an important role in plant growth and development as well as defensive respor
Nitrogen fixation (NF) in legume nodules is very sensitive to environmental constraints. Nodule sucrose synthase (SS; EC
Objective: To investigate whether genetically modified mouse neural stem cells (NSC) expressing recombinant human ne
Dielectrophoretic field-flow fractionation (dFFF) was applied as a contact-free way to sense changes in the plasma memb
The genotoxic (clastogenic) effect of herbicide paraquat (10(-6) mol/l to 10(-4) mol/l) with the connection to its ability to
Herbicides are toxic for amphibians, influencing various developmental stages. in particular, paraquat and glyphosate ha
Paraquat, a nonselective herbicide and pesticide, has been implicated as an environmental toxicity which caused cell dea
The manganese superoxide dismutase (MnSOD) ala16val polymorphism has been associated with various diseases includ
P>Reactive oxygen species (ROS) have emerged as signals in the responses of plants to stress. Arabidopsis Enhanced Dise
Two phylogenetically distant types of test-systems root tip meristems of barley (Hordeum vulgare) and human lymphocy
Bidens pilosa L. is a weedy species in the Asteraceac producing dimorphic one-seeded fruits, with longer black seeds cen
This work describes the alterations in the levels of reactive oxygen species (ROS) in the oxidative stress-sensitive mutant
The antioxidative enzyme copper-zinc superoxide dismutase (Sod1) is an important cellular defence system against react
Paraquat is a highly toxic herbicide that is used in most countries without restriction. The cytotoxic action of paraquat is r
The herbicide fluroxypyr is widely used for controlling weeds and insects but intensive use of fluroxypyr has resulted in it
The freshwater microalga Haematococcus pluvialis exhibits a unique morphological response to environmental stress, ac

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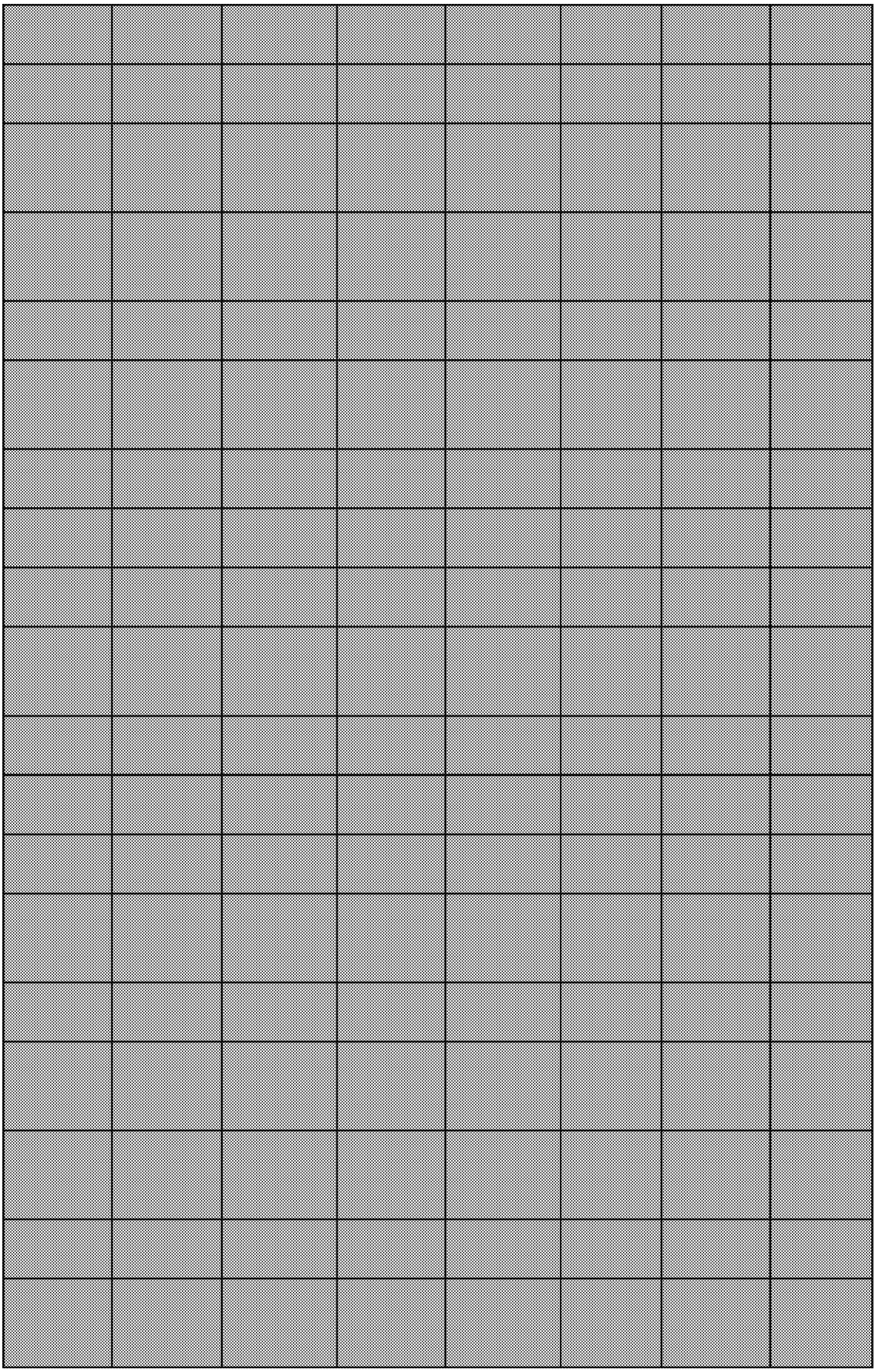

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The use of herbicides constitutes the principal method of weed control, but the introduction of these compounds into the
Plants are often exposed to external biotic or abiotic agents that can damage cells. Biotic agents include molecules produ
Liver plays an important role in biological detoxication of xenobiotics. During this process, one can observe the inactivati
Although the strategies routinely adopted to limit production of carcinogenic aflatoxins by Aspergillus parasiticus and As
Plant defense responses to stress have attracted interest because of their similarity to reported mammalian stress respo
A number of epidemiological studies have demonstrated a strong association between the incidence of neurodegenerati
Plant cells possess a number of membrane bound organelles that play important roles in compartmentalizing a large nur
Although the underlying cause of Parkinson's disease (PD) is not well characterized, epidemiological studies suggest that
Effects of oxidative stress induced by prooxidants (herbicide paraquat, salicylic acid and LiCl) on functional activity and ul
Huntington's disease (HD) is a neurodegenerative disorder caused by a mutation in the gene encoding the huntingtin pro
Mutations in leucine-rich repeat kinase 2 (LRRK2) are a major cause of familial Parkinsonism, and the G2019S mutation o
Plants use programmed cell death (PCD) as a tool in their growth and development. PCD is also involved in defense agair
In the lung, chemical redox cycling generates highly toxic reactive oxygen species that can cause alveolar inflammation a
Humans are exposed to various chemical mixtures daily. The toxic response to a mixture of chemicals could be potentiat
The effect of hydrogen peroxide (H2O2) on carotenoid synthesis in Chlamydomonas reinhardtii under light-induced stres
Valproic acid (VPA), an anticonvulsant and mood-stabilizing drug, is widely used for the treatment of different types of se
A significant number of low molecular weight metal complexes as well as metal-free compounds that are capable of scav
Bioconjugated quantum dots (QDs) with E. coli cells (bioconjugates) were employed as fluorescent switches that turn-off
The excess oxygen concentration in the photosynthetic membranes of functioning oxygenic photosynthetic cells was esti

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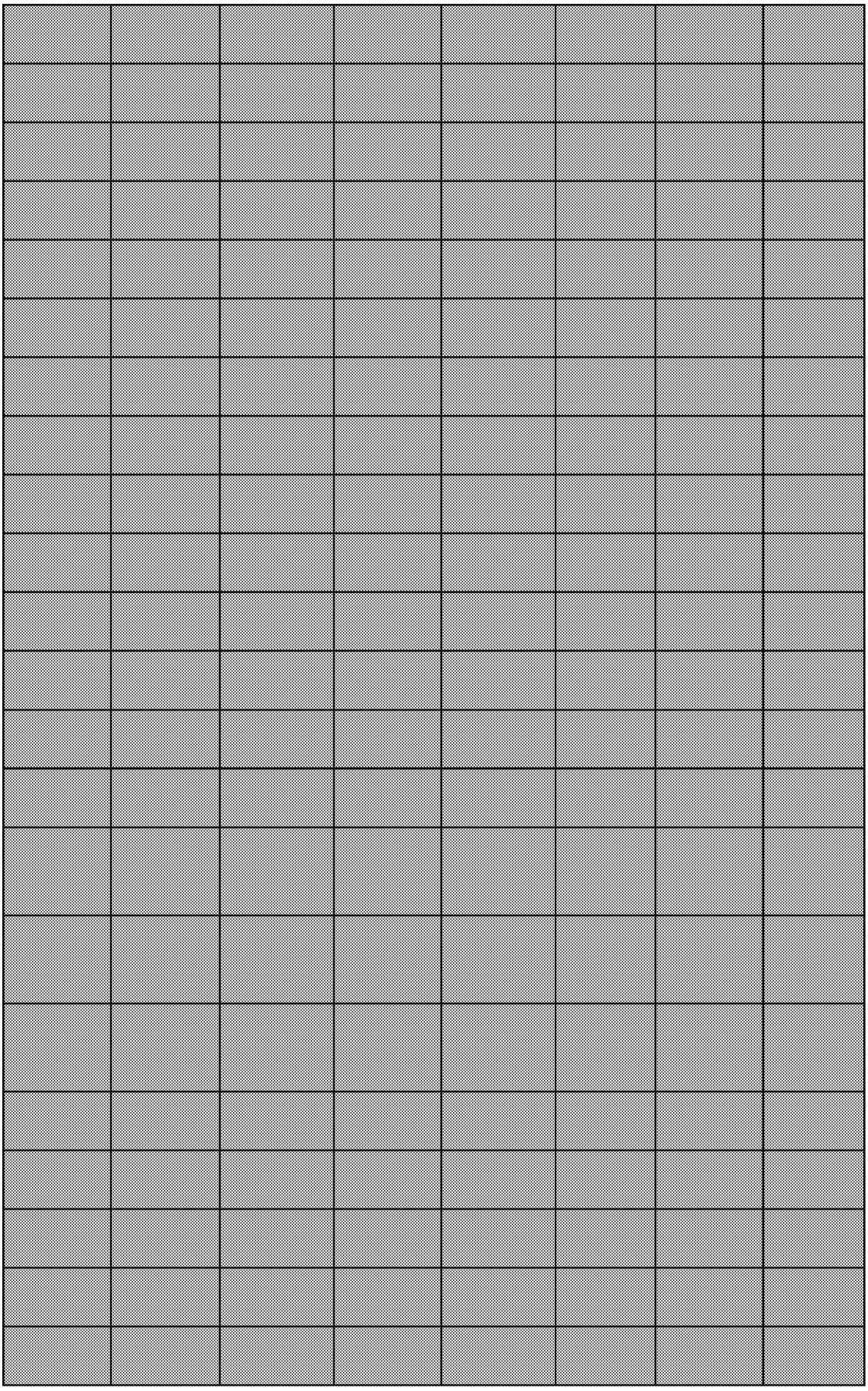

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Environmental factors have been implicated in the pathogenesis of neurodegenerative diseases. Maneb (MB) and manco
Overexpression and/or activation of HER2 confers resistance of cancer cells to chemotherapeutic drugs. NRF2 also gives
Treatment with rotenone, both in vitro and in vivo, is widely used to model dopamine neuron death in Parkinson's diseas
Purpose Retinal degenerations are a heterogeneous group of diseases in which there is slow but progressive loss of phot
Environmental stimuli such as UV, paraquat, and H2O2 can induce reactive oxygen species (ROS) production and impair t
P-glycoprotein (P-gp) is an ATP-dependent efflux pump encoded by the MDRI gene in humans, known to mediate multidr
Chlamydomonas reinhardtii cells were exposed to a sublethal concentration of the widespread herbicide atrazine for 3 a
Previous studies indicate that replicative lifespan in daughter cells of Sacchraromyces cerevisiae depends on the preferen
Protein functions are tightly regulated by their subcellular localization in live cells, and quantitative evaluation of dynami
1,6,6a-Trithia-3,4-diazapentalenes, which are hypervalent compounds, were reduced electrochemically and the resulting
Oxidative stress may affect the malaria parasite at each stage of its development. Ascorbic acid had a stage-dependent e
Iron is a critically important metal for a wide variety of cellular events. The element holds this central position by virtue o
Interleukin-1 (IL-1) and tumor necrosis factor (TNF) selectively induce mitochondrial manganese superoxide dismutase (M
Genetically determined chromosomal instability entails, among other sequelae, a condition of elevated cancer risk. Patie
Paraquat is known to affect all green plants and other eukaryotic organisms including mammalian cells. The aim of this st

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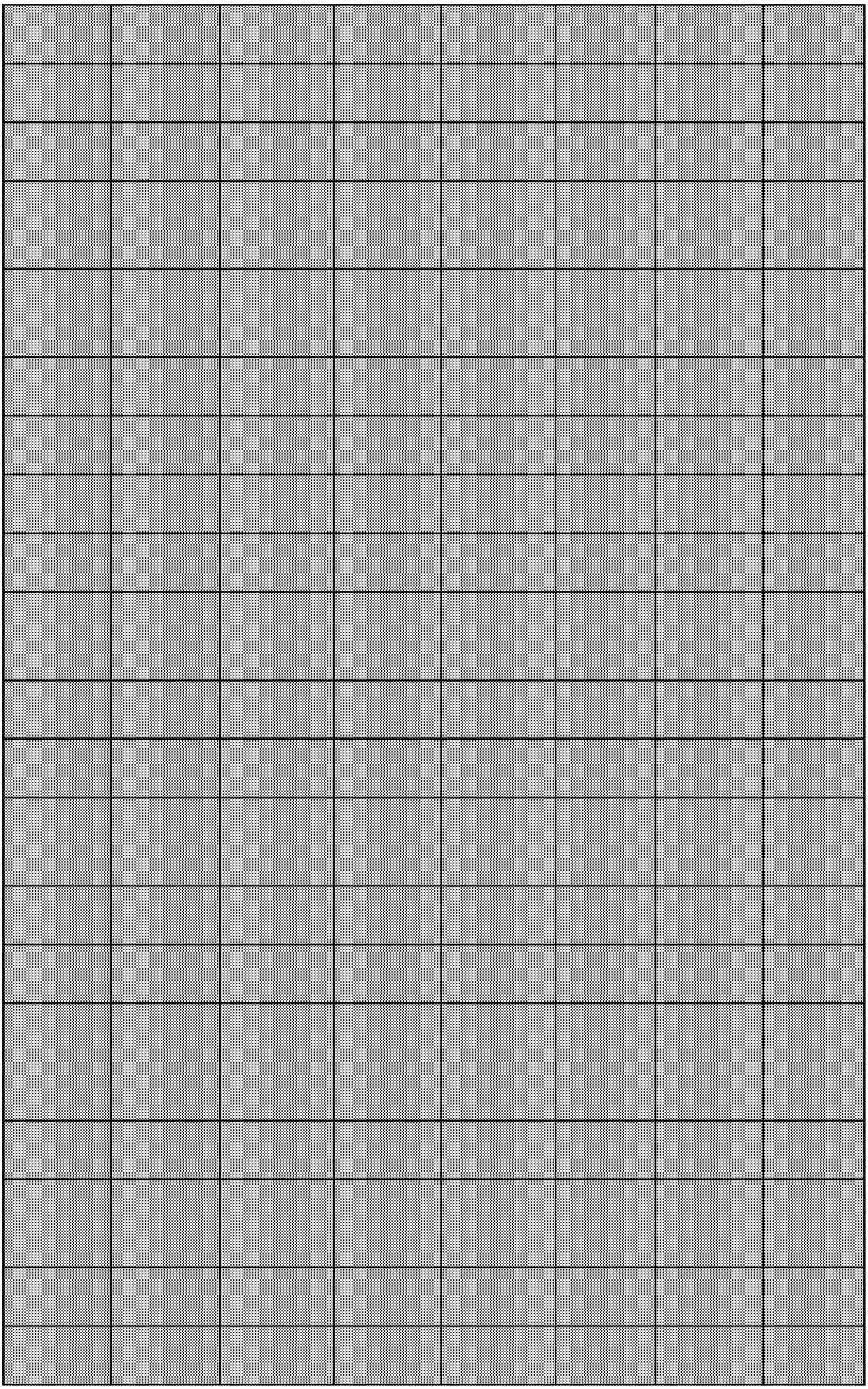

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The discovery of missense mutations leading to reduced enzymatic activity in the copper/zinc superoxide dismutase (SOI
Oxygen radicals have been widely implicated in neoplastic transformation; however, little is known regarding their mode
Rat hepatocytes cultured without (normal cells) and with 1 mM alpha-linolenic acid-bovine serum albumin complex (alpl
The role of xanthine oxidase in paraquat toxicity was investigated using cultured bovine pulmonary artery endothelial ce
The alveolar epithelial cells of the lower respiratory tract are exposed continuously to injurious agents, including oxygen
Lindane and paraquat induce biochemical changes in the liver. In order to specify their molecular impact at the cellular le
The effects promoted by the herbicides paraquat, dinoseb and 2,4-D on the ultrastructure of isolated hepatocytes are rep
The intracellular ultrastructural changes induced by the new antitumour agent 2-methylnaphtho[2,3-b]furan-4,9-dione (F
ABC transporters including MRP2, MDR1 and BCRP play a major role in tissue defense. Epidemiological and experimental
1. 1. The herbicide Gramoxone® (the active ingredient is paraquat) actively accumulates in the lung in the mammalian or
Alginate-immobilized and free Selenastrum capricornutum Printz cells were compared for use in algal toxicity assays. Ch

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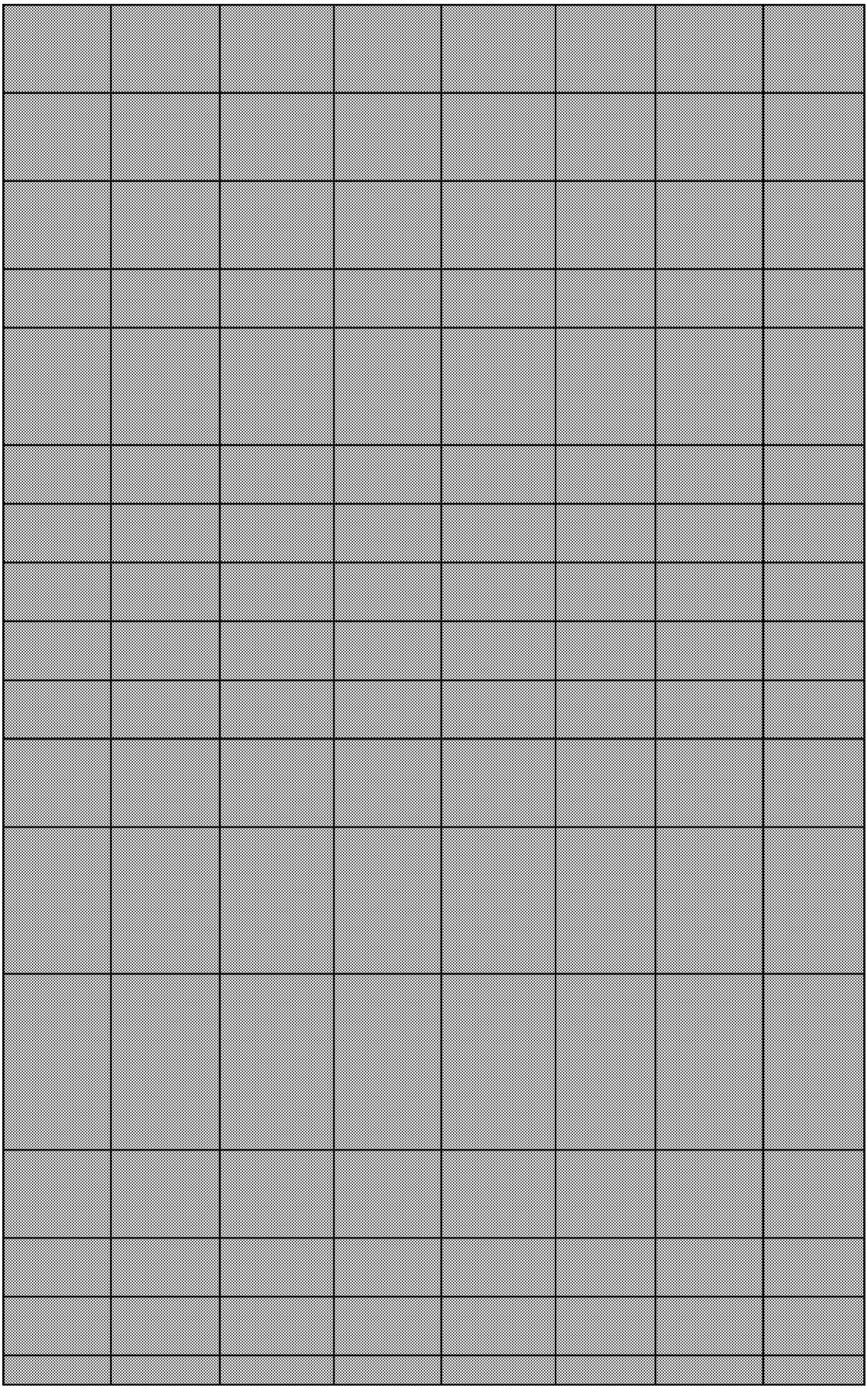

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Paraquat (PQ) and diquat (DQ) produced a dose-dependent inhibition of cellular proliferation in the P388D1, “macrophag
Many acute poisonings lack effective and specific antidotes. Due to both intentional and accidental exposures, paraquat (
Paraquat and the structurally similar polyamines, such as putrescine and spermidine, are accumulated actively and select
Aerobes require oxygen for metabolism and normal free radical formation. As a result, maintaining the redox homeostas
Resveratrol has gained importance as a naturally available medicine for the prevention of inflammatory and neurodegen
A crucial step in any cytology application begins with the placement of cells on slides in a manner that provides good pre
Conditions for flow cytometric evaluation of the intracellular bacterium, Wolbachia pipientis, in infected mosquito cells a
A one-dimensional age-based population balance model of the cell cycle is proposed for a mouse–mouse hybridoma cell
Activity of the pentose phosphate pathway of glucose metabolism was measured in isolated granular pneumocytes unde
Cytotoxic effects of aquatic pollutants on microalgae are very heterogeneous, and they are influenced by environmental
The dipyridilium compound, paraquat, has been used in conjunction with mouse C3H 10T12 cells to determine if this sup
The present work reports data regarding effects of an induced oxidative stress on the mainly expressed isoforms of UDP-
We reported earlier that the frequency of chromosomal aberrations observed in Fanconi's anemia lymphocyte cultures c
5-Bromodeoxyuridine (BrdU) induces or suppresses senescence-associated genes in any types of mammalian cells. From
Multidrug resistance type 1 P-glycoproteins (P-gp) and multidrug resistance associated proteins (MRP) were studied in di
Although the redox cycling of paraquat (PQ) and the resultant “activated oxygen” generation are important in toxicity de
Tumor necrosis factor (TNF) induces synthesis of manganese superoxide dismutase (MnSOD). It was previously shown tha
We have examined the effect of difluoromethylornithine on the ability of B16 melanoma cells to take up putrescine and
A1 adenosine receptors are highly expressed in the central nervous system. Mitochondrial function is a major player in a
This issue of Mycological Research News features: Fungal irritability and survival mechanisms; In this issue; Genetic mark

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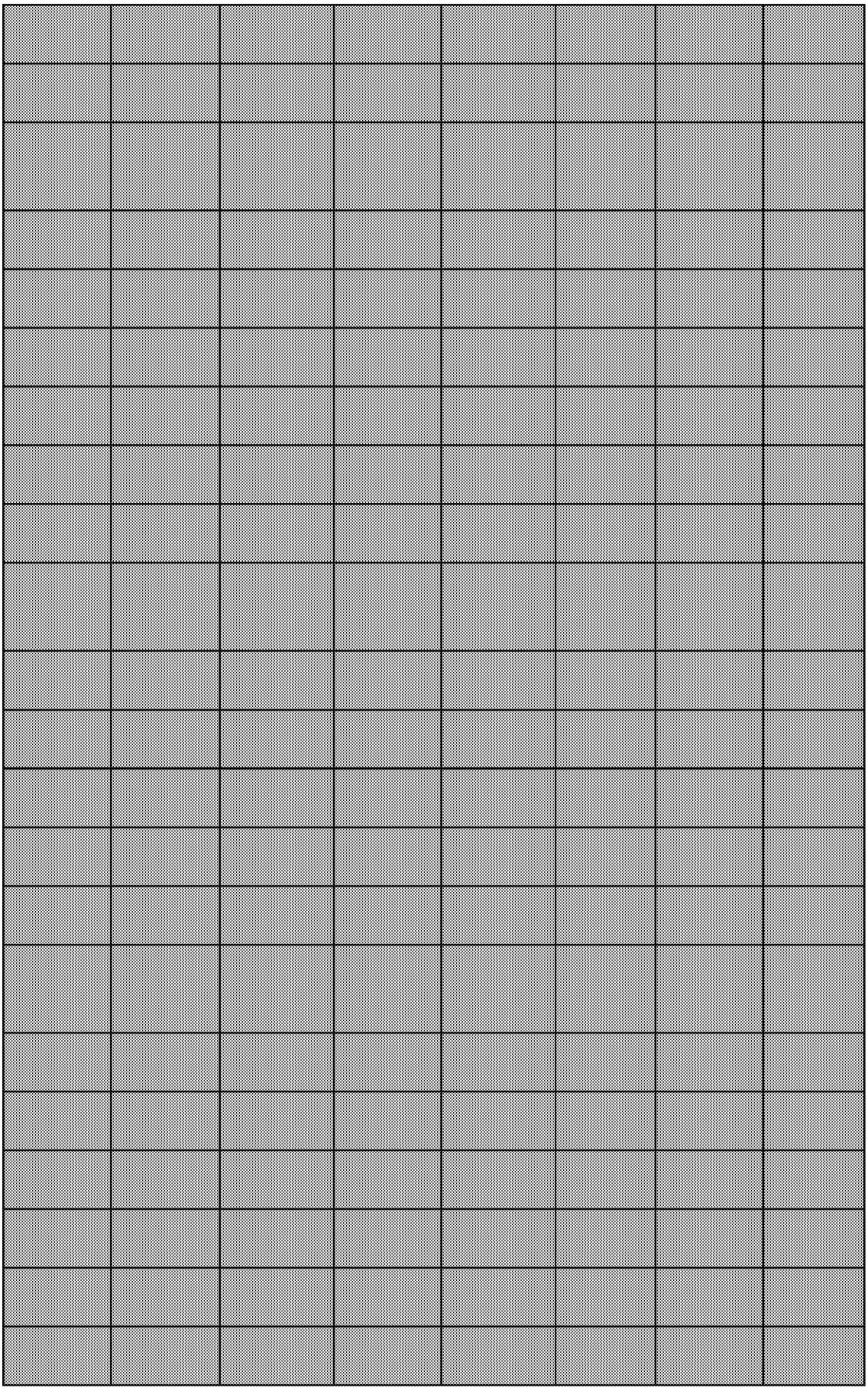

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Membrane unsaturated fatty acid oxidation has been suggested as a mechanism of toxicity for a variety of activated oxyg
Lung epithelial type II cells are responsible for synthesising and secreting pulmonary surfactant which reduces surface te
Recent studies have shown that up-regulation of autophagy may be a tractable therapeutic intervention for clearing dise
The polyamines spermidine and spermine are essential for the growth of mammalian cells. This review describes the pro
Tapping panel dryness (TPD) is a complex physiological syndrome found widely in rubber tree (Hevea brasiliensis) planta
The cytotoxicity of 10 chemicals from the Multicentre Evaluation of In vitro Cytotoxicity (MEIC) list (nos 21–30) was evalu
Cultured cell lines are routinely used for in vitro toxicity screens, reducing the requirement for animal studies during the
The genotoxic potential of paraquat was evaluated in mouse somatic (bone marrow) and germ (spermatozoa) cells. Two
Serum and glucocorticoid-regulated kinase 1 (sgk1) belongs to a family of serine/threonine kinases that is under acute tr
P-glycoprotein (P-gp) is an efflux pump belonging to the ATP-binding cassette transporter superfamily expressed in sever
Paraquat (PQ) is an extremely toxic herbicide upon oral ingestion that lacks a specific antidote. In case of intoxication, tre
Oxidative stress is reported to be a key malefactor in pesticides-induced toxicity. Xanthine oxidase (XO) is implicated in p
Mechanistic aspects of paraquat monocation radical (PQ.+ and copper involvement in paraquat toxicity have been exami
The genotoxic potential of the herbicide paraquat (PQ), an intracellular generator of superoxide, was comparatively teste
We previously identified the Arabidopsis thaliana-derived decapeptide OSIP108, which increases tolerance of plants and

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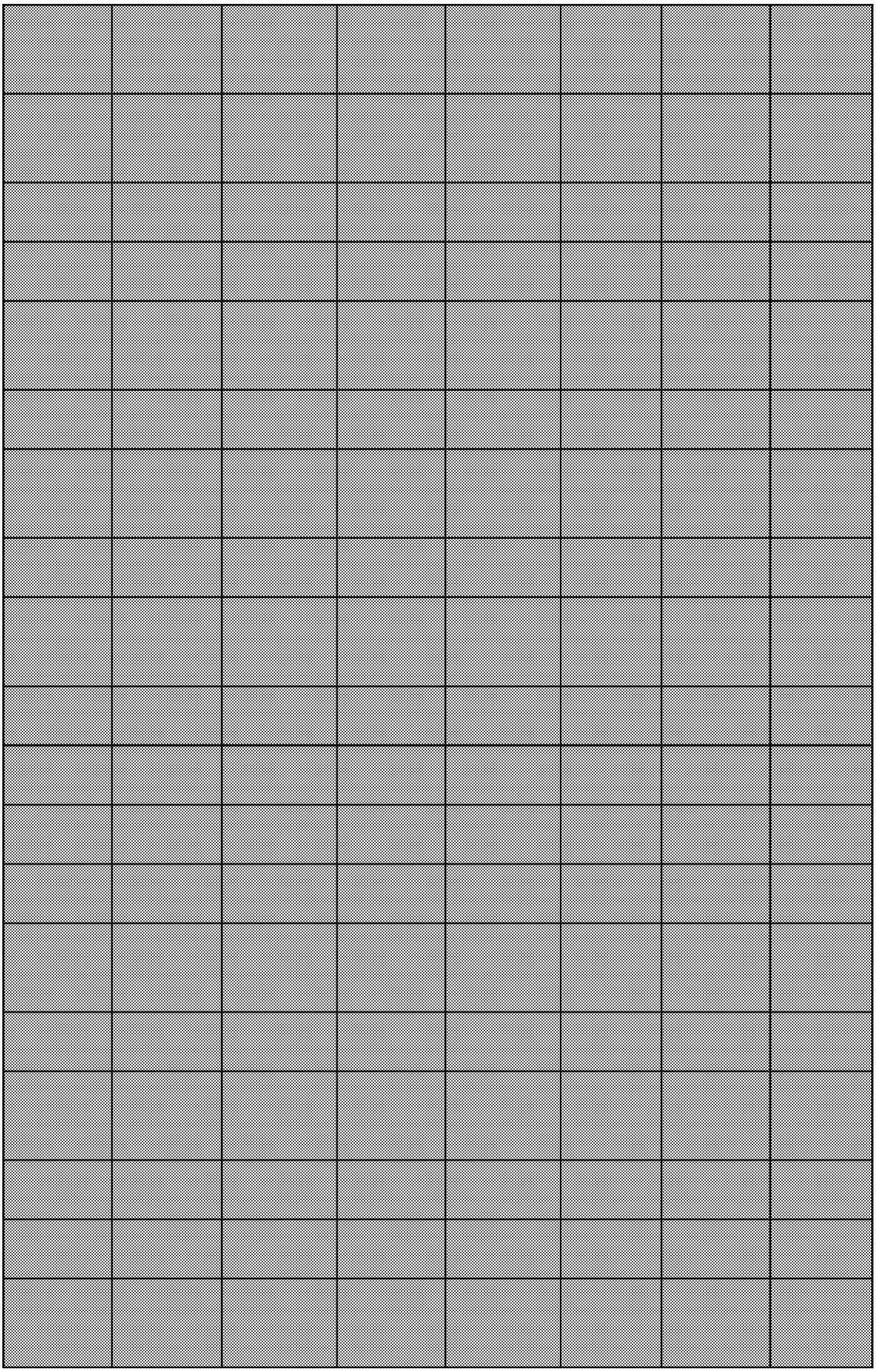

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Workplace health promotion is a business management system that aims to promote and improve the health situations
Effects of selected herbicides and respiratory inhibitors on leakage from tobacco (Nicotiana tabacum) cell suspension cult
Bean genotypes (Phaseolus vulgaris) selected for high or low sensitivity to oxidants showed similar stress responses to o
Paraquat toxicity has been associated with the generation of free radicals in alveolar epithelial cells in which paraquat sp
Carbonylation is an important oxidative modification of biomolecules and widely accepted as a biomarker of oxidative st
Environmental pollutants parathion, bisphenol A and paraquat were not systematically studied towards the effects on th
Paraquat causes failure of multiple organs including the liver in humans. The kinetics and mechanism of paraquat intoxic
Purpurogallin (PPG) is an active cytoprotector found in certain oak barks. We have shown that PPG prolongs the survival
The development of functional nanostructured materials, which show unique and versatile characteristics, is highly desir
Paraquat (PQ) is the third most extensively used herbicide in the world, causing thousands of deaths due to accidental or
Pulmonary fibrosis is prevalent in Paraquat (PQ) poisoning. Transforming growth factor β1 (TGF-β1)-induced epithelial–m
Paraquat concentrations were determined in specific brain areas of rats systemically treated with different doses of the
Diethyldithiocarbamate (DEDTC) given orally to rats without any addition of copper considerably increased the concentra
MPTP (1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine) produces an irreversible parkinsonism in primates. Recent evidenc
Expression of the selective nigrostriatal neurotoxicity of 1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine [MPTP] requires it
The development of an organism includes periods that can be critical for its normal maturation. One such appears to occ
Neuron density and distribution of the NADPH-diaphorase positive neurons were studied in the fundus, corpus and antru
The present article reviews the results of experimental studies on paraquat neurotoxicity, started by our group several ye

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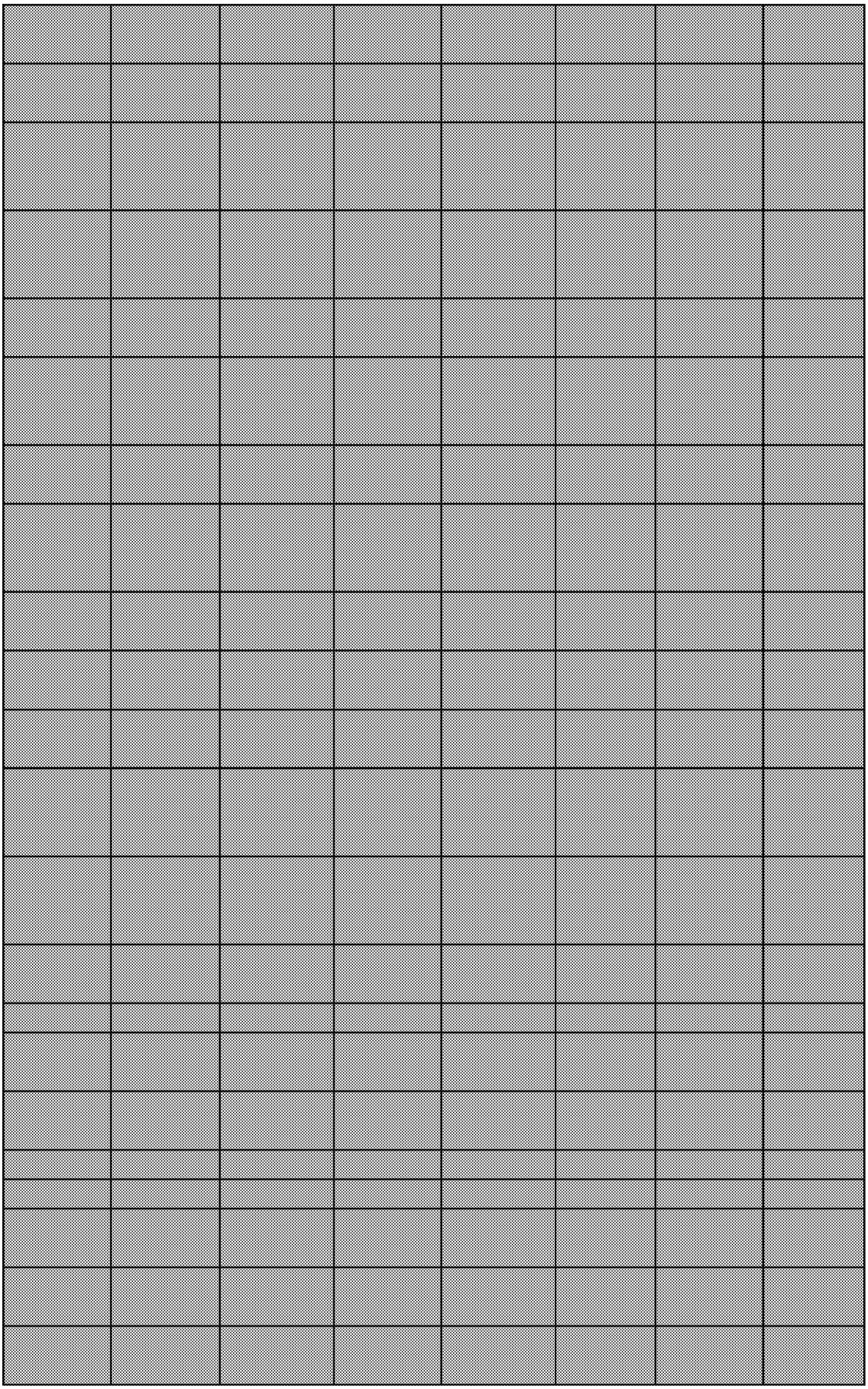

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Neuropathological effects of the pesticides paraquat (PQ, a herbicide) and triphenyltin (TPT, a fungicide) were studied or
Apoptosis plays a major role in motor neuron survival during developmental cell death, after axotomy, and in motor neu
Calorie restriction (CR) is known to prolong the life span and maintain an active immune function in aged mice, but it is st
The pigmented neurones of the substantia nigra are typically lost in Parkinson's disease; however, the possible relation b
Hypopituitary dwarf mice exhibit a heightened antioxidative capacity and live extensively longer than age-matched contr
Oxidative stress and mitochondrial dysfunction have been linked to neurodegenerative disorders such as Parkinson's and
Neurological disorders in humans can be modeled in animals using standardized procedures that recreate specific patho
Neurotoxins, in the general sense, represent novel chemical structures which when administered in vivo or in vitro, are c
In Parkinson's disease (PD) there is a selective loss of certain midbrain dopaminergic (DA) neurons. The most vulnerable
Iron accumulation is associated with age-related neurodegenerations and may contribute to age-related increased susce
Humans are routinely exposed to a vast array of environmental neurotoxicants, including pesticides, endocrine disrupter
Parkinson's disease is a progressive neurological disorder associated with selective degeneration of nigrostriatal dopami
Fluoro-Jade (FJ) and its derivatives are widely used for histological staining of neurons undergoing neurodegeneration. W
Animal models, consistent with the hypothesis of direct interaction of paraquat (PQ) and 1-methyl-4-phenyl-1,2,3,6-tetra
While ferritin elevation within dopaminergic (DA) neurons of the substantia nigra (SN) is protective against neurodegene
Compounds that interact with microtubules, such as paclitaxel, have been shown to possess protective properties agains
The classical animal models of Parkinson's disease (PD) rely on the use of neurotoxins, including 1-methyl-4-phenyl-1,2,3
Immunophilin FK506-binding protein 52 (FKBP52) is a cochaperone that binds to the progesterone receptor (PR) to optim
Radiation-induced neurotoxicity is a well-characterized phenomenon. However, the underlying mechanism of this toxicit
Chronic exposure to agricultural chemicals (pesticides/herbicides) has been shown to induce neurotoxic effects or results

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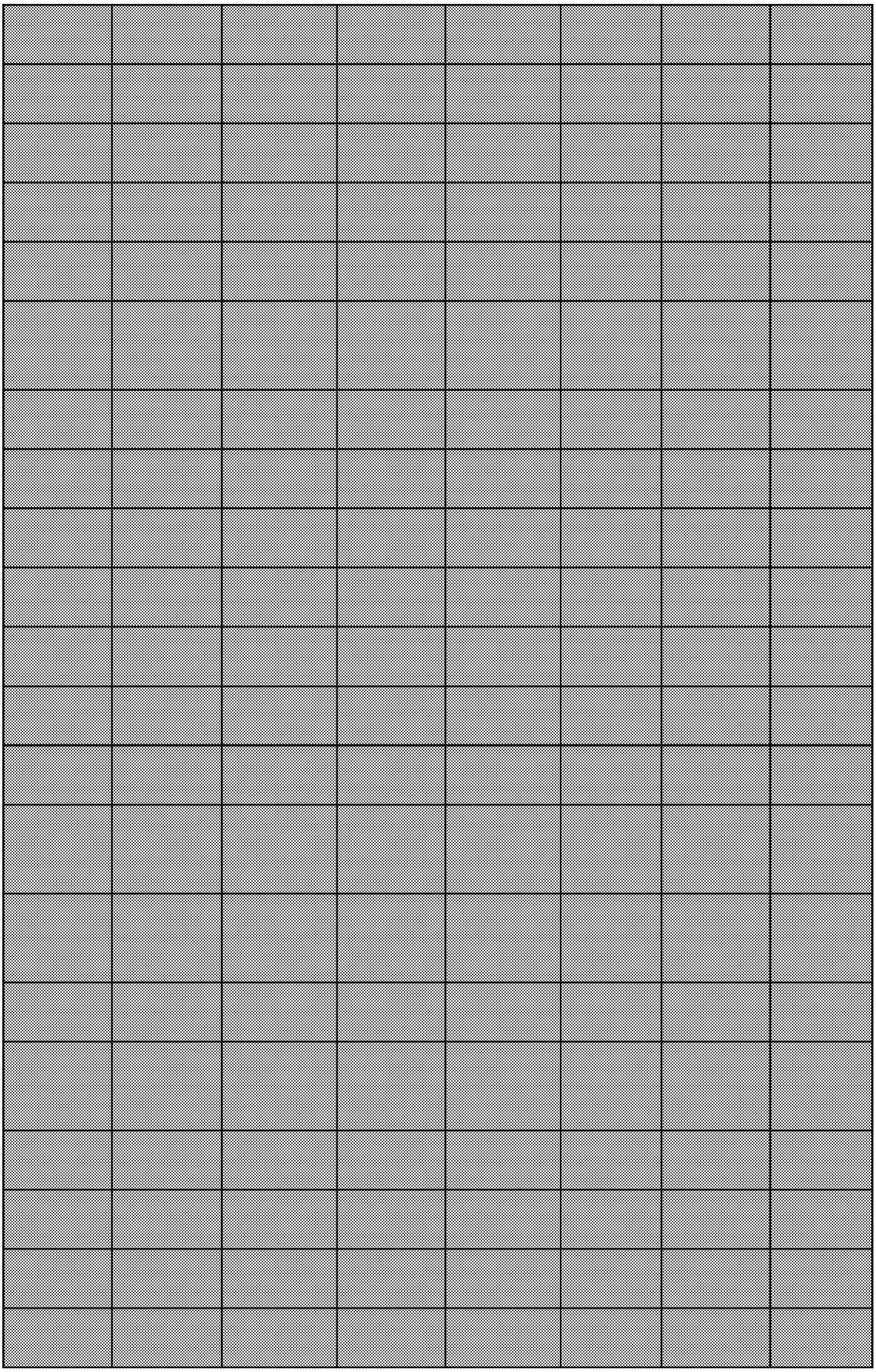

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Microelectrode array (MEA) approaches have been proposed as a tool for detecting functional changes in electrically exc
Substantial evidence indicates that neuroinflammation caused by microglial activation in substantia nigra is critical in the
PURPOSE: To investigate the role of the Fractalkine receptor CX3CR1 pathway in oxidative insults-mediated retinal deger
Apolipoprotein D (ApoD) gene expression is increased in several neurological disorders such as Alzheimer's disease (AD)
PURPOSE: The purpose of this study was to identify how changes in retinal structure and function correlate with visual de
OBJECTIVE: Retinal degenerations are a class of devastating blinding diseases that are characterized by photoreceptor dy
1-Methyl-4-phenyl-1,2,3,6-tetrahydropyridine (MPTP) and 1-methyl-4-phenylpyridinium cation (MPP+) are selective dop
MDL72974 is a member of a series of MAO-B inhibitors to be used as potential therapeutic agents in the treatment of Par
1-Methyl-4-phenyl-1,2,3,6-tetrahydropyridine (MPTP) is a neurotoxin that induces Parkinsonism in humans, monkeys, an
Recent studies have implicated alpha-synuclein (alpha-S) in the pathogenesis of Parkinson's disease (PD). The mechanism
We investigated the dopaminergic (DA) neuronal degeneration in animals subjected to systemic treatment of rotenone v
We previously showed that systemic administration of a nitric oxide (NO) precursor, L-arginine (L-Arg), failed to reverse s
Triadimefon (TDF) is a triazole fungicide that acts as an indirect dopamine (DA) agonist by binding to the dopamine trans

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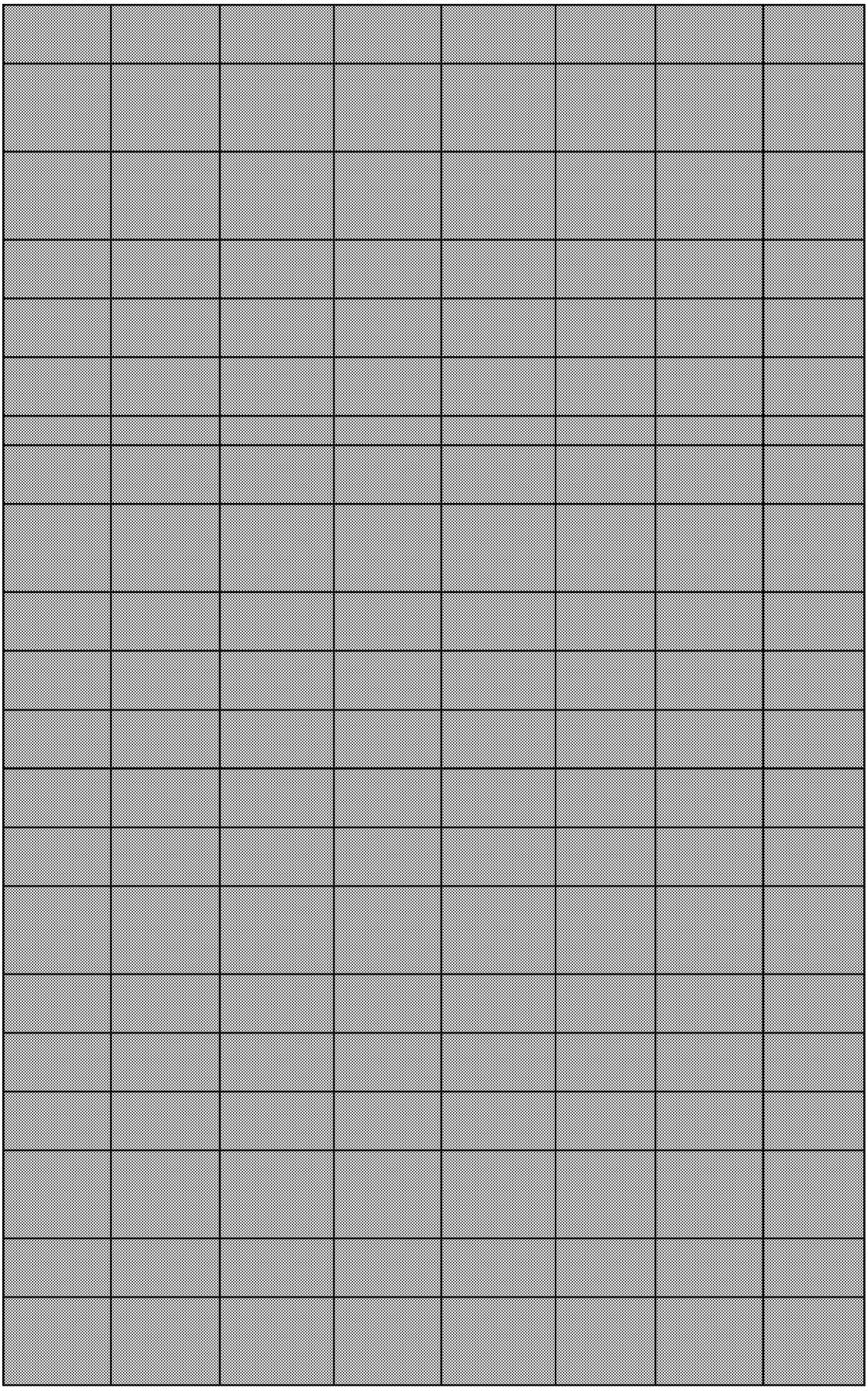

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Parkinson's disease is predominantly a dopamine deficiency syndrome, which is produced in the brain by the loss of cells
The widespread use of atrazine (ATR) and its persistence in the environment have resulted in documented human expos
The midbrain dopamine system mediates normal and pathologic behaviors related to motor activity, attention, motivatic
1-Methyl-4-phenyl-1,2,3,6-tetrahydropyridine (MPTP) is currently a leading neurotoxic agent used for producing Parkinso
Abnormalities in the function of alpha-synuclein are implicated in the pathogenesis of Parkinson's disease (PD). We foun
Epidemiological investigations document that workers in agriculture, horticulture and people living near areas with frequ
Systemic administration of ubiquitin-proteasome system inhibitors to rodents has been reported to induce certain behav
Recent studies suggest that exposure to agrochemicals may contribute to the development of idiopathic Parkinson's dise
As individuals enter their 80s, they are inevitably confronted with the problem of neuronal loss in the brain. The incidenc
2,4-Dichlorophenoxyacetic acid (2,4-D) induced disparate alterations on enzymatic activities of the defensive mechanism
The herbicide atrazine (ATR) is a very commonly used pesticide in the United States. and a major ground water contamin
A possible link between Parkinson's disease and pesticide exposure has been suggested, and recently it was shown that t
The vesicular monoamine transporter 2 (VMAT2; SLC18A2) is responsible for packaging dopamine into vesicles for subse
The present study investigates the effects of divalent and trivalent manganese (Mn(2+)/Mn(3+)) mixture inhalation on m
Several human neurodegenerative disorders are characterized by the accumulation of 8-oxo-7,8-dihydroguanine (8-oxod
The substantia nigra pars compacta (SNpc) is a compact brain structure that contains a variable distribution of cells in bot
Restless legs syndrome (RLS) is a neurological disorder that is thought to involve decreased iron availability in the brain. I
Systematic administration of rotenone as one of pesticides is known to produce degeneration of nigral dopaminergic neu
Elevated environmental exposure to pesticides has been implicated as a contributing factor in the pathogenesis of Parkin

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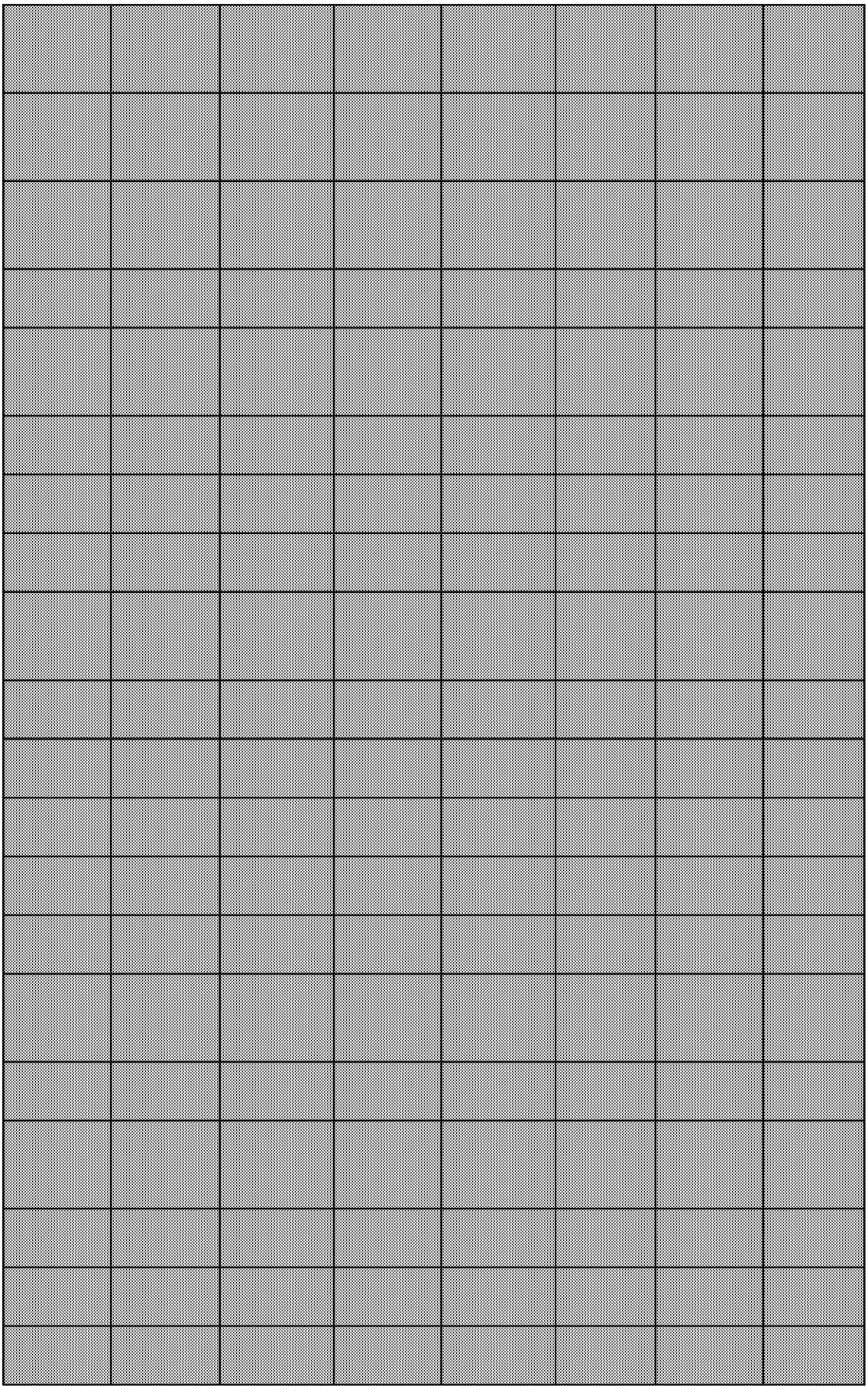

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Parkinson's disease (PD) is a severe neurodegenerative disorder characterised by loss of dopaminergic neurons of the su
Idiopathic Parkinson's disease (PD) is a neurodegenerative disorder of mature and older individuals. Since all aged indivi
Mitochondrial complex I dysfunction is regarded as underlying dopamine neuron death in Parkinson's disease models. H
The degeneration of dopaminergic neurons in the course of Parkinson disease is largely blamed on oxidative damage in t
To clarify the neuroprotective property of ceruloplasmin and the pathogenesis of aceruloplasminemia, we generated cer
Oxidative damage of membrane polyunsaturated fatty acids (PUFA) is thought to play a major role in mitochondrial dysfu
Previous studies demonstrate a positive correlation between pesticide usage and Parkinson's disease (PD), which prefere
Dopaminergic cells in the substantia nigra are highly vulnerable to the neurodegenerative process of Parkinson's disease
Mitochondria play a pivotal role in the development of pathology associated with Parkinson's disease (PD), traumatic bra
Oxidant molecules generated during neuronal metabolism appear to play a significant role in the processes of aging and
Rotenone, a commonly used lipophic pesticide, is a high-affinity mitochondrial complex I inhibitor. The aim of this projec
Positive correlations have been suggested between usage of pesticides and the incidence of Parkinson's disease (PD) thr
Environmental compounds may be important contributors to Parkinson's disease etiology. Epidemiological and experime
Manganese is a neurotoxic element that leads to severe neurological disorders when excessive exposure occurs, mainly i
Epidemiological studies have suggested an association between pesticide exposure and Parkinson's disease. In this study

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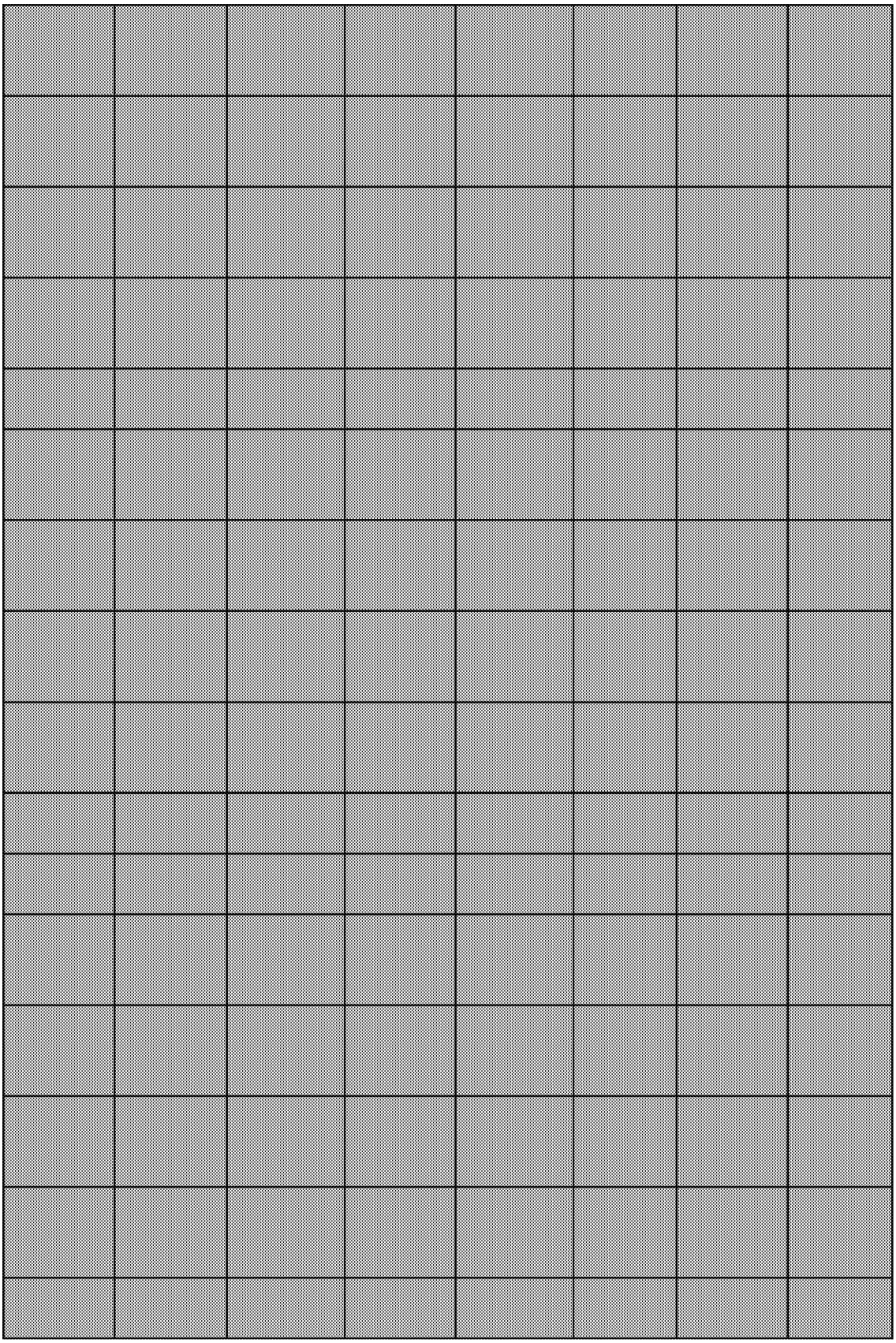

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Primary cultures from embryonic mouse ventral mesencephalon are widely used for investigating the mechanisms of do
Glyphosate (Glyph) is the active ingredient of several herbicide formulations. Reports of Glyph exposure in humans and a
Parkinson's disease (PD) does not manifest clinically until 80 % of striatal dopamine is reduced, thus most neuronal dama
Male and female C57BL/6J mice were administered diquat dibromide (DQ.Br-2) in their diets at concentrations of 0 (cont
Dimethoate, an organophosphorus insecticide, inhibited the acetylcholinesterase of the brain of a common carp, Cyprinu
Zeolite-Y-modified carbon paste electrodes display a preferential incorporation of the neurotransmitters dopamine and e
α-Synuclein can be degraded by both the ubiquitin–proteasomal system and the chaperone–lysosomal system. However

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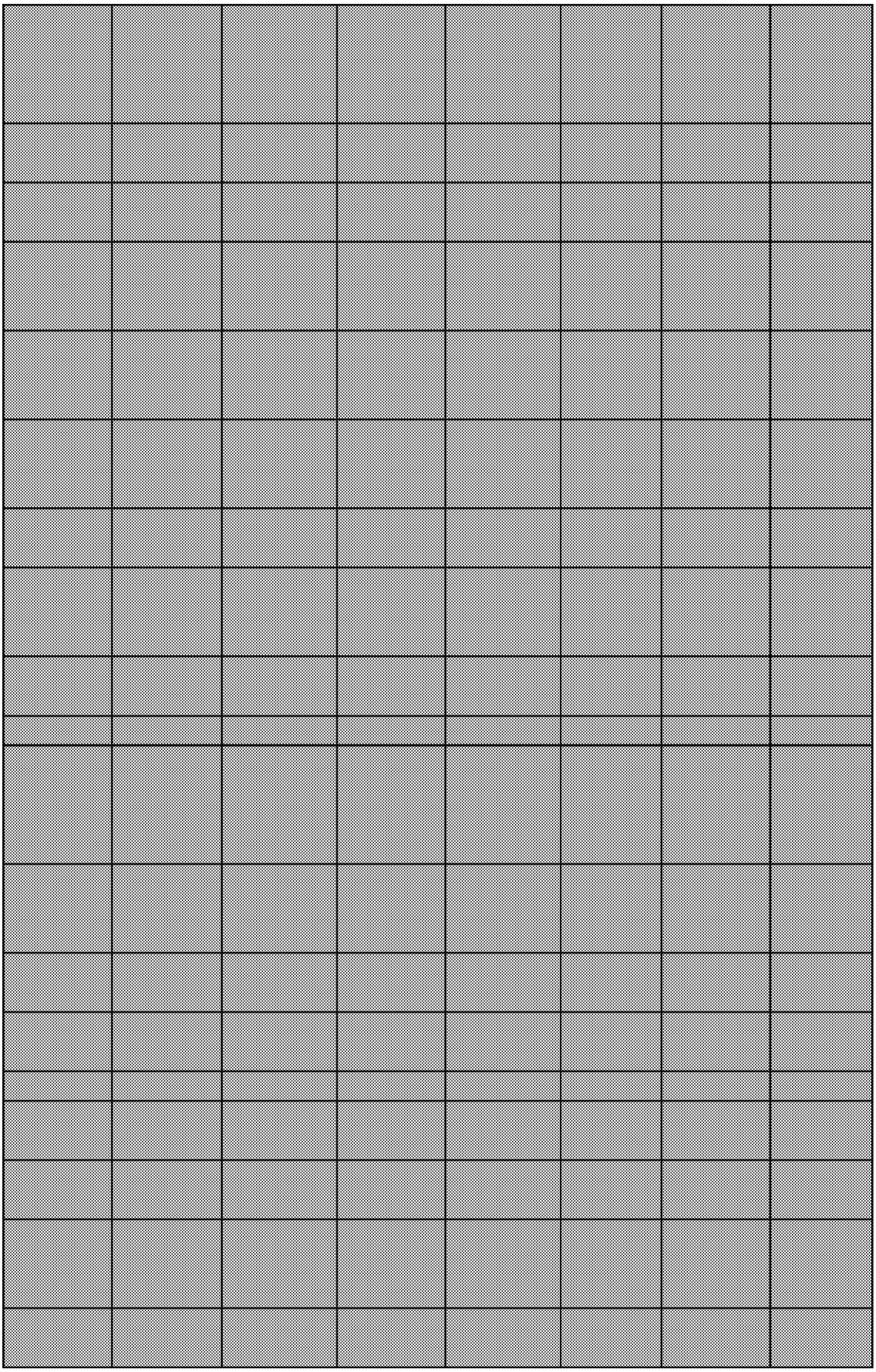

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The various biochemical mechanisms considered to explain the selective dopaminergic neurotoxicity of 1-methyl-4-phen
The energy dependent accumulation of the herbicide paraquat into the lung is known to be a major factor responsible fo
Paraquat (PQ) is widely used in agriculture as a non-selective contact herbicide. Ingestion of PQ results in multiple organ
BACKGROUND: Exposure to pesticides and industrial toxins are implicated in cardiovascular disease. Paraquat (PAR) is a t
VIP delayed the onset of edematous lung injury in isolated perfused rat lungs by 64%, and was more effective than PGI2 i
In this study, we examined the sequential expression of several matrix metalloproteinases (MMPs), tissue inhibitors of m
OBJECTIVE: To evaluate the therapeutic efficacy of modified amniotic membrane transplantation (MAMT) for paraquat-in
The ingestion of the herbicide paraquat (PQ) can cause multiple organ injury including cardiac lesions. However, the und
Paraquat is a nitrogen herbicide imposing severe organ toxicity in human leading to acute lung injury and heart failure. T
This article reports the first absolute quantitative analysis of expression patterns of murine transcripts (Gsta1/2, Gsta3, G
The differential distribution of paraquat and diquat in liver, kidney, lung, brain and heart has been studied after oral adm
The potential preventive and therapeutic effects of thymoquinone (TQ) and its molecular mechanism were evaluated in p
To explore therapeutic effects and underlying mechanism of Salubrinal combined with Ulinastatin (UTI) on acute Paraqua

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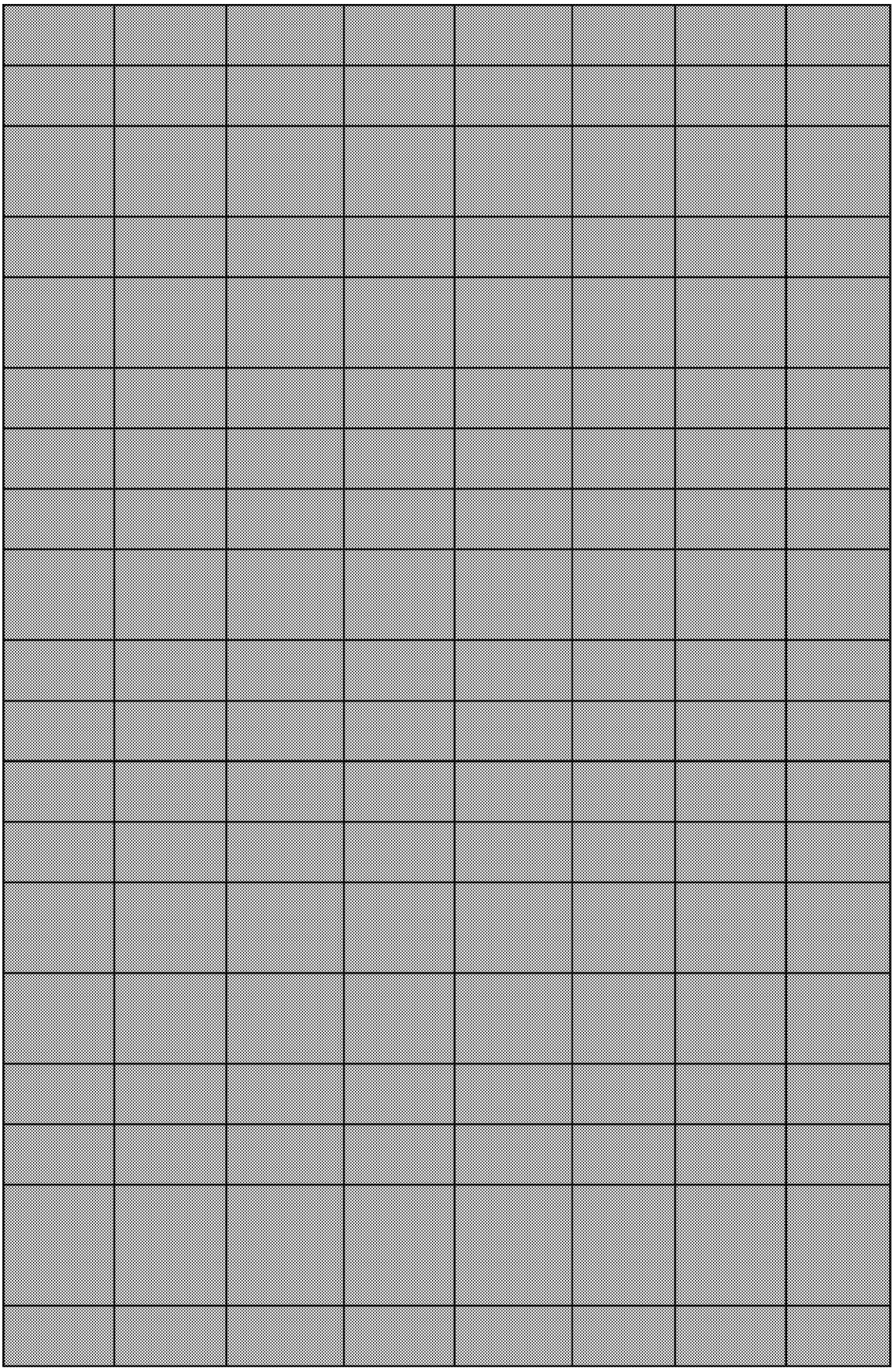

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OBJECTIVE: To evaluate the therapeutic effects of epidermal growth factor (EGF) combined with plasma cryoprecipitate (
We have found that paraquat (PQ), a widely used herbicide, causes wet dog shakes (WDS), which involve the central opic
OBJECTIVE: To explore the dynamic variation rule of kidney injury makers of molecule 1 (KIM-1), Cystatinc (Cys-C), Blood
Oxidative injury of liver was studied 20 hr after a single oral administration of 150 mg/kg paraquat (PQ) to rats. PQ exerte
The effect of soy protein, soy isoflavones and saponins on paraquat (PQ)-induced oxidative stress was investigated in rat
1. Substances previously tested therapeutically were studied to obtain evidence on the pathomechanism in mice of para
The nonselective contact herbicide, paraquat (PQ), is a strong pneumotoxicant, especially due to its accumulation in the
The present study aims to investigate the impacts and mechanisms of silymarin on paraquat (PQ)-induced lung injury in
Since our prior work indicated that Se-dependent cellular glutathione peroxidase (GPX1) was necessary for protection ag
Glutathione peroxidase (GSHPx), a seleno-enzyme, reduces lipid hydroperoxides while producing oxidized glutathione (G
BACKGROUND: Paraquat (PQ) intoxication causes lung oxidative stress damage. Saturated hydrogen saline, a newly expl
The present study was aimed at exploring the protective effects of Salvianolic acid B (SalB) against paraquat (PQ)-induce
The lung is a target organ for the toxic effects of several chemical agents, including natural products, industrial chemicals
The possibility of establishing a new method of treatment against pulmonary fibrosis caused by acute paraquat intoxicati
Sirtuin 1 (SIRT1) acts via the deacetylation of a number of crucial transcription factors and has been implicated in various
BACKGROUND: Pulmonary damage resulting from lipid peroxidation is a principal effect of paraquat intoxication. The ho
The relationship between the oxidative stress and inactivation of hepatic enzymes was examined in rats. An intake of lipi
Pulmonary surfactant, besides its mechanical properties, is thought to be involved in lung defence mechanisms. We prev

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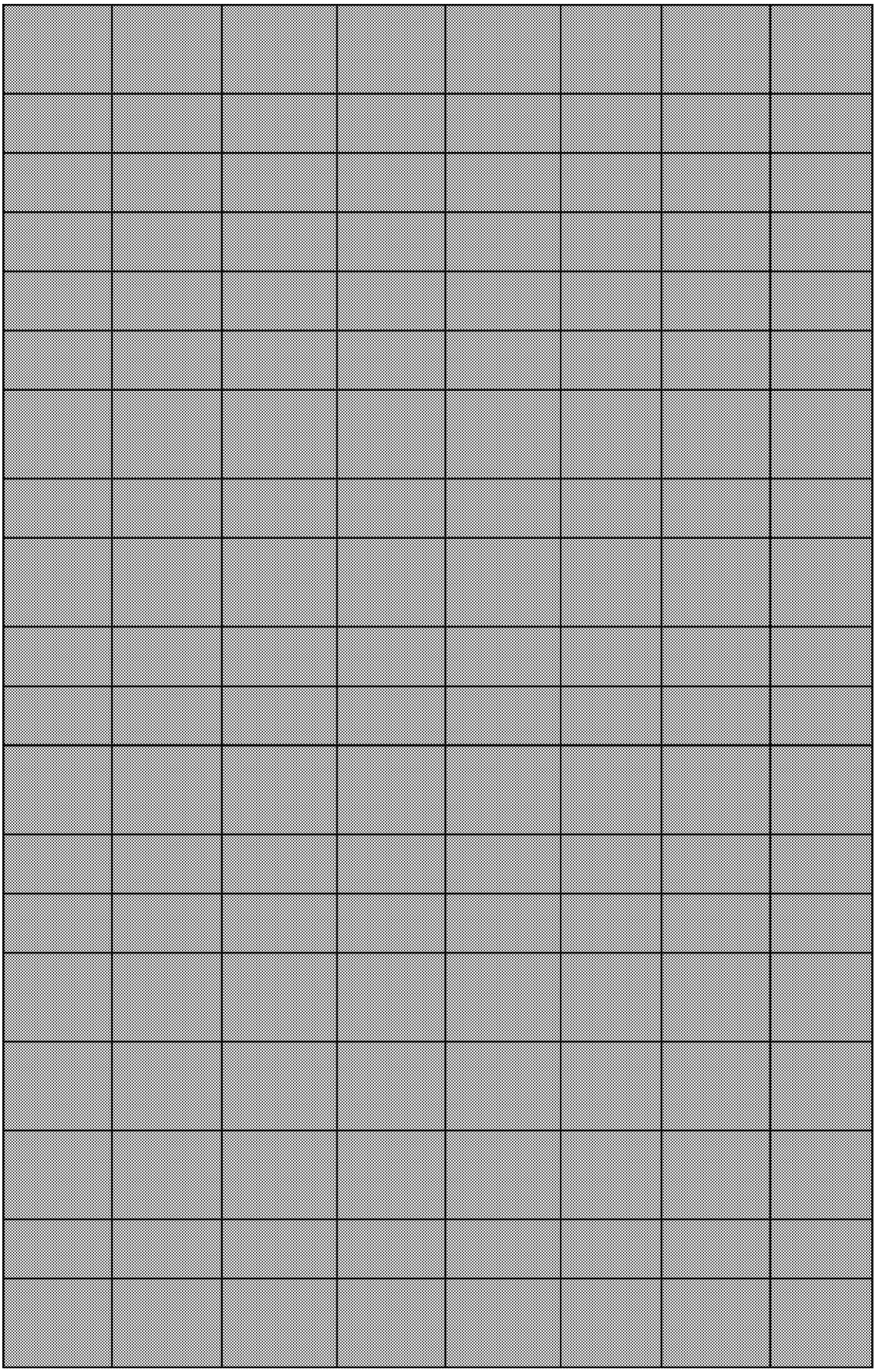

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Paraquat (PQ) is a well-known quaternary nitrogen herbicide. The major target organ in PQ poisoning is the lung. Reactiv
The effect of a dietary soy protein isolate (SPI), soy peptide (PEP) and the amino acids in soy protein on paraquat (PQ)-inc
The toxicity of herbicide Paraquat (PQ, 1-1'-dimethyl-4,4'bipyridylium dichloride) in animal cells is related to its rapid red
We examined whether recruitment maneuvers (RMs) with gradual increase in airway pressure (RAMP) provide better ou
OBJECTIVE: In acute lung injury, recruitment maneuvers have been used to open collapsed lungs and set positive end-exp
OBJECTIVE: An RU486-inducible recombinant adenovirus-Nrf2 construct (Ad-RUNrf2) was constructed and expressed in H
Hepatotoxicity of drug candidates is one of the major concerns in drug screening in early drug discovery. Detection of he
OBJECTIVE: To evaluate the role of rapamycin (RAPA) in paraquat (PQ)-induced acute lung injury. METHODS: Lung tissues
BACKGROUND: Puerarin, extracted from Radix puerariae, was reported to ameliorate airway inflammation, lung injury a
Paraquat (PQ) has been demonstrated that the main target organ for the toxicity is the lung. This study aimed to investig
gamma-Glutamyltransferase (gamma GT) is a key enzyme in glutathione metabolism and it is thought also to play a role
Paraquat was administered to rats by gavage or intravenously at doses which were approximately equitoxic (680 mu. mo
Paraquat (PQ) has been one of the most widely used herbicides in the world. PQ, when ingested, is toxic to humans and
An early feature of paraquat (PQ) toxicity is the influx of inflammatory cells, releasing proteolytic enzymes and oxygen fr
The physiological significance of the enzyme indoleamine 2,3,-dioxygenase (IDO) (EC 1.13.11.17), which consumes super
The purpose of this study was to establish a chronic model of paraquat-induced lung injury. To examine the role of reacti
The accumulation of methylglyoxal-bis(guanylhydrazone) (MGBG) into rat lung slices and its relationship to the accumula
AIMS: Paraquat Poisoning (PQ) can cause illness and death, and its main causes of mortality are acute respiratory failure

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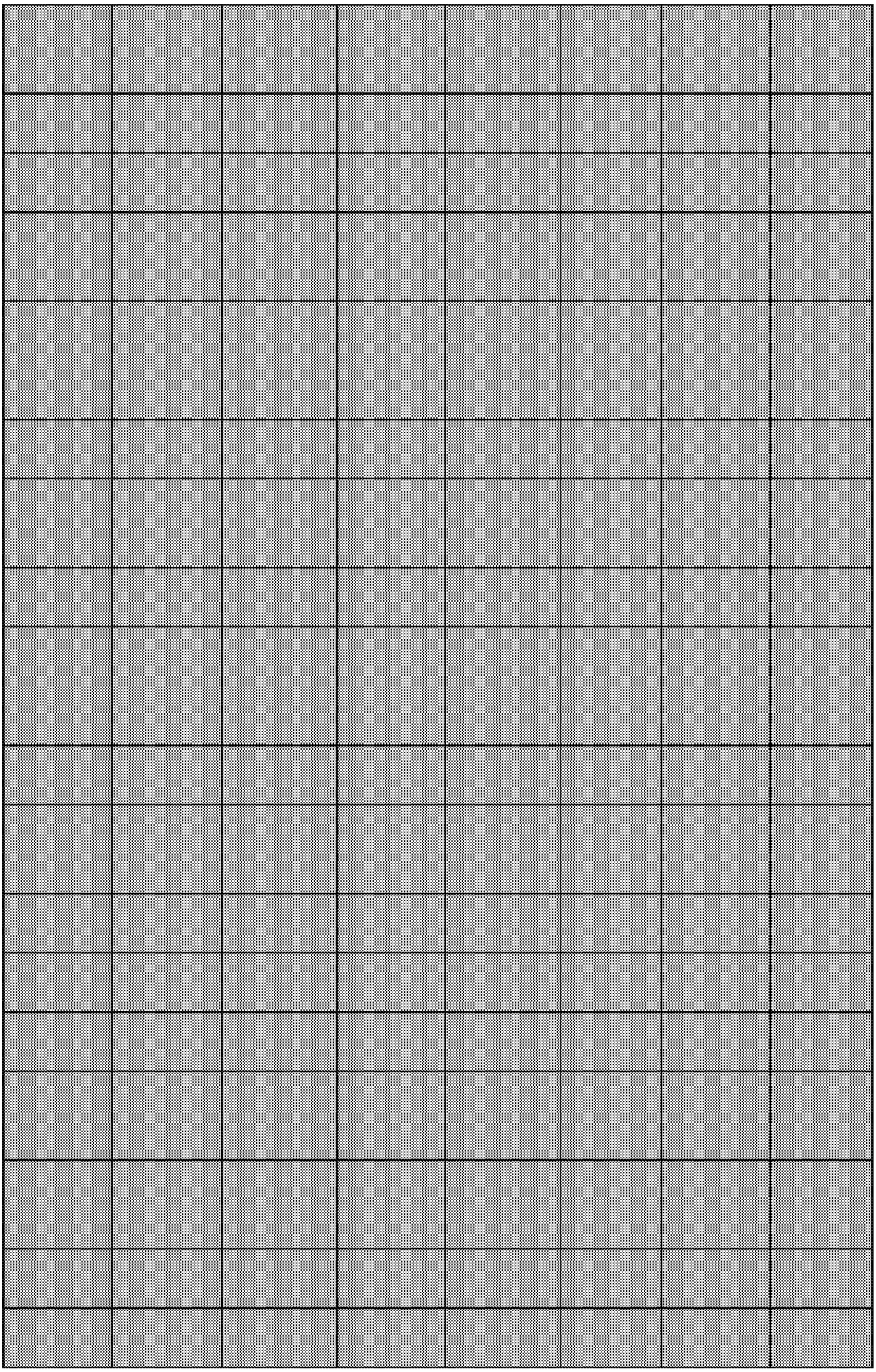

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Recently there has been a great deal of interest in exploring possible ways to protect the lung from oxidant damage. Sinc
The effects of the synthetic antioxidant germanium (Ge-132) were studied on liver oxidant damage induced by paraquat
The present study evaluates protective effects of naringin against paraquat (PQ)-induced acute lung injury (ALI) and pulm
An animal study in rats and a cell culture study in normal human lung epithelial cells were conducted to evaluate the effi
Paraquot (PQ) is widely and commonly used as herbicide and has been reported to be hazardous as it causes lung injury.
Although, numerous studies have attempted to reduce the oxygen radical injury induced by the antioxidants in paraquat
The preventive effects of nasunin (delphinidin-3-[4-p-coumaroyl-rhamnosyl(1-->6)glucosid e]-5-glucoside) on paraquat-i
We investigated the apoptotic pathway during paraquat (PQ)-induced nephrotoxicity as well as renoprotective effects of
In this study, we aimed to study the effects of arachidonic acid (AA) on acute lung injury (ALI) caused by paraquat (PQ) in
This study aimed to investigate the protective effects of apigenin against paraquat (PQ)-induced acute lung injury (ALI) in
BACKGROUND AND OBJECTIVE: EUK-134 is one of the most promising of the superoxide dismutase (SOD)/catalase mime
BACKGROUND: Exposure to paraquat results in acute lung injury. A systemic inflammatory response has been widely est
OBJECTIVE: To investigate the protective effect of ulinastatin (UTI) on HK-2 cells during paraquat (PQ)-induced injury and
Paraquat is a very toxic herbicide and a dangerous pollutant of the environment. It forms reactive oxygen species and inc
AIMS: Paraquat (PQ) is known to induce pulmonary injury via a redox cyclic reaction. The present study was aimed to det
In the current study, the possible protective effect of montelukast (Mont, 50 mg/kg, p.o given 2, 24, and 48 h after paraq
OBJECTIVE: To measure the levels of ghrelin-induced expression or activation of nuclear factor erythroid 2-related factor
To investigate the potential protective effect of C-phycocyanin (PC) on paraquat (PQ)-induced acute lung injury, rats were
OBJECTIVE: To explore the possible mechanism and protective effect of BMSCs (bone mesenchymal stem cells) carrying s

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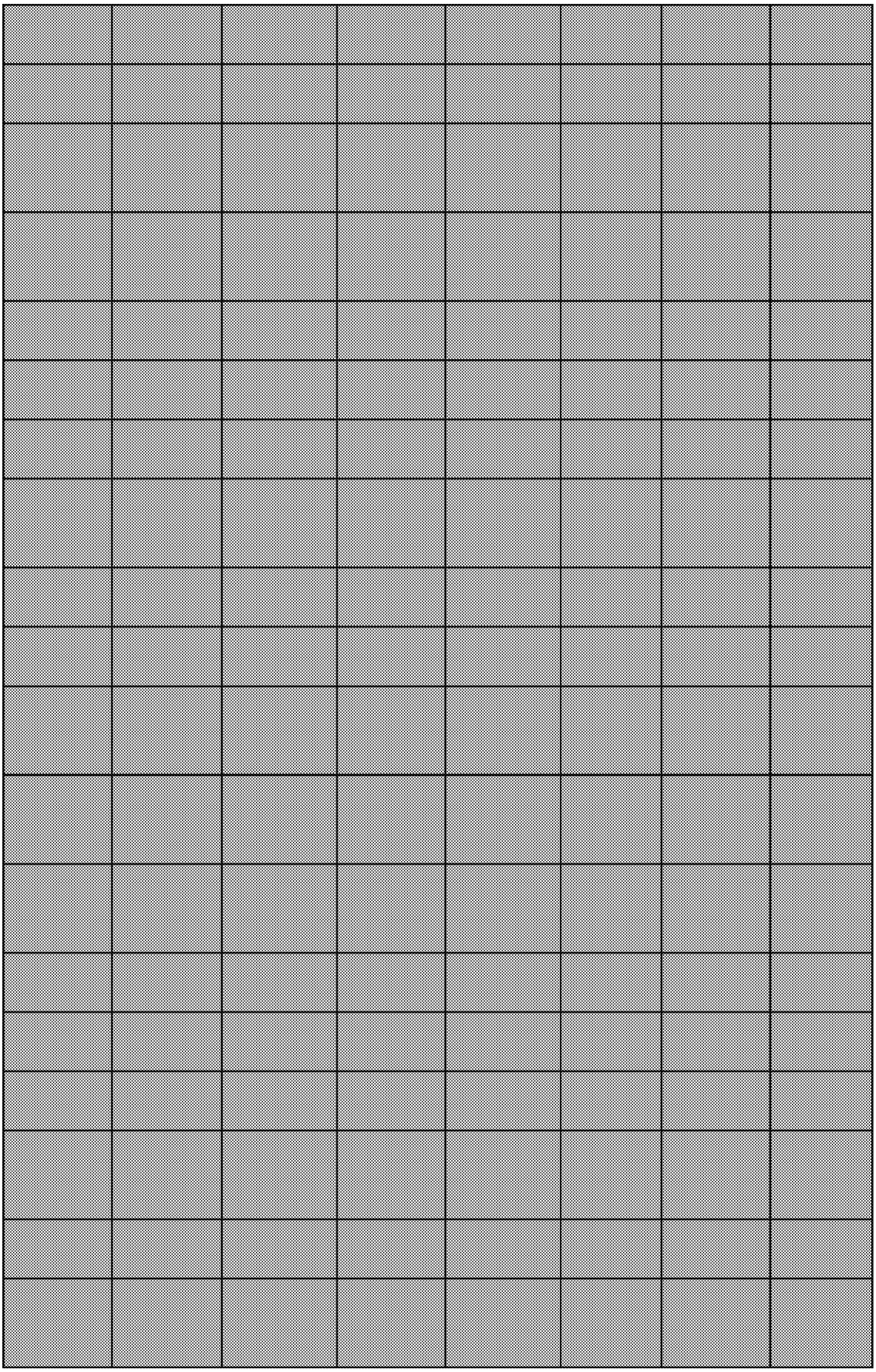

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BACKGROUND: Pulmonary fibrosis induced by paraquat (PQ) has caused a large number of human fatalities all over the v
The purpose of the present study was to evaluate the protective effects of astragaloside IV (AS IV) against paraquat (PQ)-
The effect of aminoguanidine (AG) against toxicity of paraquat (PQ), an oxidative-stress inducing substance, in mice was i
OBJECTIVE: To evaluate the possible therapeutic effect of ambroxol on pulmonary fibrosis induced by paraquat. METHOD
Although 4,4'-diaminodiphenylsulfone (DDS, dapsone) has been used to treat several dermatologic conditions, including
We have investigated the influence of the elevation of pulmonary glutathione (GSH) levels on the toxicity of the rodentic
OBJECTIVE. To examine the protective effect of bone marrow mesenchymal stem cell (BMSC) transplantation against lun
Taurine has been shown to protect against lung injury induced by various oxidants including ozone, nitrogen dioxide, am
The toxicity of the herbicide paraquat in mice, measured by the single dose LD50 after 7 days, was significantly decreased
Experiments were conducted to determine whether both dietary vitamin E and selenium (Se) affect the acute toxicity of
BACKGROUND: Paraquat (PQ) is an effective herbicide and is widely used in agricultural production, but PQ poisoning is f
Paraquat (PQ) was administered to rats for 7 days by iv infusion from osmotic minipump at dosage rates of 250 and 500 r
The effects of prolonged recruitment manoeuvre (PRM) were compared with sustained inflation (SI) in paraquat-induced
The preventive effects of acylated anthocyanins from red cabbage on paraquat-induced oxidative stress were determine
OBJECTIVE: To investigate the protective effects of 5-hydroxy-1-methylhyantoin (HM) on paraquat (PQ)-induced nephro
Paraquat is a widely used herbicide which causes lung injury in man characterized by progressive parenchymal damage t

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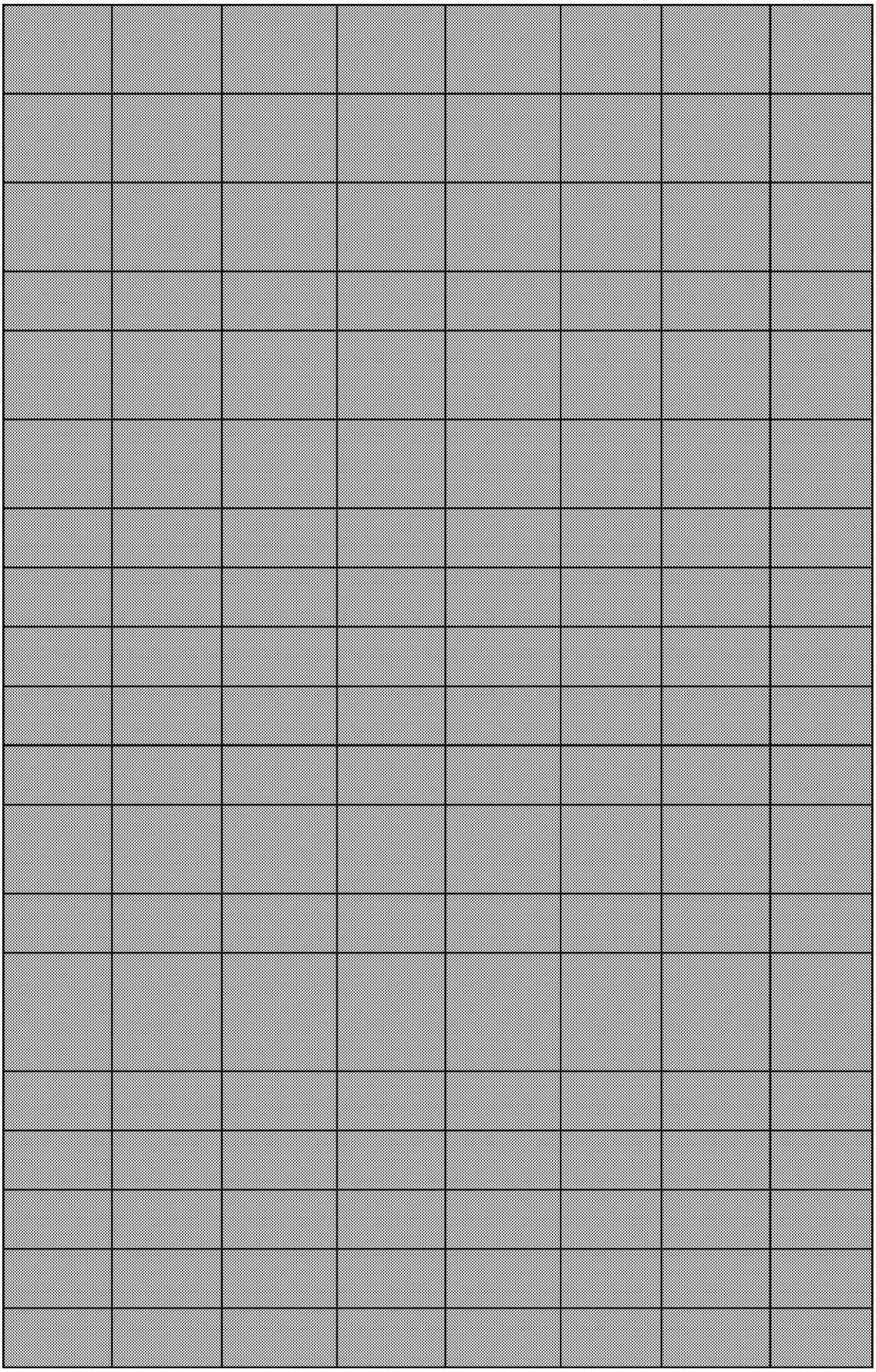

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In order to study oxidative stress in the lung, we have developed a rat lung slice model with compromised oxidative defe
Dimethylthiourea (DMTU) is an effective scavenger of reactive oxygen metabolites. This property has been successfully e
The in vivo effect of melatonin on paraquat-induced oxidative damage in rat lung and liver was studied using two parame
OBJECTIVES: Paraquat (PQ) is a widely used herbicide. Exposure to PQ at toxic doses can result in fatal acute lung injury. I
The widespread use of the nonselective contact herbicide paraquat (PQ) has been the cause of thousands of deaths from
Peroxiredoxin 6 (Prdx6), a bifunctional 25-kDa protein with both GSH peroxidase and phospholipase A2 activities, is the c
Mice with knock-out of peroxiredoxin 6 (Prdx6), a recently described antioxidant enzyme, were evaluated for susceptibili
Oxidative stress plays a prominent role in the pathophysiology of cystic fibrosis (CF). Despite the presence of oxidative st
The effects of perfluorocarbon (PFC) on paraquat (PQ) induced acute lung injury (ALI) was evaluated among rats. Twenty
In 14 beagle dogs, paraquat was infused in fractional doses to produce pulmonary fibrosis while avoiding fatal liver and k
In the present investigation a possible involvement of tachykinins during sulfur dioxide-(SO2) and metabisulfite-(MBS) in
1. 3H-Dopa is converted by lung and liver microsomes to a reactive intermediate which binds covalently to lung and liver
The herbicide paraquat causes lung injury that is believed to be oxygen-radical mediated. To further characterize this inju
Estrogen protects females against cardiovascular diseases in both receptor-dependent, genomic or non-genomic manner
Increased formation of reactive oxygen species is a cause of paraquat (PQ)-induced injury and also provides a link betwe
Paraquat, one of the most widely used herbicides, is highly toxic to humans and animals. There is much information rega
The ability of melatonin to protect against paraquat-induced oxidative damage in rat lung, liver, and serum was examine
The pharmacokinetics of paraquat were examined at a dose which produced lung disease but avoided renal damage. Fol
The paper presents results showing differential response to paraquat toxicity in Wistar rats and Swiss strain of mice. Para

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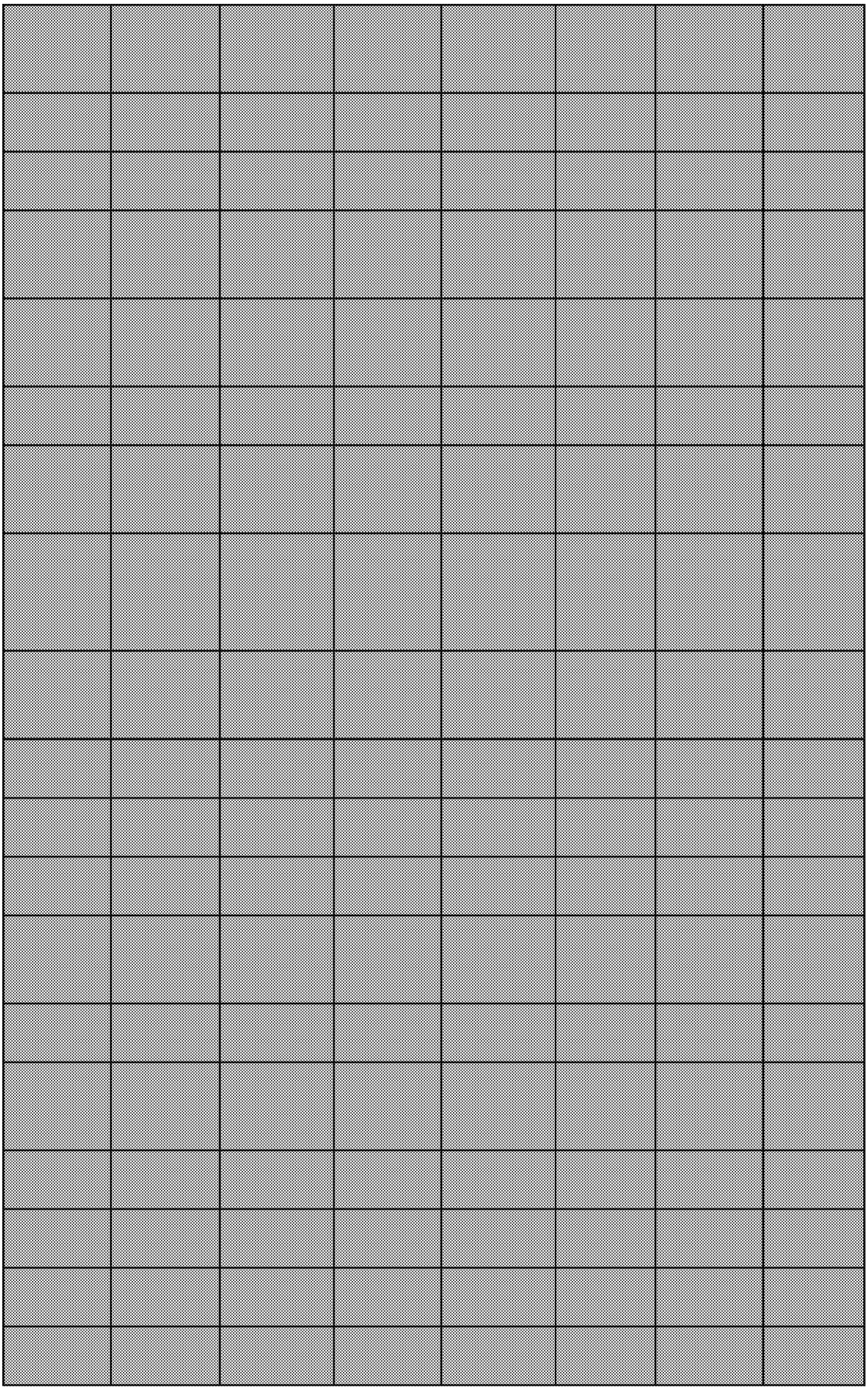

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The high Paraquat (PQ, 1-1'-dimethyl-4,4'bipyridylium dichloride) embryotoxicity in Xenopus laevis has been shown to be
Rats exposed to the quaternary herbicide paraquat (PQ) exhibit oxidative stress and lung injury. In the present study, we
Paraquat (PQ) overdose can cause acute lung injury and death. Ozone therapy (OT) was previously demonstrated to allev
BACKGROUND: Mineralocorticoid receptor (MR) antagonists attenuate renal injury in salt-sensitive hypertensive rats wit
OBJECTIVE: to study the oxidative stress of rats with acute paraquat poisoning and the intervention of Sodium Dimercapt
In order to facilitate the study of oxidative stress in lung tissue, rat lung slices with impaired antioxidant defenses were p
Although paraquat (PQ) is widely known to induce pulmonary fibrosis, the molecular mechanisms are poorly understood
Several mechanisms leading to noncardiac pulmonary edema have been reviewed. Common features are damage to and
The metabolism of paraquat generates oxygen radicals. Paraquat has thus been suggested as a model compound to indu
Shaking behavior, so-called wet dog shakes (WDS), in rats is characteristic behavior indicating morphine abstinence in mo
In both paraquat and X/XO models of lung injury, the injury, previously attributed to the generation of reactive oxygen sp
At low concentrations, nitric oxide is a physiological transmitter, but in excessive concentrations it may cause cell and tiss
We investigated the effects of N-acetylcysteine (NAC) pretreatment on paraquat-induced lung inflammation and leak. W
We investigated a possible role for N-acetylcysteine (NAC), a well-known antioxidant and free radical scavenger, against
We have reviewed some of the factors which contribute to lung damage by various toxicants. These include disposition o
The primary ultrastructural changes in pulmonary alveolar epithelial cells are described in paraquat-injected rats. Within
OBJECTIVE: To investigate the effects of overexpression of nuclear factor E2-related factor-2 (NRF2) on lung injury in rats
Methylene blue (MB) attenuates acute lung injury (ALI) induced by liver or pancreas ischemia-reperfusion. But the protec

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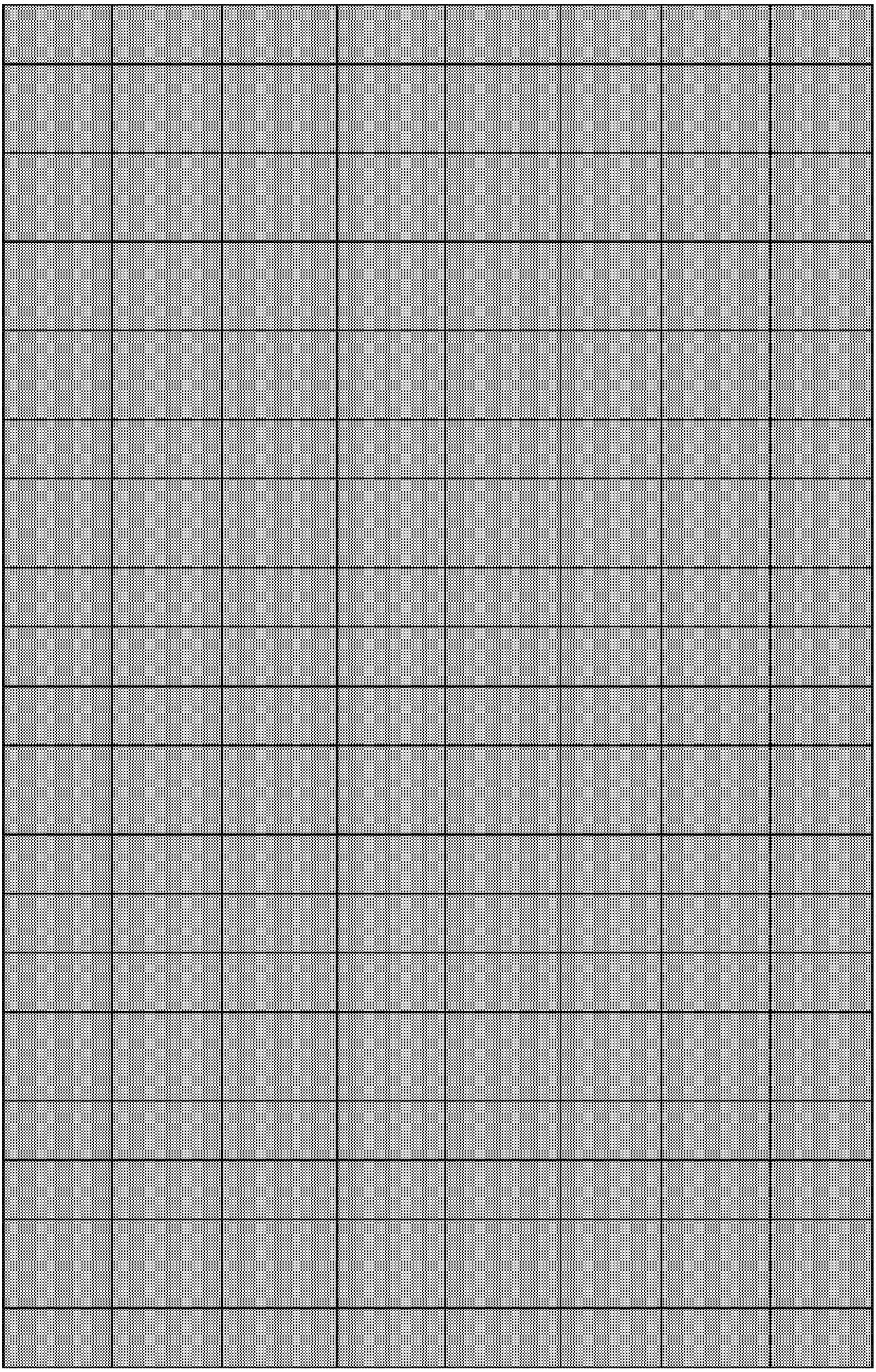

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Paraquat (PQ) poisoning often leads to severe oxidative liver injury. Recent studies have reported that methylene blue (M
Paraquat (PQ) is a widely used herbicide, and lung is the primary target of PQ poisoning. Metallothionein (MT) is a poten
We employed a low-molecular-weight metalloporphyrin superoxide dismutase mimetic, MnTBAP, to protect mice agains
The effects of acute paraquat exposure on mitochondrial function in rat lung were studied. The paraquat dose-response s
The production of superoxide anion (O2-) statistically increased, stimulated by paraquat (1,1'dimethyl-4,4'-bipyridylium c
Experimental studies have shown that toxicant responsive genes, cytochrome P450s (CYPs) and glutathione S-transferase
BACKGROUND: Paraquat (PQ), an effective and widely used herbicide, has been proven to be safe when appropriately ap
Isolated, perfused, and ventilated rat lungs were challenged by paraquat (0.01 M) in the presence of 2.5 mM Ca2+, 2.5 m
The Fischer rat is known for its susceptibility to develop liver necrosis when challenged with paraquat (Smith et al., J. Pha
Paraquat poisoning and hyperbaric oxygen exposure are well established models of oxidative stress in lung. The aim of th
Low levels of hepatic selenium (Se)-dependent glutathione peroxidase 1 (GPX1) activity have been shown to protect agai
Paraquat and diquat facilitate formation of superoxide anion in biological systems, and lipid peroxidation has been postu
The present study was carried out to investigate the efficacy of liposome-associated alpha-tocopherol in treating pulmon
The toxicity of the herbicide paraquat in mice, measured by the single dose lethal to 50 per cent of the animals after 7 da
To date, no reliable report on the regeneration of the intrahepatic bile duct epithelium following damage to the duct has

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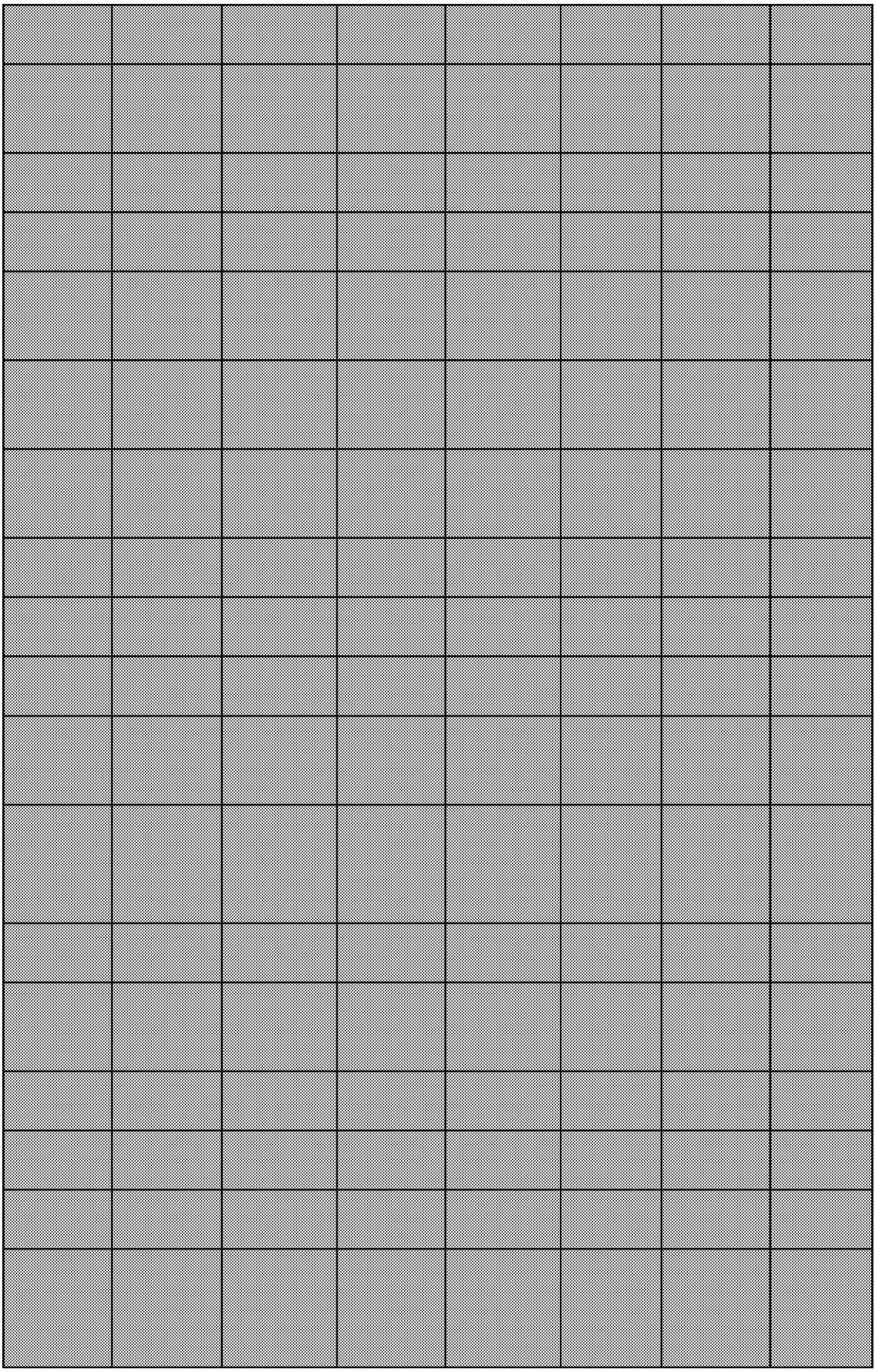

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Paraquat (PQ), a broad spectrum herbicide, produces severe lung inflammation and necrosis resulting in pulmonary fibro
Paraquat is a broad-spectrum herbicide known to produce lung injury via oxidative stress-mediated mechanisms. Differe
OBJECTIVE: To investigate the mechanism of pulmonary fibrosis induced by paraquat (PQ), and the effect of Xuebijing inj
The purpose of this study was to evaluate the effects of inhaled nitric oxide (NO) on the paraquat-induced lung injury in r
We studied the effect of NO on superoxide anion radical (O2-) generation using chemiluminescence method by examinin
BACKGROUND: Organism's lipid peroxidation is one of the most often examined and known physiological process evoke
Paraquat, a frequently used contact herbicide, produces oxidative stress by undergoing redox cycling and generating rea
1-Cys peroxiredoxin (1-cysPrx), a member of the peroxiredoxin family that contains a single conserved cysteine residue, r
A new transgenic mouse model for global increases in the Sodium Dependent Vitamin C transporter 2 (SVCT2) has been g
Metallothionein (MT) is a low-molecular-weight protein with a high cysteine content that has been proposed to play a ro
Previous research has suggested that repletion of cellular glutathione peroxidase (GPX1) activity by a single injection of S
Immunohistochemical techniques were used to observe the localization of paraquat in the skin and eyes of rats. Paraqua
We have used global gene expression profiling, combined with pathway analysis tools, to identify in rats the molecular e
OBJECTIVE: Endothelial cell (EC) migration is essential for arterial healing after angioplasty. Oxidized low-density lipoprot
Paraquat (PQ) is an agrochemical agent commonly used worldwide, which can cause acute lung injury (ALI) and death. H
The hypothesis that oxidative stress can be induced by hypoxia was tested by measuring the concentration of hydrogen p
Glutathione (GSH) is one of the most important antioxidants that plays an essential role in detoxification of reactive oxyg
Our objective was to determine whether high levels of dietary vitamin E replaced the protection of the Se-dependent cel

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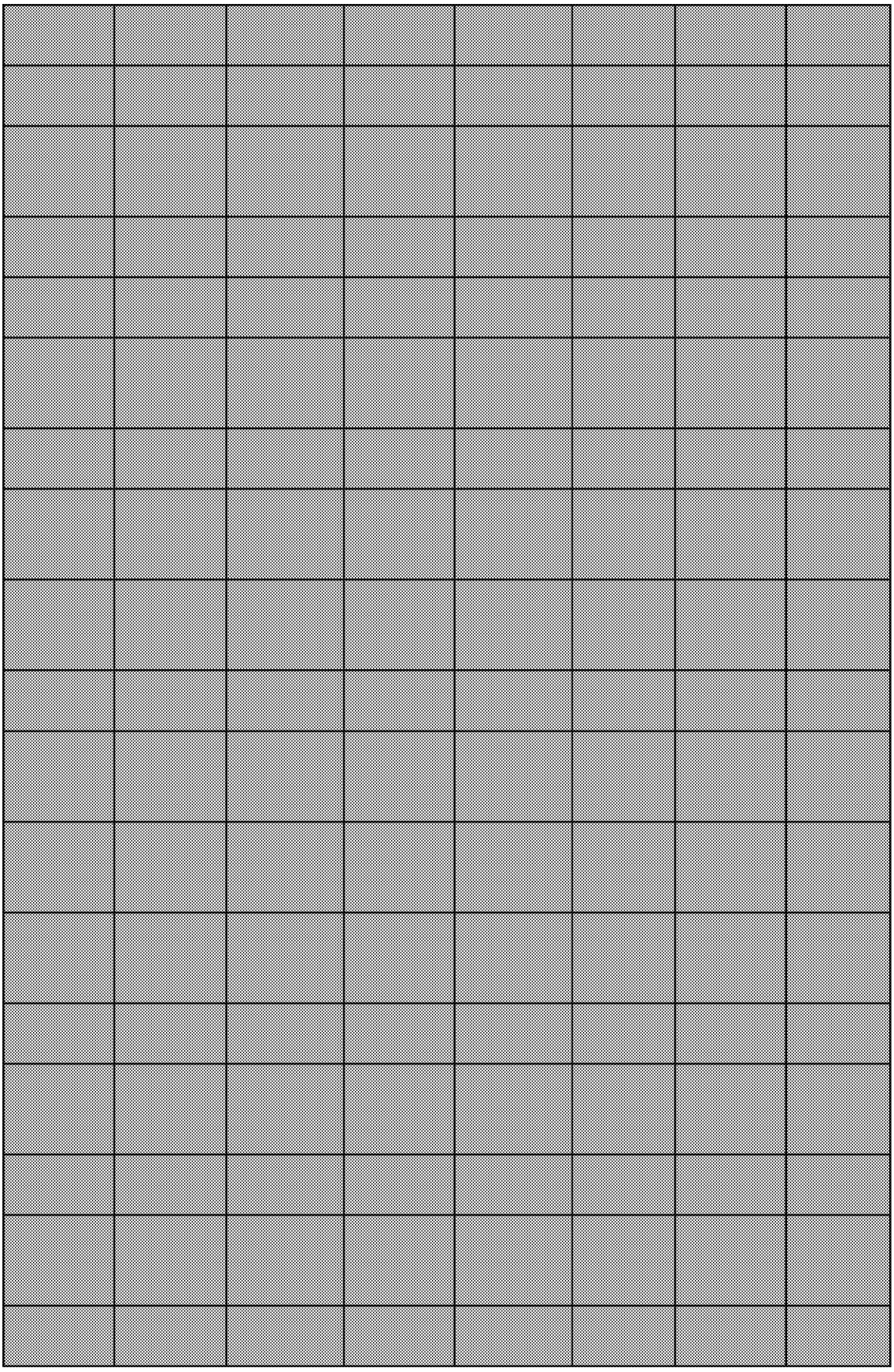

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Paraquat (PQ), an effective and widely used herbicide, has been proven to be safe when appropriately applied to elimina
Fe(II)-tetrakis-N,N,N',N'(2-pyridylmethyl) ethylenediamine (Fe-TPEN) catalyzes the dismutation of superoxide, and blocks
A decrease in hepatic phosphoglucomutase activity was found after intraperitoneal doses to rats with pro-oxidative drug
OBJECTIVE: To investigate the effect of hemoperfusion on paraquat-Induced kidney inflammation injury of rabbit and the
Paraquat-induced pulmonary fibrosis involves two factors, direct injury by oxygen free radicals and indirect injury by infla
Thirty-minute perfusion of isolated rabbit lungs with a Krebs-Ringer bicarbonate buffer containing 420 microM paraquat
To determine the in vivo role of cellular glutathione peroxidase (E.C.1.11.1.9, GPX1), we challenged the GPX1 knockout [(
Paraquat (PQ) is a well-known pneumotoxicant and provides an established model of oxidative stress. This study focused
Gene expression changes in the lungs induced by paraquat (PQ) administration were studied in rats using DNA microarra
The distribution of the non-selective herbicide paraquat was examined in the brain following subcutaneous administratio
Over the past decades, there have been numerous fatalities resulting from accidental or voluntary ingestion of the widel
We have investigated the hypothesis that the formation of mixed disulphides between protein sulphydryl and glutathion
Intoxication of rats with the herbicide paraquat (1,1-dimethyl-4,4-bipyridilium dichloride) was accompanied by accumula
OBJECTIVE: To investigate the antagonistic efficacy of tetrandrine (TET) on lung injury induced by acute paraquat poisoni
The adult respiratory distress syndrome (ARDS) is not confined only to late shock states but is a typical finding in intoxica
Formaldehyde (FA), acetaldehyde (ACT), malondialdehyde (MDA) and acetone (ACON) were simultaneously identified in
Paraquat is a widely used herbicide that may have central neurotoxic actions. In this study we investigated whether adm

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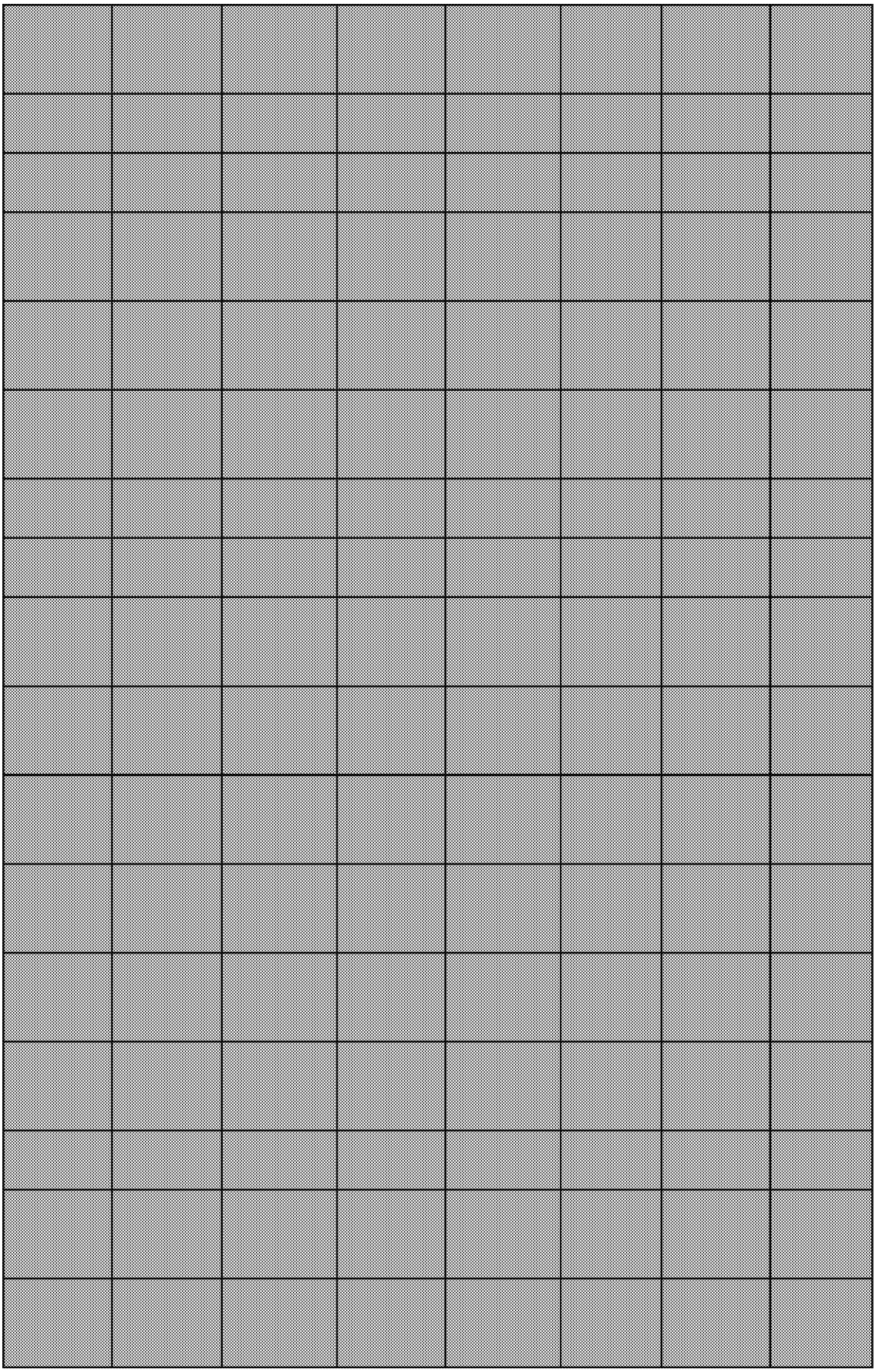

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It is well known that the intake of paraquat (PQ) causes severe tissue injury leading to numerous fatalities. Considering tl
Effect of glutathione (GSH) depletion on paraquat (PQ) toxicity in the liver and kidneys of mice was examined. Glutamic-p
In mammalian cultured cells, the activity of a cystine/glutamate transporter, designated System xc(-), has been shown to
Paraquat a widely used herbicide causes a variety of toxic effects on humans and animals. The present study is focused o
OBJECTIVE: To systematically review the effect of traditional Chinese medicine (TCM) in an animal model of lung injury ir
It was demonstrated that cysteine and D-penicillamine are able to replace reduced glutathione to some extent in the glu
The extent of glucose oxidation via the pentose phosphate pathway (PPP), a possible indicator of oxidative stress, was as
Treatments with copper sulphate (CuSO4), paraquat (PQ) and methidathion (MD) caused tissue damage and stress effect
Intraperitoneal injection of paraquat (70 mg/kg) elicited a significant decrease of 20% in activity of Mg(2+)-ATPase in hep
Paraquat can cause oxidative stress through redox cycling, and preimplantation embryos are sensitive to oxidative stress
Bronchoalveolar lavage (BAL) recovers the epithelial lung fluid of the lower respiratory tract. In this study, we have used
The toxic effects of paraquat on the anti-oxidant defense system of male albino rats were evaluated, after administering
We analysed the effects of oleanolic acid (OA) on lung mechanics and histology and its possible mechanisms of action in
OBJECTIVE: To observe the effects of Nrf2 gene expression induced by RU486 at different doses on A549 cell damage ind
OBJECTIVE: To evaluate the protective effect of high dose ambroxol, a mucoactive drug, on acute lung injury caused by p
OBJECTIVE: To observe the effects of hemoperfusion on oxidative stress status and the levels of matrix metallo proteinas
Selenium-dependent glutathione peroxidase-4 (GPx4) catalyzes the reduction of phospholipid hydroperoxides. Because a

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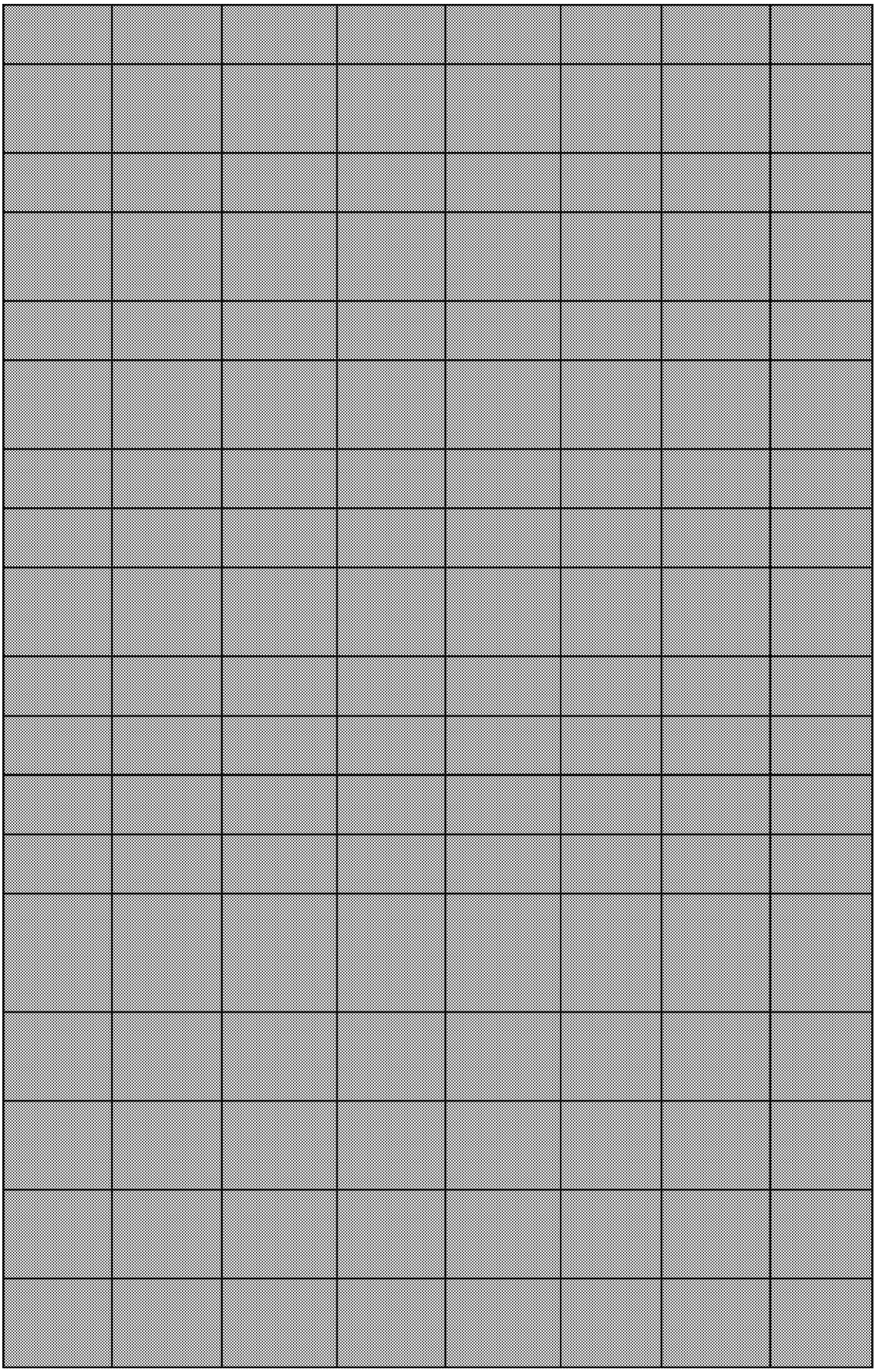

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PURPOSE: To evaluate the effects of frequency and inspiratory plateau pressure (Pplat) during recruitment manoeuvres (
Excretions of the lipid peroxidation products, formaldehyde (FA), acetaldehyde (ACT), malondialdehyde (MDA), and acet
Paraquat (PQ) is a commonly used herbicide that induces oxidative stress via reactive oxygen species (ROS) generation. T
We investigated the effects of acute hypercapnic acidosis and buffered hypercapnia on lung inflammation and apoptosis
The cause of death after ingestion of a large dose of paraquat is unclear. We investigated the cardiovascular effects of pa
Sodium salicylate (NaSAL) has been shown to have a multifactorial protection mechanism against paraquat (PQ)-induced
We examined the effect of cold vagal block on the functional residual lung capacity (FRC) in control rats and in rats with e
OBJECTIVE: To investigate the effects of thalidomide in a mouse model of paraquat-induced acute lung injury and the me
OBJECTIVE: To investigate the effect of selective phosphatase inhibitors Salubrinal on autophagy and apoptosis in the lun
OBJECTIVE: To investigate the effect of resveratrol (Res) on paraquat (PQ)-induced acute lung injury (ALI) and mortality in
Aspirin (ASA), indomethacin (IND), hydrocortisone (HYC) or 0.25% agar (control) were administered (p.o.) daily to rats for
The effect of pretreatment with metallothionein (MT)-inducing metals (Zn, Cu, Bi, Co, Cd or Hg) on paraquat (PQ) toxicity
The activity and molecular forms of acetylcholinesterase (AChE) were characterized in tissues of the carp (Cyprinus carpi
OBJECTIVE: To investigate the effects of different concentrations of paraquat (PQ) poisoning on the expression of voltage
The in vitro effects of paraquat on the aerobic metabolism of lung and liver homogenates, as well as on the oxygen consu
Paraquat poisoning may result in pulmonary damage and hepatotoxicity. To examine the effect of paraquat on liver func
Methylsulfonylmethane (MSM) is a natural organosulfur compound that exhibits antioxidative and anti-inflammatory eff

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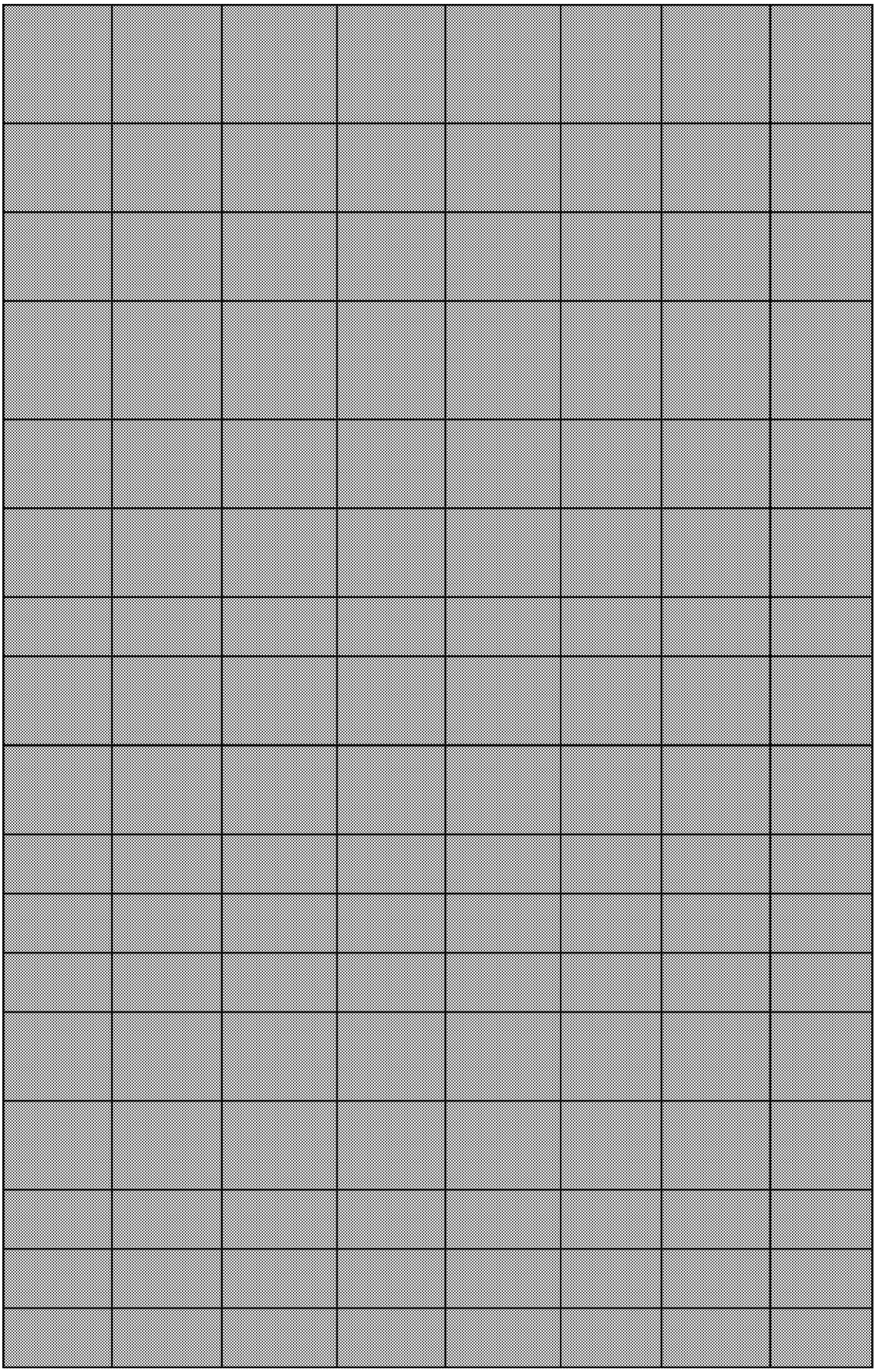

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The protective effect of L-cystine on the toxicity of paraquat (PQ) in mice was studied. Lipid peroxidation in the lung signi
OBJECTIVE: To examine the effect of hypericum perforatum (HP) on preventing the acute injury of rat pulmonary microva
OBJECTIVE: To investigate the effect of Hydrogen-saline on Lung Injury and HO-1 Expression in The Lung Tissue of Acute P
BACKGROUND: The purpose of this study was to determine the adequate loading and maintenance doses of N-acetylcyse
The effect of Glutathione (GSH) depletion on the induction of metallothionein (MT) synthesis by paraquat (PQ) was exam
The potential modifying effects of ethanol and paraquat on lesion development in livers and lungs of male F344 rats were
To obtain some insight into the toxicity of paraquat (PQ) in humans, PQ dichloride at 250 ppm in the diet was administere
This study investigated the effect of bark extract of Bathysa cuspidata on hepatic oxidative damage and blood glucose kir
Rat lung slices were used to examine the effects of citalopram, a compound reported to be a specific inhibitor of neurona
Edaravone (MCI-186) is a potent free radical scavenger used clinically to treat acute brain infarction. Its antioxidant abilit
BACKGROUND: Edaravone (3-methyl-1-penyl-2-pyrazolin-5-one) is a potent free-radical scavenger and has the antioxidar
Fish are often used as models for studies investigating the ability of xenobiotics to induce oxidative stress, though age or
Paraquat (PQ), a quaternary nitrogen herbicide, is highly toxic to humans and animals. Acute poisoning and death due to
OBJECTIVE: To observe hepatocellular apoptosis and inflammatory cytokines expression and their mechanisms after para
BACKGROUND/AIMS: Cyclophosphamide (CP) is a promising treatment for severe cases of paraquat (PQ) poisoning. We i
CONTEXT: Accumulating evidences have proposed the critical roles of oxidative stress in the etiology of lung injury cause
Paraquat (PQ) poisoning has caused a large number of human fatalities due to the progressive and irreversible pulmonar
BACKGROUND: Paraquat (PQ) poisoning is a lethal toxicological challenge that served as a disease model of acute lung in
Although paraquat (PQ) is known to induce pulmonary fibrosis, how it does so is not entirely clear. To elucidate the mech

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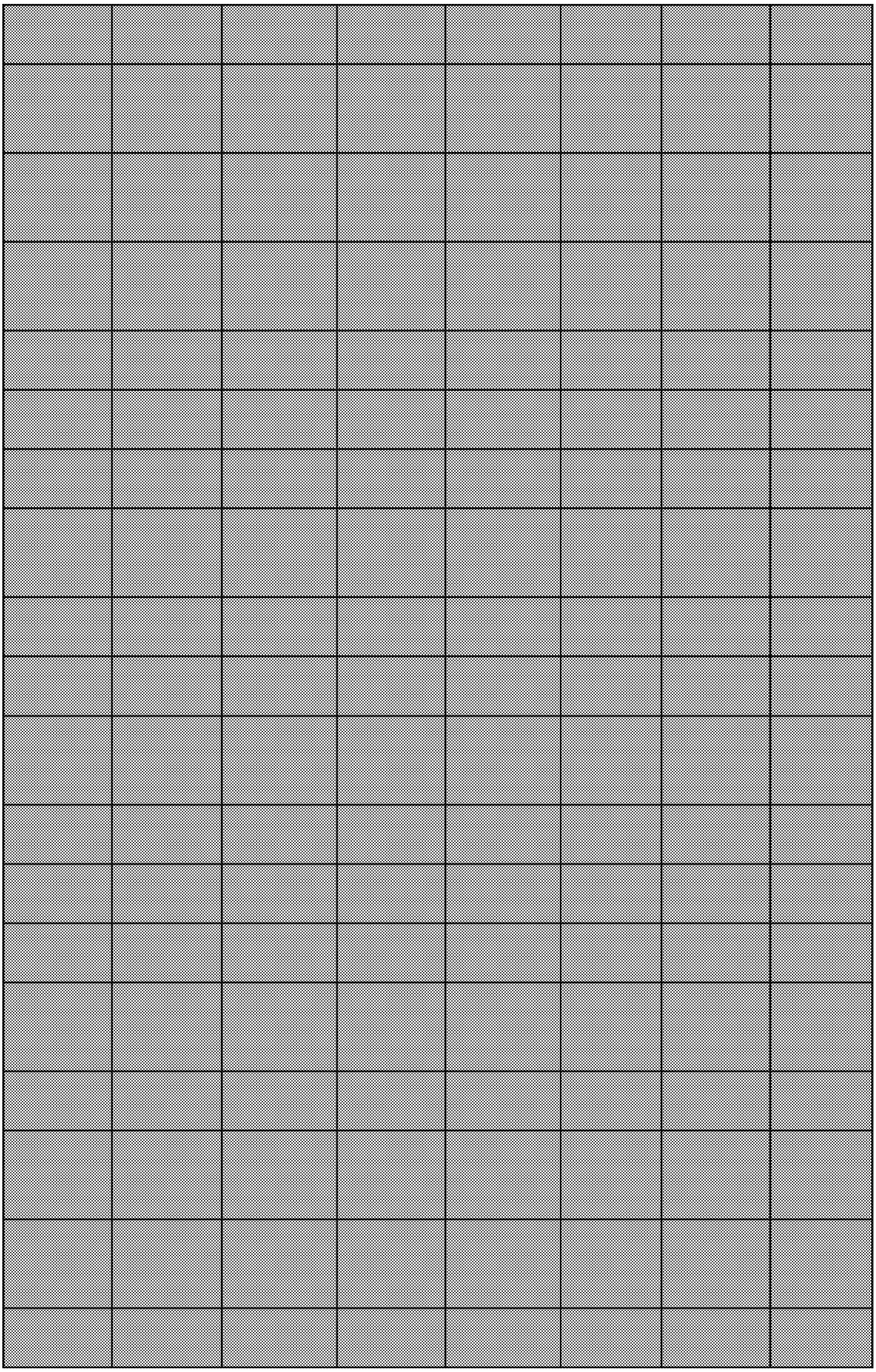

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As a result of a direct exchange with the external environment, the lungs are exposed to both iron and agents with a capa
This study aimed to investigate the beneficial effect of diphenyl diselenide (PhSe)(2) on paraquat (PQ) induced alteration
The present study was designed to assess the age-related changes of DNA single strand breaks (SSB) in the liver of senes
Protein S-glutathionation has been demonstrated to be one of the cellular responses under oxidative stress and may be i
PURPOSE: Oxidative injury is involved in retinal and macular degeneration. We aim to assess if retinal degeneration asso
The abilities of captopril and niacin to protect against the lung toxicity of paraquat (PQ) were studied. The anti-oxidative
Paraquat (PQ) induces lung, liver and kidney damage. Since PQ mainly is eliminated by the kidney, the kidney damage is
OBJECTIVE: To investigate the protective effect of curcumin (CU) on type II alveolar epithelial cells (A549 cells) during par
OBJECTIVE: To investigate the effect of curcumin on liver injury in rats induced by paraquat-mediated oxidative stress an
Biochemical and morphological studies of rat lung were performed to determine the role of lipid peroxidation in the in vi
Exposure to paraquat leads to acute lung injury and oxidative stress is widely accepted as a contributor to paraquat-indu
It is our hypothesis that as a consequence of increased oxidative stress, rats develop lung injury with increased cholester
Peroxiredoxin 6 (Prdx6) and cytosolic GSH peroxidase (GPx1), both GSH-dependent peroxidases, were compared for the
Under aquarium conditions, treatment with the herbicide paraquat (PQ) and with the insecticide methidation (MD) caus
ABSTRACT Cyanide (KCN) and paraquat (PQ) are very toxic to mitochondria. In this study the toxicity of KCN and PQ in th
Paraquat action on glutathione reductase activity and intratissue distribution in the liver of intact rats and also in the ani
A simple means of measuring of 8-hydroxyguanine (8-OHGua) levels in urine was developed. Rat and human urine sampl
Nitric oxide (NO) reacts with superoxide to form the potent oxidant peroxynitrite, which causes serious cell damage. Inte

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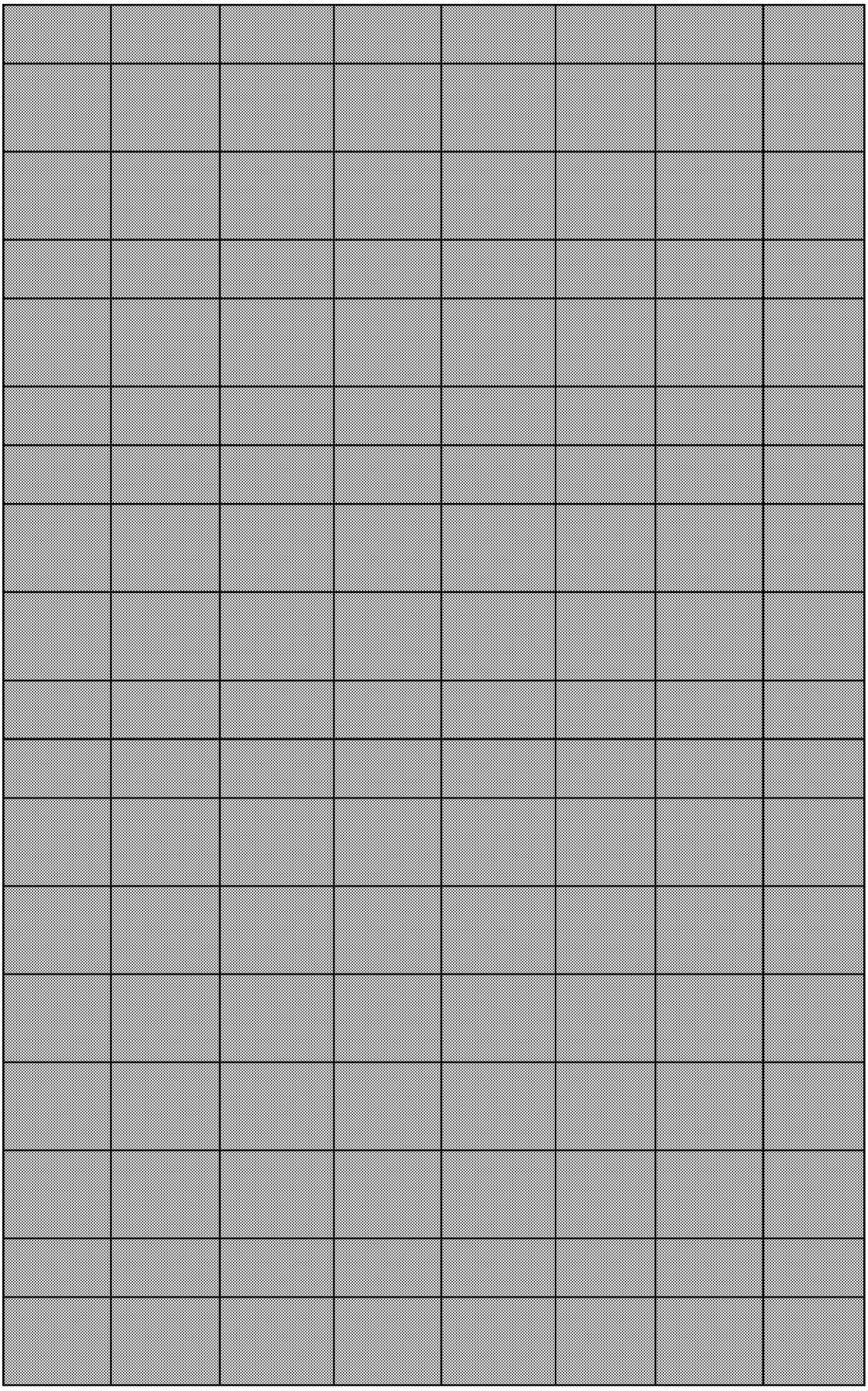

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An attempt has been made in the present report to evaluate quantitatively the sensory activity in both vagal nerves of co
OBJECTIVE: To investigate the change of oxidative stress and nuclear factor-kappaB (NF-kappaB) activity in acute paraqua
Paraquat causes lung injury by oxidative stress. After 48 h of intraperitoneal administration of paraquat (50 mg/kg of boc
The antioxidative role of Se-dependent cellular glutathione peroxidase (EC 1.11.1.9, GPX1) in vivo has not been establish
Paraquat, a widely used herbicide, is well known to exhibit oxidative stress and lung injury. In the present study, we inve
Paraquat (PQ) is a herbicide that is very toxic to all living organisms. It generates free radicals and leads to acute or chron
The aim of the present study was to show the abilities of captopril as a thiol ACEi (angiotensin converting enzyme inhibit
Paraquat (PQ) was administered intraperitoneally to male Wistar rats at a dose of 30 mg/kg. This dose caused mortality i
Oxidative stress is one of the major players in the pathogenesis of maneb (MB) and paraquat (PQ)-induced disorders. N-a
We attempted to determine whether betanin (from natural pigments) that has anti-oxidant properties would be protecti
The effects of natural pigment betanin on oxidative stress and inflammation in kidney of paraquat-treated rat were inves
This study was carried out to highlight the role of PPARgamma receptors and atorvastatin's protective effect on paraquat
The present study evaluated the protective effect of artificial sweetener neohesperidin dihydrochalcone (NHDC) against
CONTEXT: Paraquat (PQ) causes lethal intoxication by inducing oxidant injury to the lung. Selenium is a cofactor for gluta
BACKGROUND: Since phenolic compounds have been reported as effective antioxidants, this study was designed to asse
Thalidomide has been used in inflammatory and autoimmune disorders due to its anti-inflammatory activity. Paraquat (P
Although different treatment modalities have been implemented for pulmonary fibrosis, the results have not been prom
OBJECTIVE: To explore the pathogenesis of paraquat poisoning and observe the change in lipid peroxidation of rats treat

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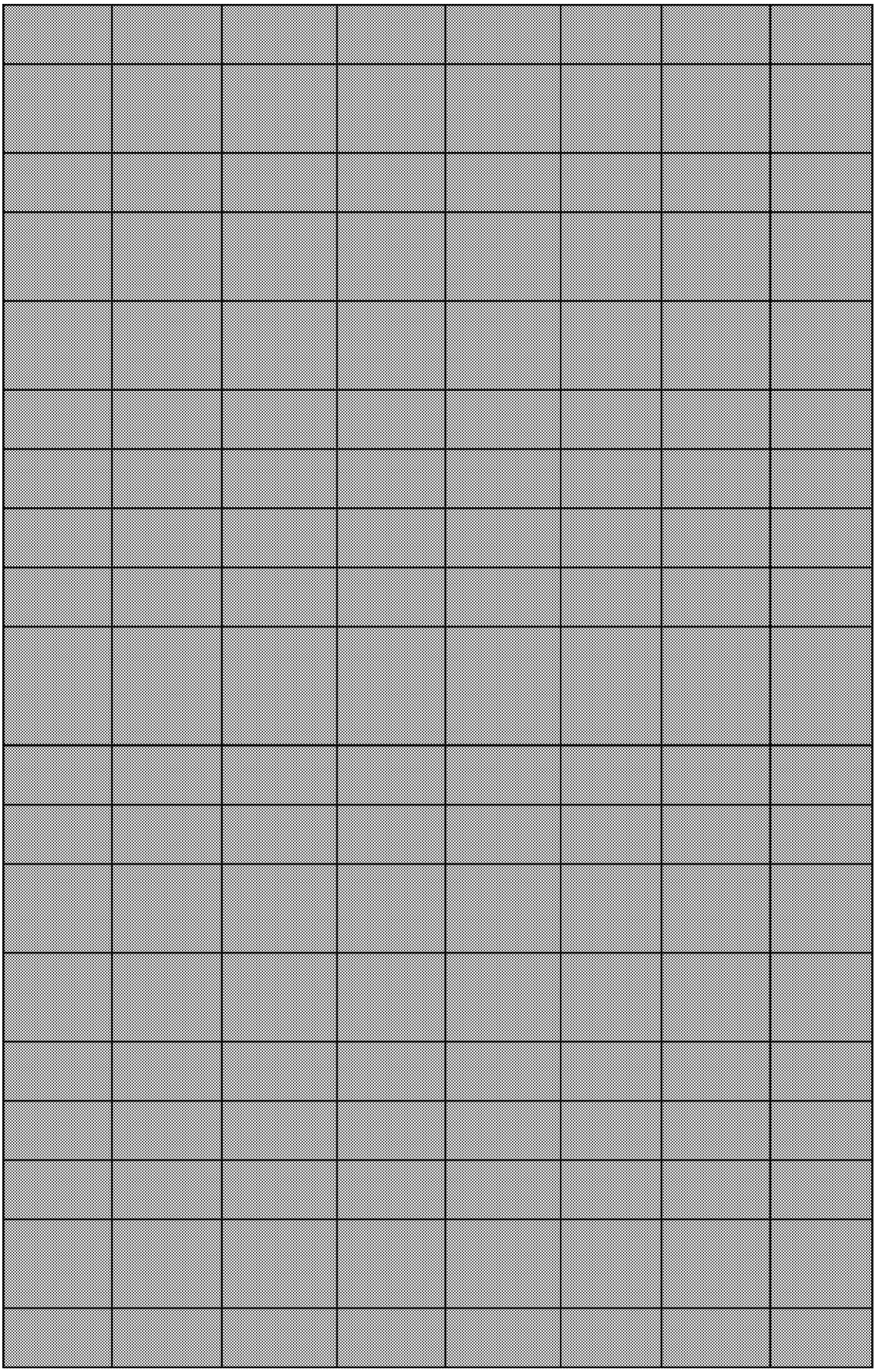

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BACKGROUND: Transgenic mice carrying a human mutant transthyretin (TTR) gene are too small for in vivo experiments.
BACKGROUND: Herbal medicines have been long used for antioxidant properties. The purpose of this study was to invest
Acute paraquat (PQ) poisoning induces redox cycle and leads to fatal injury of lung. Clinical management is supportive in
Isolated perfused rat lungs were used to investigate effects of paraquat on lung glucose metabolism. Lungs were ventilat
Retinitis Pigmentosa (RP) comprises a group of rare genetic retinal disorders in which one of several different mutations
The glutathione and NADP+ status of perfused rabbit lung was determined both before and after perfusion with 1 mM pa
Reactive oxygen species are known to play a key role in the development of acute lung injury, and such injury can be alle
Ethane and pentane have been measured as an index of lipid peroxidation occurring in the isolated perfused rat heart as
We investigated the effect of desferrioxamine, an effective iron chelator, on animal survival and on plasma vitamin E leve
The specific mechanisms underlying paraquat (PQ)-induced lung injury remain unknown, which limits understanding of it
Pulmonary fibrosis is one of the most common complications of paraquat (PQ) poisoning, which demands for more effec
The in vivo effects of oxidative stress on adipokinetic hormone (AKH) titer in short-winged (brachypterous) males of the f
Paraquat was administrated to pathogen-free male rats orally, and the livers were studied by light and electron microsco
This study investigated the pathological morphofunctional adaptations related to the imbalance of exercise tolerance trig
Paraquat, a widely used herbicide, causes severe lung damage in humans and laboratory animals. Pulmonary edema is a
The diamine cadaverine, and the polyamines spermidine and spermine have been shown to accumulate into rat lung slic
The objective of these studies was to determine the accumulation and fate of the disulphide, cystamine by rat lung slices

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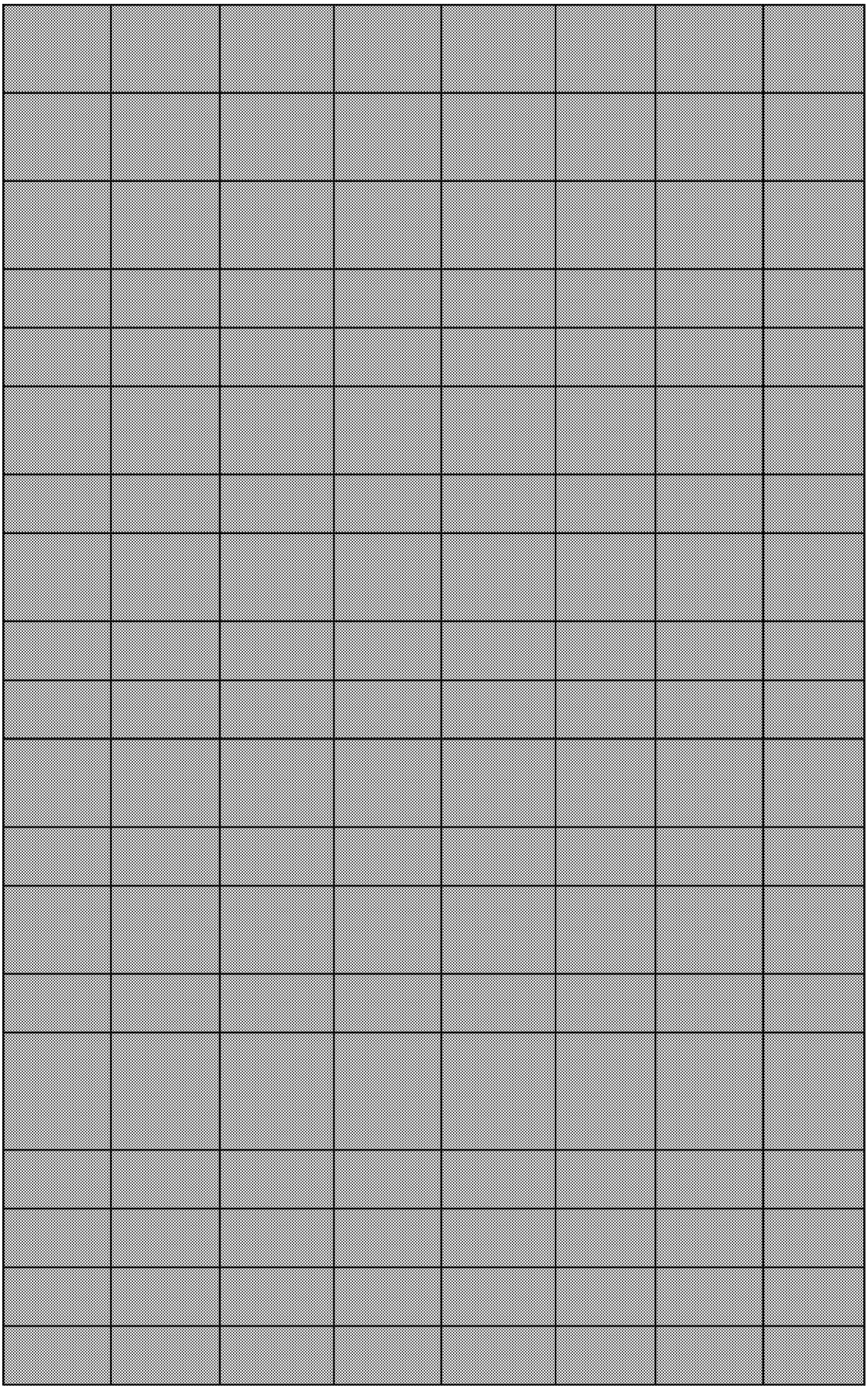

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The effects of L-carnitine on toxicity induced by paraquat (PQ) in mice were investigated. L-carnitine pretreatment surpri
Beyond their classical role as a class of female sex hormones, estrogens (e.g. 17beta-estradiol) exert important biological
The in vivo paraquat-induced oxidative stress in rat tissue was studied by analyzing cholesterol-derived hydroperoxide as
This study was undertaken to determine whether bioavailable zinc can influence the effects of oxidative stress on culture
The interrelationship among water-stress-induced abscisic acid (ABA) accumulation, the generation of reactive oxygen sp
Phospholipid hydroperoxide glutathione peroxidase (PHGPx) is a major antioxidant enzyme and may protect against lipic
Andean wetlands are characterized by their extreme environmental conditions such as high UV radiation, elevated heavy
Direct detection of intracellular superoxide anion radical (O(2)(.-)) production is of critical importance for investigating th
Antioxidant enzymes, including superoxide dismutase, are important for protecting the lung against O2 injury. Manganes
The elucidation of mechanisms plants use to overcome oxidative stress is facilitated where there is intra-specific genetic
A GST (EC 2.5.1.18) gene (Gst-cr 1) from cotton was introduced into Nicotiana tabacum by Agrobacterium tumefaciens-m
Copper/zinc superoxide dismutase (CuZnSOD) catalyses the conversion of O2.- into H2O2. Constitutive overexpression of
Transfection of a pSV2 human copper-zinc superoxide dismutase expression vector into murine fibroblasts resulted in sta
Antioxidant enzymes such as superoxide dismutase (SOD) and catalase (CAT) have been considered to have a beneficial e
Diverse stimuli, including shear stress, cyclic strain, oxidized LDL, hyperglycemia, and cell growth, modulate endothelial n
The glutathione peroxidase activity catalyzed by the seleno-organic anti-inflammatory drug Ebselen (registered under the
To investigate the roles of CuZn superoxide dismutase (CuZnSOD) and Mn superoxide dismutase (MnSOD) in oxygen radi
Although yeast cells grown in abundant glucose tend to acidify their extracellular environment, they raise the pH of the e

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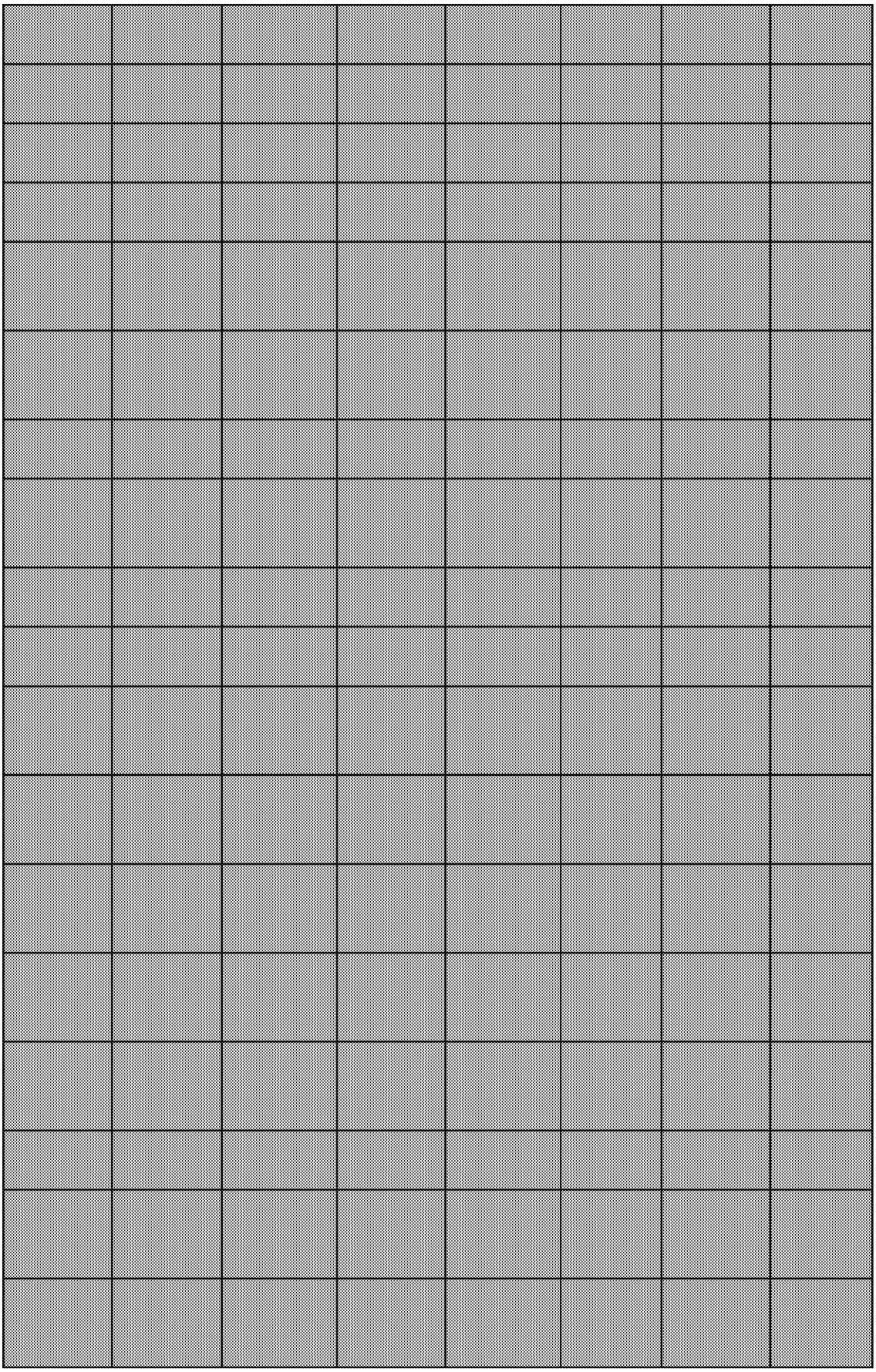

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Mutants of Escherichia coli lacking superoxide dismutase (SOD) activity were used to explore the sensitivity of aconitase
Among the phenotypes of Saccharomyces cerevisiae mutants lacking CuZn-superoxide dismutase (Sod1p) is an aerobic ly
Superoxide dismutase is considered important in protection of aerobes against oxidant damage, and increased tolerance
LAMMER kinases (also known as CDC-2-like or CLKs) are a family of dual specificity serine/threonine protein kinases that
The ability of a set of Photobacterium damselae ssp. piscicida strains isolated from different fish species to produce diffe
We investigated the correlation between the SOD activity of Helicobacter pylori (H. pylori) and gastroduodenal diseases
Insects can rapidly adapt to environmental changes through physiological responses. The red flour beetle Tribolium casta
1. Guinea-pigs, which exhibit a similar metabolism to that of man insofar as they are incapable of synthesizing ascorbic a
In vitro experiments were performed to evaluate the capacity of the redox cycling compounds mitomycin C (MC), nitrofu
The bacterial physiology of streptonigrin toxicity was further investigated. An optimal oxygen concentration for toxicity w
The effect of various herbicides on glutathione levels in barley (Hordeum vulgare L.), tobacco (Nicotiana tabacum L.), soy
Different cellular and biochemical cytotoxicity indicators have been assessed to evaluate the damages caused in Vero mo
Reactive oxygen species (ROS) are important second messengers for the induction of several genes in a variety of physiol
Several manganic porphyrins, with substituents on the methine bridge carbons, were prepared and examined for stabilit
Reactive oxygen species are involved in tumor promotion or apoptosis. In assaying prooxidant or antioxidant activities, cy
It is well known that ICAM-1 expression can be stimulated by TNF and by oxidative stress, via the activation of specific tra
The significance of total glutathione content was investigated in two alpine plant species with highly differing antioxidati

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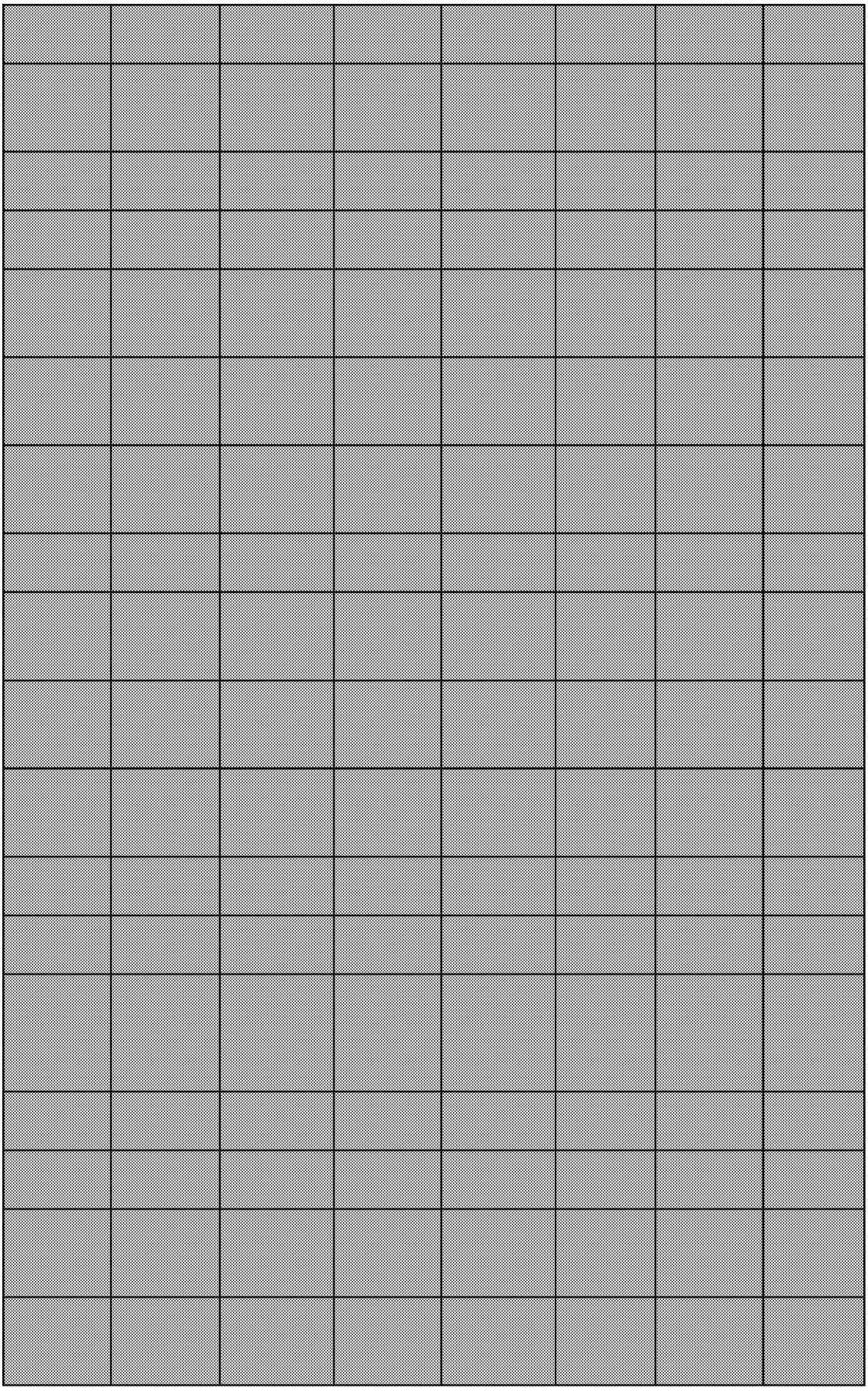

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Oxygen free radicals are thought to play an essential role in senescence, especially those derived from peroxisomes. The
Lipid peroxidation has been implicated in a variety of pathophysiological processes, including inflammation, atherogenes
The acute lethality of paraquat (1, 1'-dimethyl-4,4'-bipyridinium dichloride; also methyl viologen) for chicks was reduced
The response of the chloroplastic antioxidant system of the cultivated tomato Lycopersicon esculentum (Lem) and its wil
Salt damage to plants has been attributed to a combination of several factors including mainly osmotic stress and the acc
To clarify the mechanism of cephalosporin nephrotoxicity, the cytotoxic effects of cephaloridine (CER), a nephrotoxic cep
The role of active oxygen species and lipid peroxidation in the toxic effects of diquat, paraquat and other bipyridyl herbic
BACKGROUND: Most prostate cancer cells respond to initial hormonal therapy; however, some of them eventually acqui
AIMS: A better understanding of the role of antioxidant enzymes, superoxide dismutase (SOD) and catalase (CAT) in the p
Reactive oxygen species (ROS), including superoxide (O2.-/ HO2.) and hydrogen peroxide (H2 O2), are differentially proc
Black-grass (Alopecurus myosuroides) is a major weed of wheat in Europe, with several populations having acquired resi
This survey summarizes the findings, accumulated within the last 2 years, concerning melatonin's role in defending again
Differnential sensitivity to the oxidant paraquat was observed in pea (Pisum sativum L.) based on cultivar and leaf age. To
Growth of Saccharomyces cerevisiae ure2Delta mutant strain was investigated in the presence of diverse oxidant compo
The expression of MDR1b coding mRNA is increased in alveolar type II cells from juvenile rat lung in culture. Hydrogen pe
Ascorbate peroxidase (APX) isoenzymes, distributing in at least four distinct cell compartments, the chloroplastic stroma
The antioxidative capacity of two lactic acid bacteria isolated from Kimchi, a Korean fermented food, was evaluated by m
Although CuZn-superoxide dismutase (CuZnSOD) has been shown to reduce oxidative damage in several systems, the qu

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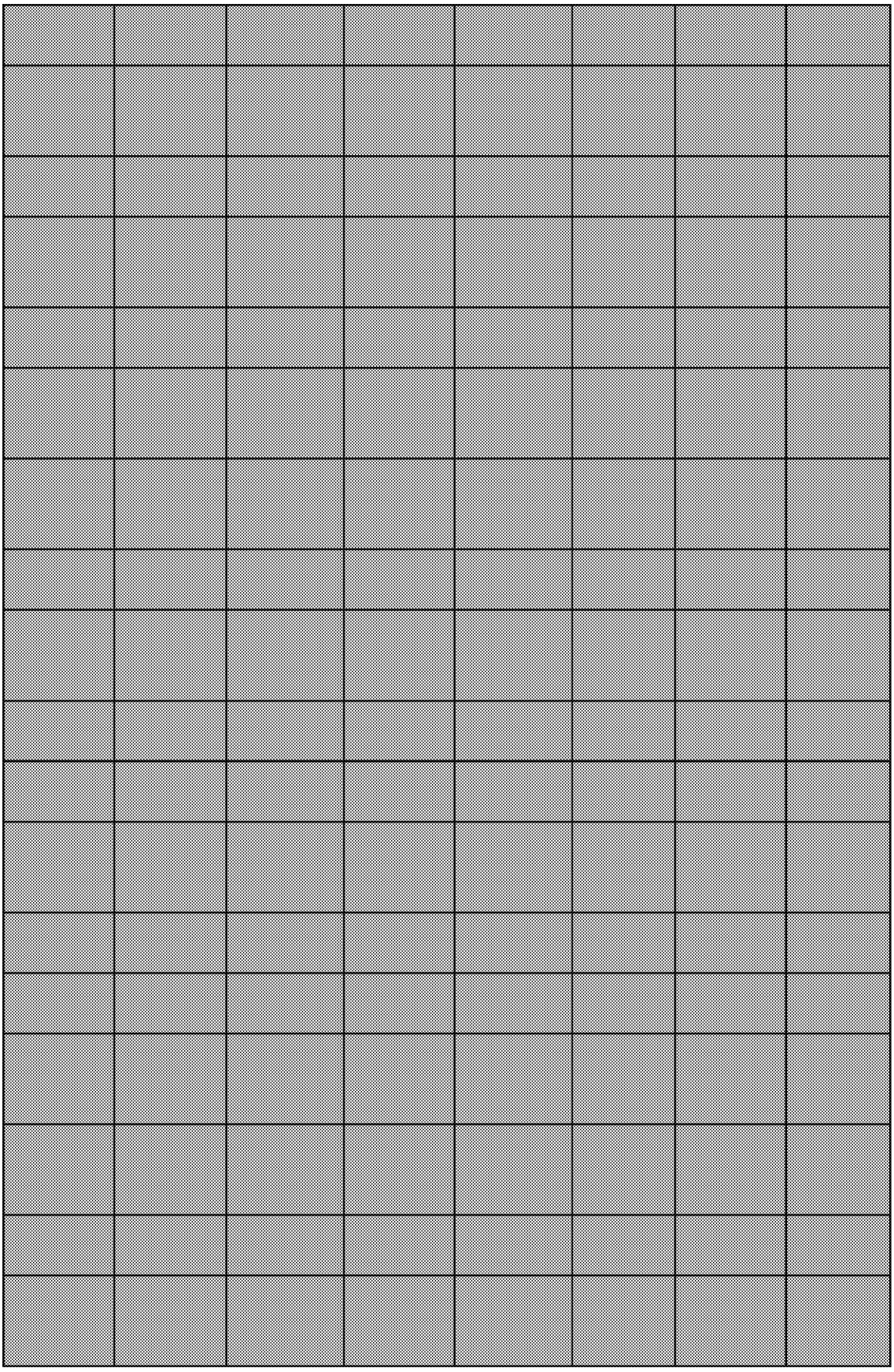

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To know more about the photo-inhibition of photosynthesis under field conditions, its relationship with reactive oxygen
A 4-h exposure of Scenedesmus sp. to Cu or Zn enhanced intracellular levels of both test metals and proline. The level of
5'-Adenylyl sulfate (APS) reductase (EC 1.8.4.9) catalyzes a key reaction in the plant sulfate assimilation pathway leading
Studies have implicated active oxygen species (AOS) in the pathogenesis of various lung diseases. Many chemical and ph
Various properties of skeletal muscle, including high metabolic activity and high levels of heme-containing proteins, rend
The two Neurospora crassa catalase genes cat-1 and cat-3 were shown to encode Cat-1 and Cat-3 large monofunctional c
The protective effect of a cytokinin benzyladenine (BA), against toxicity of paraquat (PQ), a widely used herbicide and a w
Reactive oxygen species (ROS)-specific mechanisms of drug resistance were explored in paraquat (PQ)-resistant acute m
In the present work, the response of tobacco (Nicotiana tabaccum L.) wild-type SR1 and transgenic CAT1AS plants (with a
Melatonin, the chief secretory product of the pineal gland, is a direct free radical scavenger and indirect antioxidant. In te
Red blood cells are well equipped to handle intracellular oxidative stress, their membranes are permeable to O2- and H2
1. The cholinesterases play an important role in the innervation of organs. The ratio of solubilized to membrane-bound c
Cellular defense systems against reactive oxygen species (ROS) include thioredoxin reductase (TrxR) and glutathione red
The protective effects of chlorogenic acid on paraquat-induced oxidative stress were examined in rats. The activities of e
Protective role of NADP-isocitrate dehydrogenase in the oxidative inactivation of mitochondrial enzymes was analyzed. A
Exposure of cells to paraquat leads to production of superoxide anion (O2*-). This reacts with hydrogen peroxide to give
The glutathione-glutathione peroxidase system is an important defense against oxidative stress. The ability of this systen

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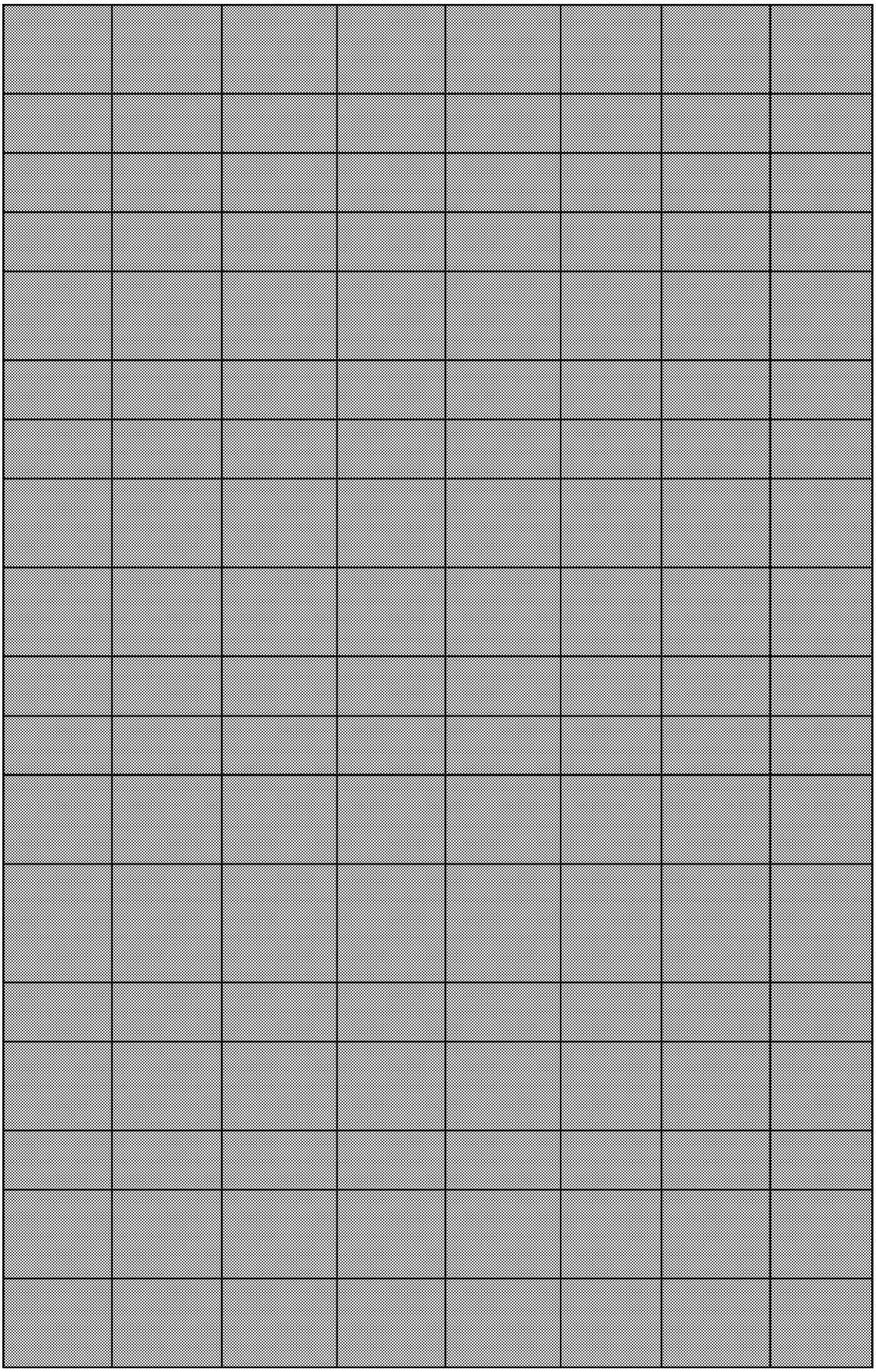

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Plasma GSH and GSSG concentrations were examined after the administration of compounds that deplete intracellular G
The effects of water deficits on plant morphology and biochemistry were analyzed in two photoperiodic strains of field-g
Phytoextraction potentials of two transgenic (TR) poplar (Populus x canescens) clones TRggs11 and TRlgl6 were compare
Peroxynitrite [ONOO(H)] is an oxidant associated with deleterious effects in cells. Because it is an inorganic peroxide that
Meningococcal sodC encodes periplasmic copper- and zinc-cofactored superoxide dismutase (Cu,Zn SOD) which catalyze
Paraquat-resistant HeLa cells were selected and characterized to determine the mechanism(s) of the toxic action of para
Two paraquat-resistant clones, PR-1 and PR-2, were selected from CHO K1 cells pretreated with ethyl methanesulfonate.
Oxidative stress and changes in the antioxidant defense system that include the glutathione redox cycle in cultured pulm
We examined if paraquat-induced oxidative stress and cytotoxicity in pulmonary microvascular endothelial cells are asso
The in vivo effect of the known herbicide, paraquat, on both hepatic oxidative stress and heme metabolism was studied.
The purpose of this study was to investigate the hypothesis that paraquat pulmonary toxicity results from cyclic reductio
INTRODUCTION: Human placenta mitochondria produces huge amounts of progesterone necessary for maintaining the p
The effects of paraquat on the superoxide dismutase, catalase, glutathionine peroxidase activities and lipid peroxidation
Possible xenobiotic interactions with thiamine were studied in salmonid fish, by repeatedly injecting two model substanc
NADPH-menadione reductase activity by rat brain microsomes (Ms) was decreased 40-50% by 10 microM dicumarol, a p
A wide range of pollutants in the aquatic environment have the capacity to induce toxic effects expressed as cellular oxid

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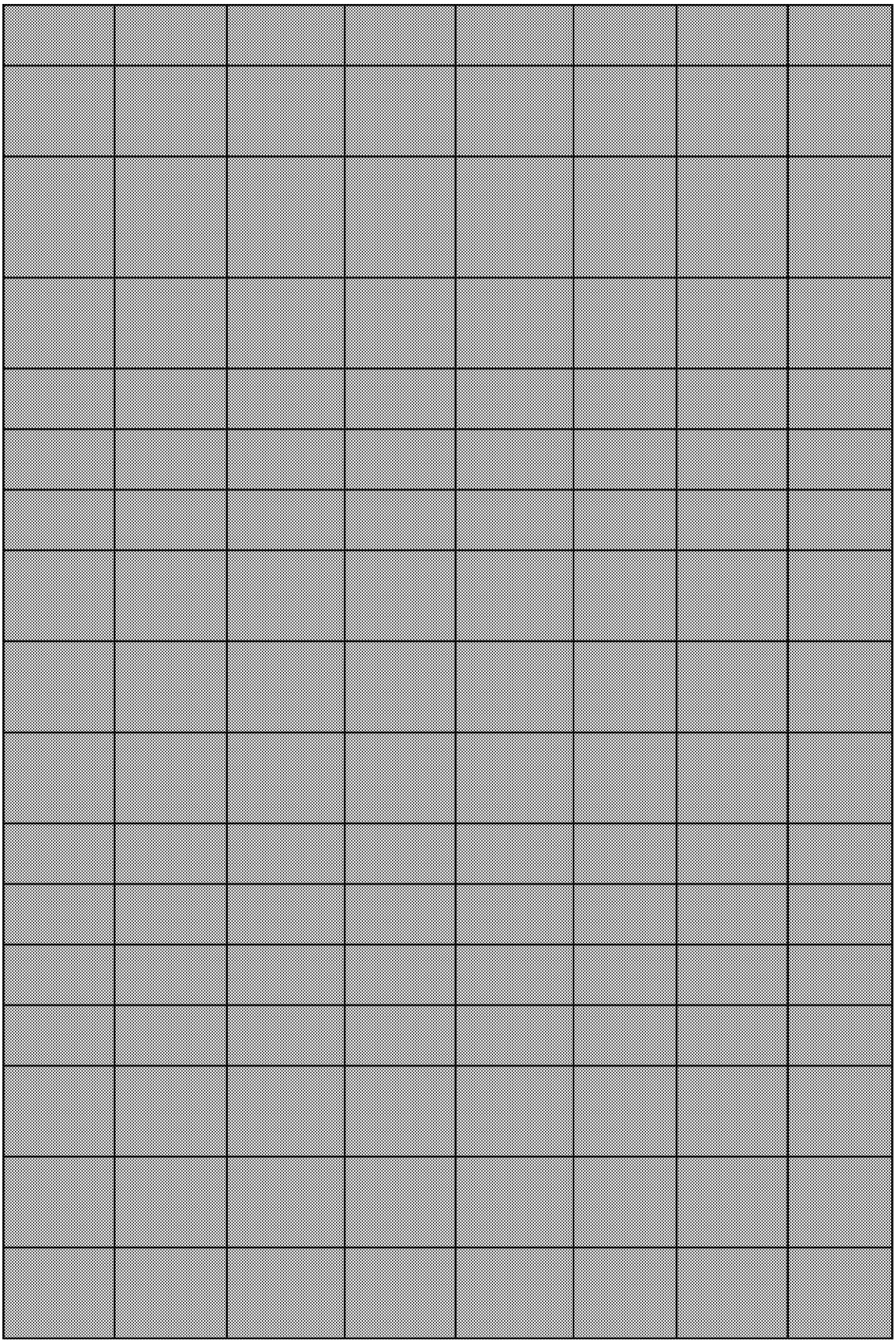

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Mycosphaerella fijiensis causes black leaf streak disease in banana and plantain. This fungus is usually attacked by reacti
The aim of this work was to study the oxidative stress response of Kluyveromyces marxianus to hydrogen peroxide (50 m
AIMS: Some indirect evidences indicate a possible correlation between oxidative stress and motion sickness. The aim of t
Fish (Sparus aurata) were intraperitoneally injected with model xenobiotics and several biomarkers of oxidative stress w
Recently progress has been made on O2 toxicity and pathology related to numerous environmental contaminants in inse
High light levels together with Paraquat treatment or exposure to pollutants (e.g. SO2) can cause oxidative stress in epip
The content of [alpha]-tocopherol ([alpha]T) in isolated soybean (Glycine max, var Hood) embryonic axes was measured
We and other researchers verified that excessively produced free radicals by neutrophils induce various diseases such as
Azospirillum is a plant growth-promoting rhizobacteria (PGPR) able to enhance the growth of wheat. The aim of this stud
Catalases are oxidized by singlet oxygen giving rise to more acidic conformers detected in zymograms after electrophore
Manganese superoxide dismutase (MnSOD) is a nuclear encoded mitochondrial matrix enzyme that functions to scaveng
To determine whether overexpression of antioxidant enzymes in lung epithelial cells prevents damage from oxidant inju
Gene therapy-mediated overexpression of superoxide dismutases (SOD) appears to be a promising strategy for modulati
Chloroplast-targeted overexpression of an Fe superoxide dismutase (SOD) from Arabidopsis thaliana resulted in substant
A poplar hybrid, Populus tremula x Populus alba, was transformed with the bacterial genes for either glutathione reducta
To evaluate the effect of over-expressed Mn-superoxide dismutase (MnSOD) on stress resistance in maize, an over-expre
Pharmacological delivery of nitric oxide (NO) stimulates the cardiac Na(+)-K(+) pump. However, effects of NO synthesized

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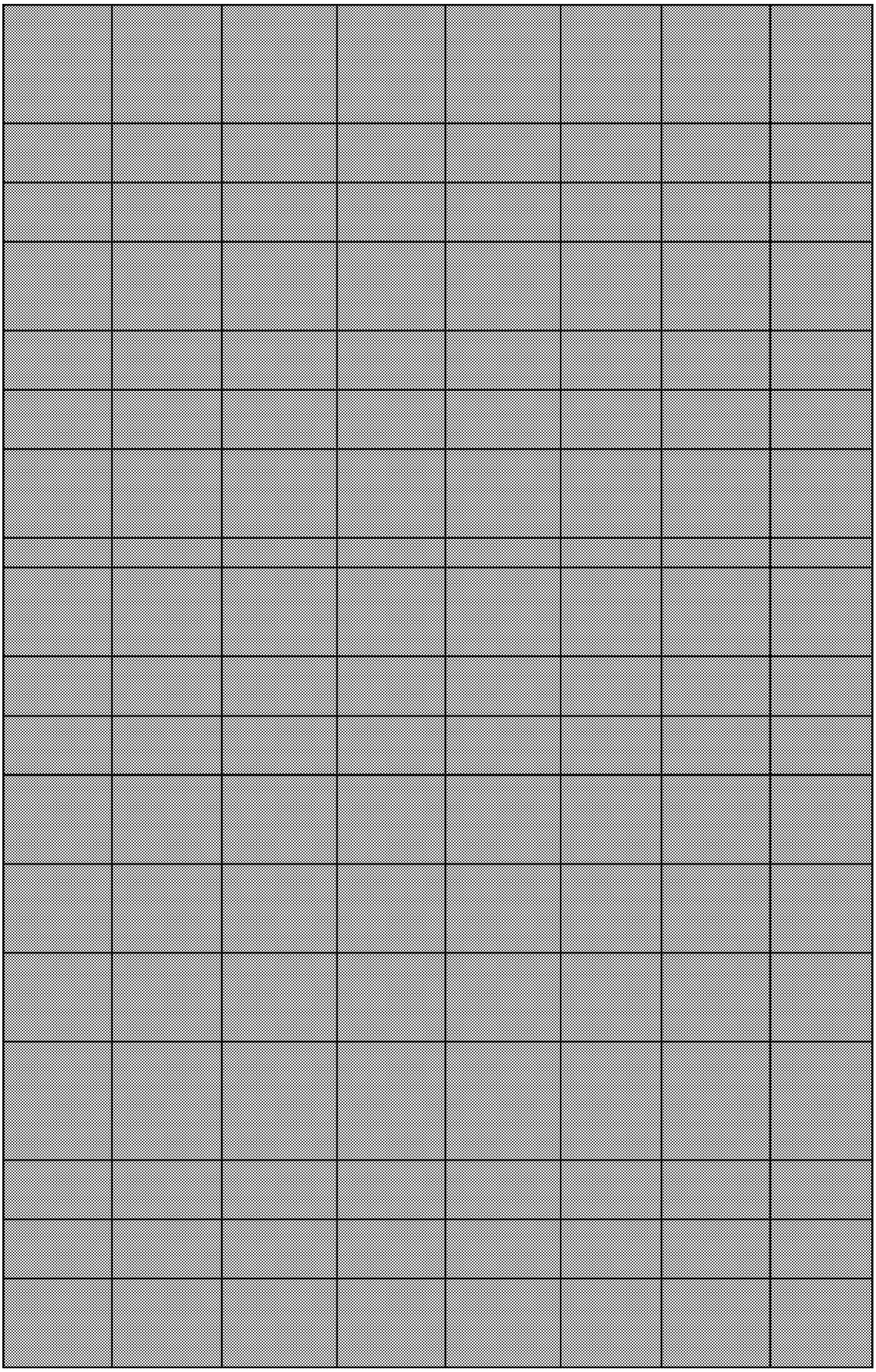

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Several isoforms of superoxide dismutase (SOD) with a high isoelectric point (pI) have been identified by isoelectric focus
The heterocystous nitrogen-fixing cyanobacterium, Anabaena sp. strain PCC7120 displayed two superoxide dismutase (S
Nitric oxide and superoxide are free radicals that appear to contribute to the pathogenesis of a number of brain disorder
The role of thyroid hormone [L-3,5,3'-triiodothyronine (T3)] and the thyroid hormone receptor (TR) in regulating growth,
Reactive oxygen species (ROS) have been implicated in the pathogenesis of many clinical disorders such as adult respirat
When paraquat was incubated with mouse brain microsomes in the presence of NADPH, a Nash-reagent-reactive substa
The symbiosis between legumes and rhizobia is characterised by the formation of dinitrogen-fixing root nodules. In natu
NADH was found previously to catalyze the reduction of various ferric complexes and to promote the generation of react
The glutathione peroxidase (GSH-Px)-like reduction of H2O2 by the selenoorganic compound 2-phenyl-1,2-benzoisoselen
Oxidative stress responses generated by paraquat (PQ), an herbicide that triggers an oxidative stress reaction in leaves, v
To examine the effect of compound deficiencies in antioxidant defense, we have generated mice (Sod2(+/-)/Gpx1(-/-)) th
Previous research has indicated that oxidants, antioxidants and the intracellular redox state regulate the activities of a va
The efficiency with which beta-carotene protects against oxidative stress in chicken embryo fibroblasts (CEF) at low O2 p
The ability of beta-carotene to protect against oxidative stress in vitro was assessed. Primary cultures of chicken embryo
A period of research with Helmut Sies in the 1980s is recalled. Our experiments aimed at an in-depth understanding of m
Human retinal pigment epithelium (RPE) contains two genetically distinct forms of superoxide dismutase (SOD) enzymes
We treated leaves of winter wheat (Triticum aestivum L.) with cold, paraquat, or 3-amino-1,2,4-triazole and compared th
Free radicals generated from metabolism of foreign compounds can have extremely detrimental consequences on cell fu

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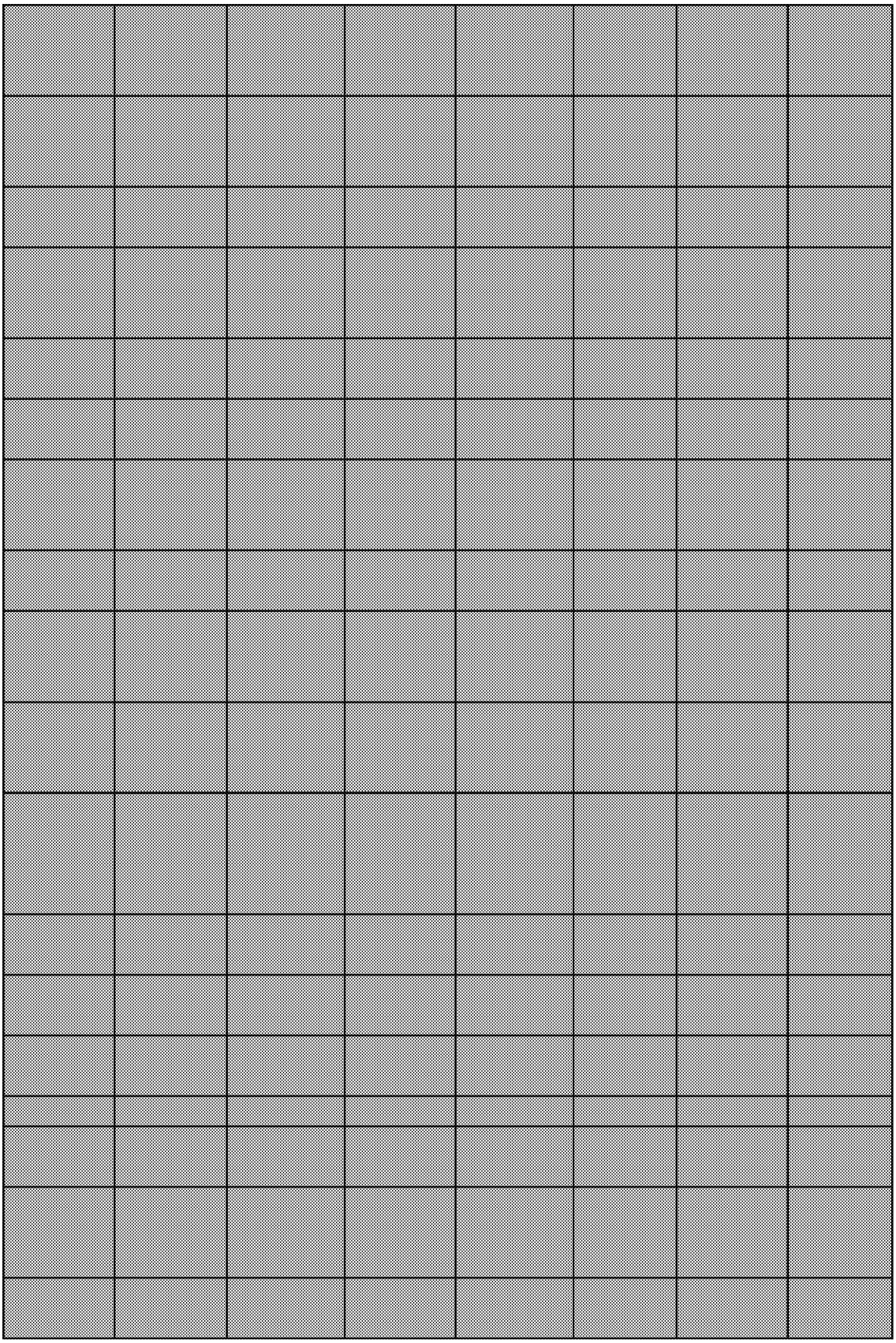

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Dermal fibroblasts from long-lived Snell dwarf mice can withstand a variety of oxidative and non-oxidative stressors com
One of the main antioxidant enzymes, catalase (CAT, EC 1.11.1.6), is capable of catalyzing the dismutation of H(2)O(2). Th
Oxidative stress is implicated in toxicant-induced inflammation leading to chronic diseases. Polymorphonuclear leukocyt
In plants, environmental adversity often leads to the formation of highly reactive oxygen radicals. Since resistance to suc
In cold-hardened leaves (CHL) of winter rye (Secale cereale L.) much higher levels of malate were detected by (13)C-NMR
Chronic inflammation increases lymphoma risk. Chronic inflammation exposes cells to increased reactive oxygen species
Lucigenin and paraquat are similar in that each can be taken into Escherichia coli and can then mediate O2.- production b
Different stress conditions can induce changes in the activity of the antioxidant enzymes superoxide dismutase (SOD, EC
Cephaloridine produces renal cortical injury, but the precise mechanism responsible for this nephrotoxicity remains uncl
Retene (7-isopropyl-1-methylphenanthrene) causes blue sac disease (BSD) in early life stages of fish, an effect similar to t
Incubation of human term placental mitochondria with Fe2+ and a NADPH-generating system initiated high levels of lipid
Glyceraldehyde-3-phosphate dehydrogenases catalyze key steps in energy and reducing power partitioning in cells of hig
The role of abscisic acid (ABA) in the signal transduction pathway associated with NaCl-induced up-regulation of antioxid
An approach for enzyme therapeutics is elaborated with cell-implanted nanoreactors that are based on multiple enzyme
This study investigated the effects of paraquat, a widely used herbicide, on the aquatic unicellular alga Chlorella vulgaris
The effects of mitoxantrone, ametantrone and a monohydroxylated anthracenedione on hepatic microsomal, cardiac sar
In Plasmodium falciparum-infected red blood cells (RBCs), the flavoenzyme glutathione reductase (GR) regenerates redu

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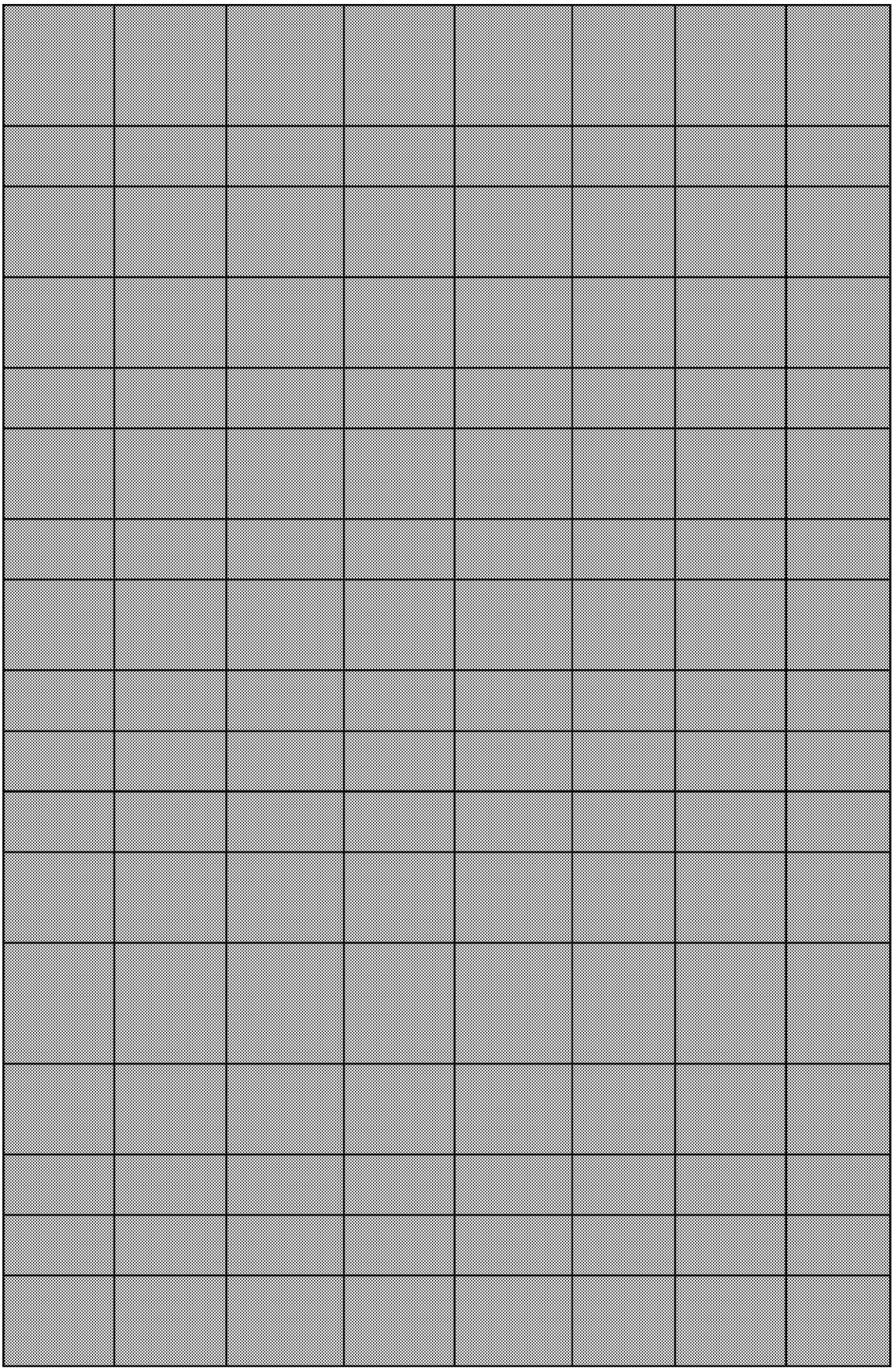

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1. The influence of lindane and paraquat on oxidative stress-related parameters of the red blood cell was studied in vitro
The cytostatic Adriamycin and the herbicide paraquat form reactive oxygen species during enzymatic activation. Adriamy
Reactive oxygen species (ROS) are thought to play a role in the aging process as well as in a number of human diseases st
Mitogen-activated protein kinase (MAPK) cascade has been shown to be important components in stress signal transduc
Cells hyper-resistant to hydrogen peroxide (H2O2) were obtained from a Chinese hamster cell line (CHL) by repeated tre
Oxygen free radicals have the potential to mediate cell injury. Defenses against such radicals include the antioxidant enzy
Conditioning is the phenomenon where exposure to moderate-level acoustic stimuli can increase the ear's resistance to
Enzymatic and nonenzymatic mixed-function oxidase systems have been shown to generate an oxidant that catalyzes the
Paraquat (1,1'-dimethyl-4,4'-bipyridinium) is a widely used herbicide known to induce skin toxicity. This is thought to be
BACKGROUND: Cassava (Manihot esculenta Crantz) is a tropical root crop, and is therefore, extremely sensitive to low te
To exploit prokaryotic antioxidant enzymes for protection of animal cells from oxidative damage, we expressed catalase-
Perfusion of isolated rat livers with 1 mM paraquat for 3 hours led to a stimulated release of oxidized glutathione into th
Paraquat (1 mM), when added to isolated haemoglobin-free perfused rat liver, leads to an increase of intracellular mixed
The purpose of our study was to investigate the effect of oxidative stress or intracellular glutathione (GSH) depletion on
Inactivation of aconitase by oxidative stress was analyzed under the in vivo and in situ conditions of yeast cells. Treatmen
Chemically modified derivatives of superoxide dismutase (SOD), i.e., cationized (Cat-SOD) and mannosylated SOD (Man-
To study the effect of exogenous oxygen, we added water solution of paraquat to 7 d cultures of Coriolus versicolor for th

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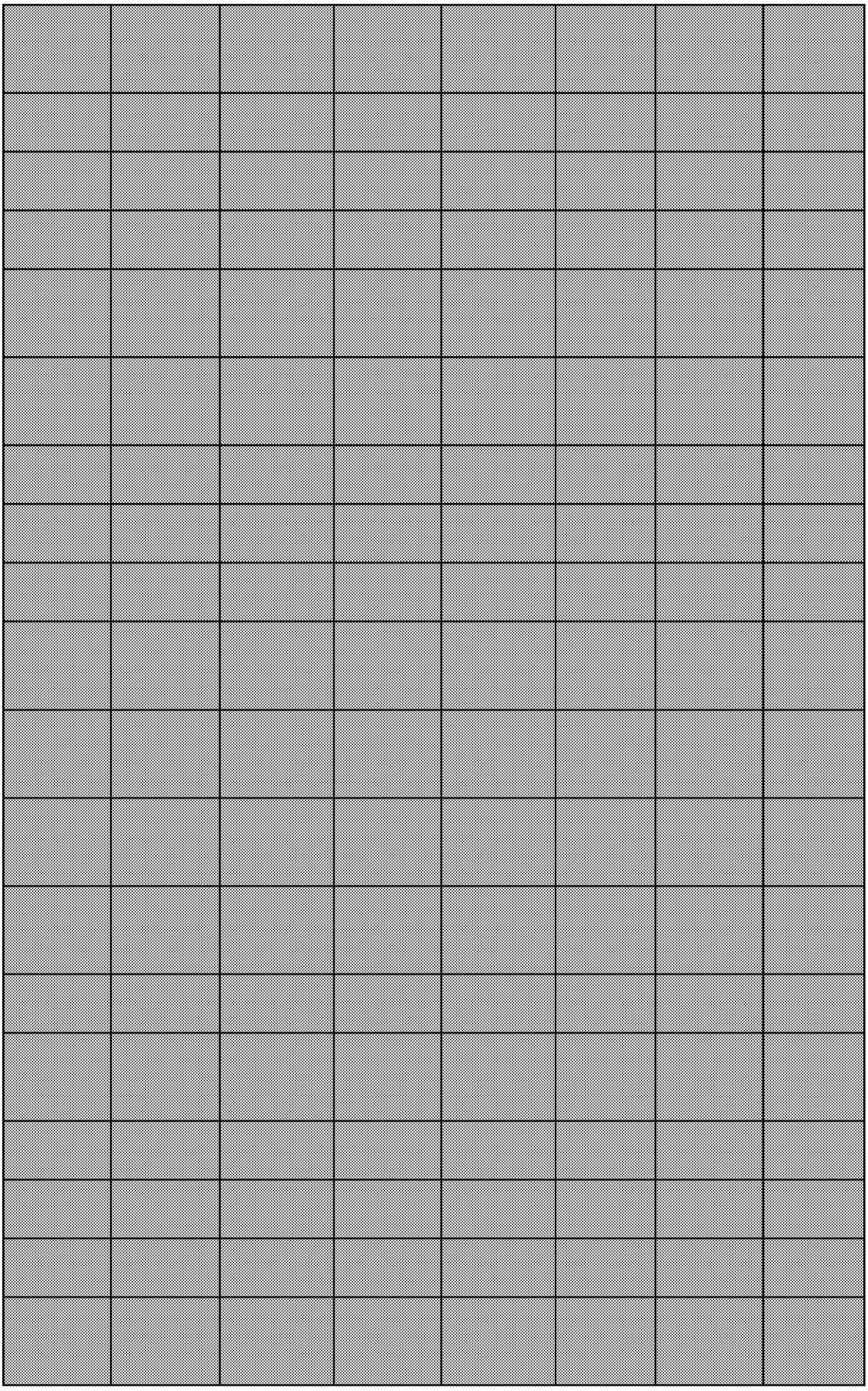

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Biliary excretion of glutathione disulfide (GSSG) is used as an index of oxidative stress. Analysis of endogenous thiols and
The amount of glutathione present in hepatic protein mixed disulfides was determined to be 20-30 nmole/g liver. This w
The effect of iron and other compounds known to be toxic because of the production of oxygen radicals, e.g., paraquat a
Reactive oxygen species (ROS) have been shown to be important messenger molecules in the induction of several genes.
The aim of the study was to establish a 96-well microtiter plate-based reporter gene assay to test the influence of natura
A spontaneous methyl viologen (MV)-resistant mutant of the nitrogen-fixing cyanobacterium Nostoc punctiforme ATCC 2
Transfection of murine NIH3T3 fibroblasts and human MCF7 breast carcinoma cells with a pSV2-derived eukaryotic expre
To test the hypothesis that growth-CO(2) concentrations affect stress susceptibility, leaves of poplar trees (Populus alba x
Glyphosate is one of the most widely used herbicides in cereal-growing regions worldwide. In the present work, the prot
HL60 cells exposed to increasing paraquat concentrations were screened for clones without increased superoxide dismut
Dihydrofolate reductase-minus mutants of Chinese hamster ovary cells were depleted of glutathione peroxidase by trans
Glutathione (GSH) is a low molecular weight thiol compound that plays many roles in photosynthetic organisms. We utili
The effect of chosen compounds on the total glutathione (GSH) level in stationary cultures of S. cerevisiae was compared
The stroma of spinach chloroplasts contains ascorbic acid and glutathione at millimolar concentrations. [Reduced glutath
Glutaredoxins (Grxs) and thioredoxins (Trxs) play important roles in maintaining intracellular thiol-redox homeostasis by
Avena fatua L. caryopses did not germinate at 20 degrees C in darkness because they were dormant. However, they were
Aerobic organisms possess an array of enzymatic defense mechanisms against the toxic effects of active oxygen species.

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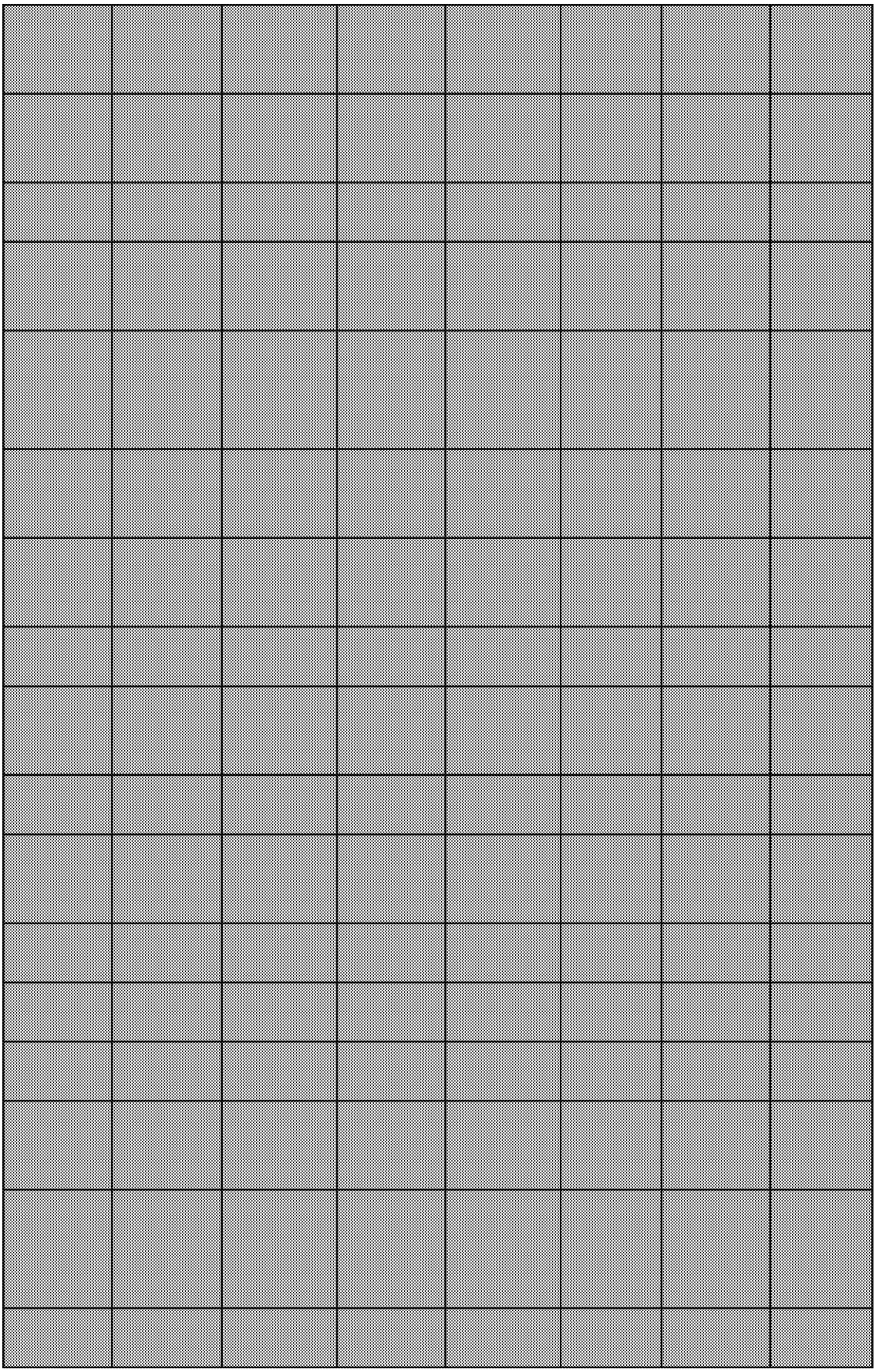

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Before menopause, women have a lower risk of cardiovascular diseases than men. Studies attribute this gender differen
Free radical enhancers, diquat, paraquat, plumbagin and juglone were used to study the oxy radical-induced damage to t
Yeast glutathione reductase catalyzes an NADPH-dependent reduction of the herbicide paraquat in vitro. The single-elec
A number of xenobiotics are toxic because they redox cycle and generate free radicals. Interaction with iron, either to pr
Treatment of male mice with the redox cycling compounds nitrofurantoin, paraquat, diquat or menadione failed to elicit
Manganese superoxide dismutase (Mn SOD) is an important component of antioxidant defense in aerobic cells because
Two phylogenetically unrelated superoxide dismutase (SOD) families, i.e., CuZnSOD (copper and zinc SOD) and FeMn-Car
Our previous study suggests that salicylic acid mediates tolerance in barley plants to paraquat (Ananieva et al. 2002). To
Genetic and biochemical studies demonstrated that Neurospora crassa possesses three catalases encoded by three sepa
Environmental agents may enter the lung via the tracheobronchial tree or via the bloodstream. They can interact with lu
The synthesis of phytochelatins (PCs) in a marine alga, Dunalliela tertiolecta, is strongly induced by Zn. Pretreatment of t
Embryonic cells from transgenic mice with targeted disruption of metallothionein I and II genes expressed no detectable
The influence of colonization of the pea (Pisum sativum L.) by aerobic methylobacteria of five different species (Methylo
Postharvest physiological deterioration (PPD) of cassava (Manihot esculenta) storage roots is the result of a rapid oxidati
The role of ascorbate (AsA) recycling via dehydroascorbate reductase (DHAR) in the tolerance of Chlamydomonas reinha
Cooperative function of superoxide dismutase (SOD) and catalase (CAT), in protection against oxidative stress, is known t
We have found that Bloom's syndrome (BS) cells exhibit elevated levels of superoxide dismutase activity. Since SOD activ

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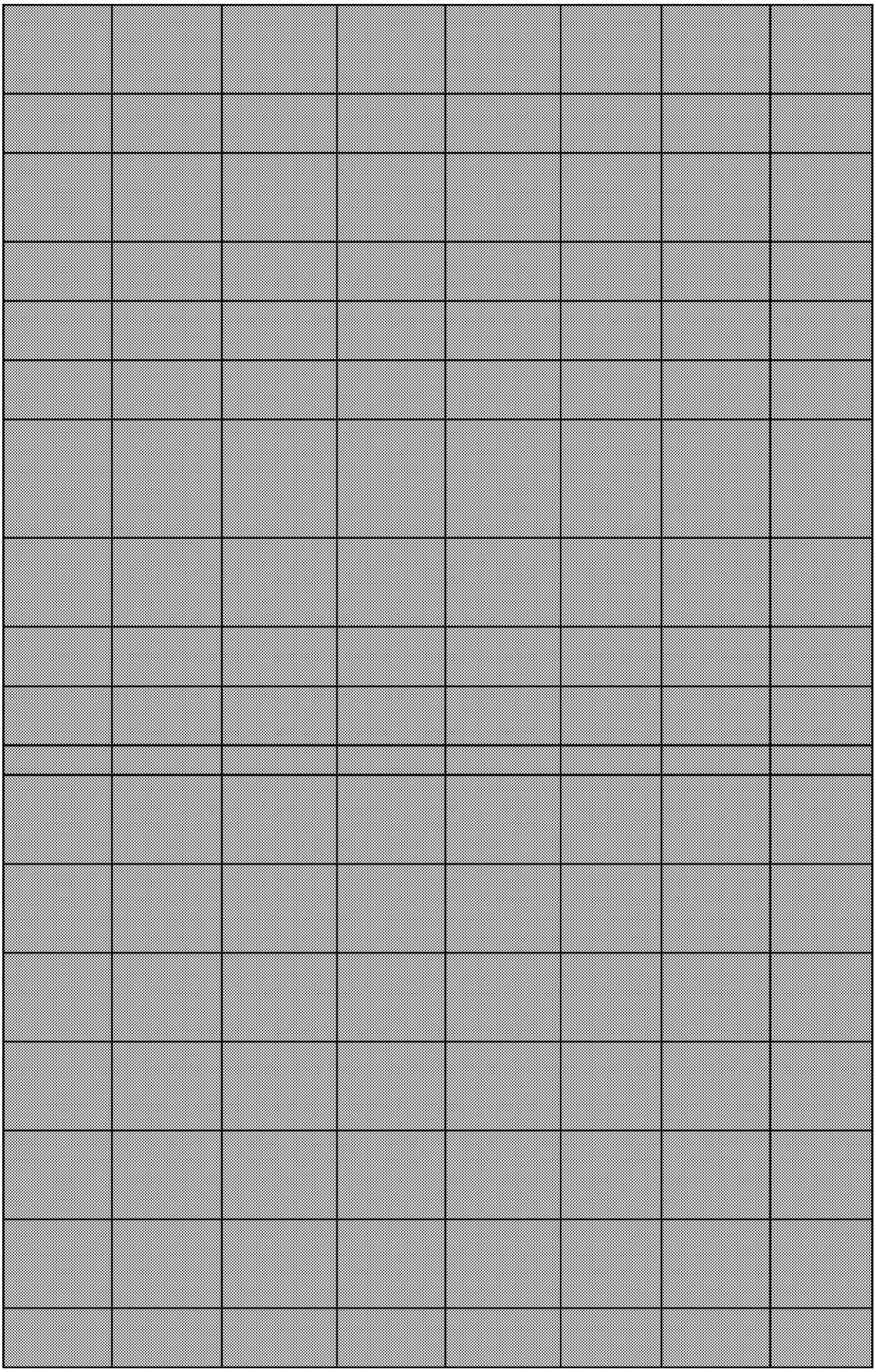

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The effects of yukmi (Decoction of six plants including rehmannia), an herbal formula, were studied on liver oxidant dam
In experiments designed to determine which active oxygen species contribute to hydrogen peroxide (HP)-induced revers
The herbicide paraquat was used to investigate the effects of oxidative stress on the spherulation of Physarum polycepha
In fish, as in other aerobic organisms, glutathione and glutathione-related enzymes are important components in the def
BACKGROUND: DT diaphorase (DTD; NAD(P)H:quinone oxidoreductase; EC 1.6.99.2) catalyses the two electron reduction
1. The effect of a herbicide (paraquat) and an insecticide (methidation) on the periodic activity of mussel in relation to se
Paraquat is a quaternary herbicide widely used for broadleaf weed control, which has been known to be a highly toxic co
Investigation has been made of how the LD50 and LD100 of PQ influence the peroxide metabolism enzymes and lipid per
The effects of oxidative stress in the adult male housefly were examined by the administration of 1 mM paraquat. House
Basal antioxidant defense levels are often aberrant in tumor cells; however, less attention has been given to differences
To determine the effect of oxidative stress on expression of extracellular superoxide dismutase (EC-SOD), CuZn-SOD and
The effectiveness of several sulfhydryl compounds in the treatment of paraquat intoxication has been previously tested b
Oxidative stress is one of the biochemical mechanisms involved in toxicity of cyanobacterial toxins microcystins (MC), bu
The effects of paraquat, the active ingredient of Gramoxone, were studied on frogs (Rana esculenta) kept at 4 degrees C
The effect of in ovo exposure to PCBs, DDE and paraquat on transketolase activity was measured in 19-day-old chicken er
Cyanobacterial toxins have adverse effects on both terrestrial and aquatic plants. Microcystins are cyclic heptapeptides a
Vitamin A (Vit A) is widely suggested to be protective against oxidative stress. However, different studies have been dem

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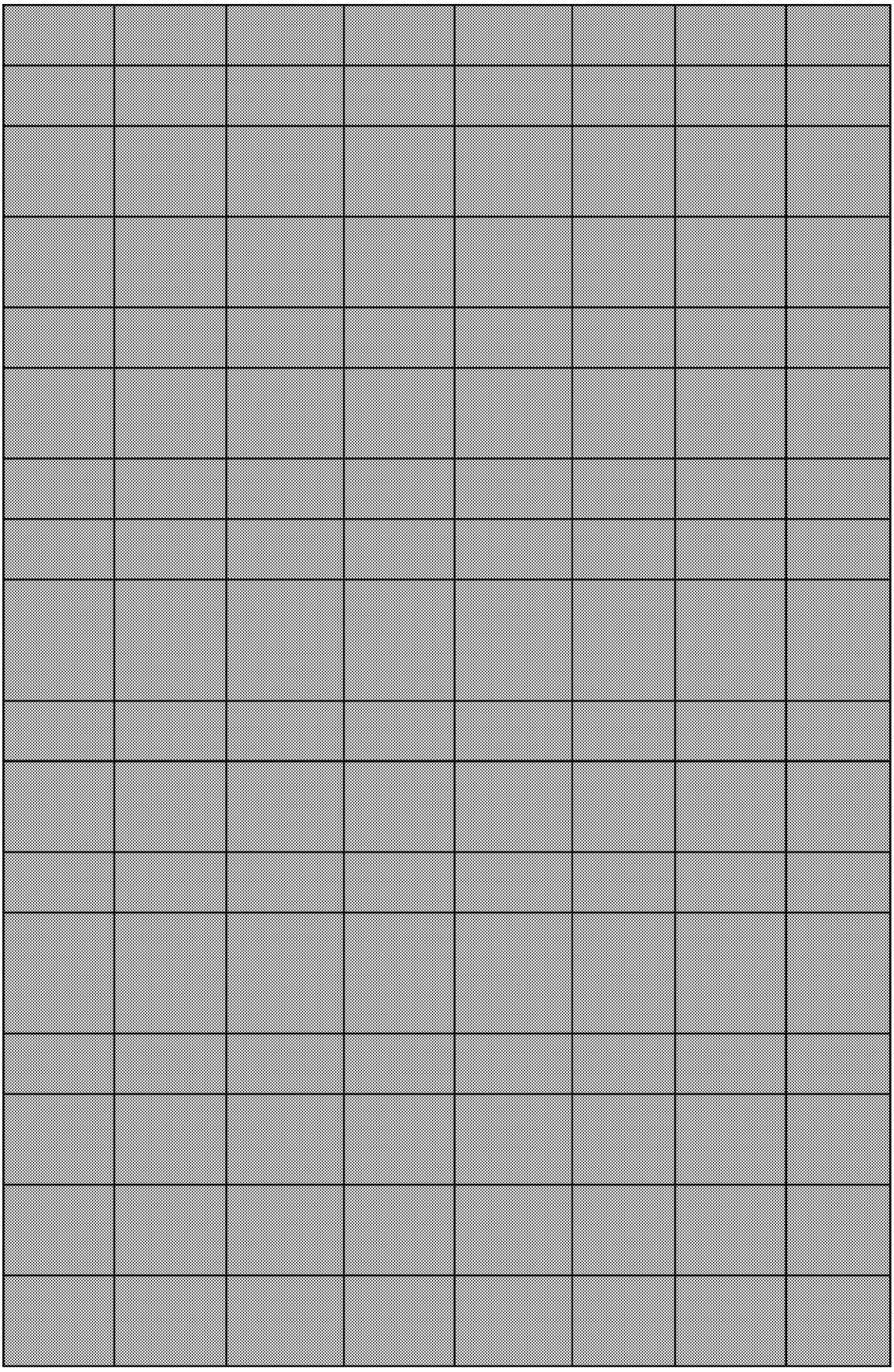

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10-day-old maize leaves were treated with the oxygen free radical-generating herbicide paraquat for 12 h. Paraquat trea
The activities of reactive oxygen species scavenging enzymes, superoxide dismutases (SODs) and catalase (in cells of two
The toxic effects of 10 ppm paraquat in vivo on the enzymes superoxide dismutase (SOD), catalase (C), peroxidase (P), glu
The effect of paraquat on the activities of antioxidant defense and detoxifying enzymes of the white-rot fungus Funalia tr
Cadmium (Cd) is one of the most toxic heavy metals and inhibits physiological processes of plants. Magnesium (Mg) is kn
Changes in composition of the principal low molecular mass thiols of Leishmania donovani were monitored during the tr
S. cerevisiae strain delta sodl lacking Cu,Zn-superoxide dismutase and delta sodl delta sod2 mutant lacking both Cu,Zn-SO
The liver alpha-tocopherol level of the paraquat fed mice group was lower than that of the control diet-fed group. An exc
Superoxide dismutase (SOD) is known to protect organisms from reactive oxygen metabolites. We tested the hypothesis
A major obstacle to successful cancer chemotherapy is the development of multidrug resistance (MDR). The previous stu
DNA protective and antioxidant activity of Bacillus amyloliquefaciens B-1895 and Bacillus subtilis KATMIRA1933 were eva
Flavonoids are a group of polyphenol compounds with known antioxidant activities. Among them, dihydrochalcones are
In photosynthetic tissues superoxide dismutase (SOD) plays an important role by scavenging the superoxide radical whos
Resistance to the toxic effects of reactive oxygen species produced by phagocytes and production of hydrolytic enzymes
Superoxide dismutases (SODs) are metalloproteins that catalyze the dismutation of superoxide radicals to hydrogen perc
In plants, Glc-6-phosphate dehydrogenase (G6PDH) isoenzymes are present in the cytosol and in plastids. The plastidic e

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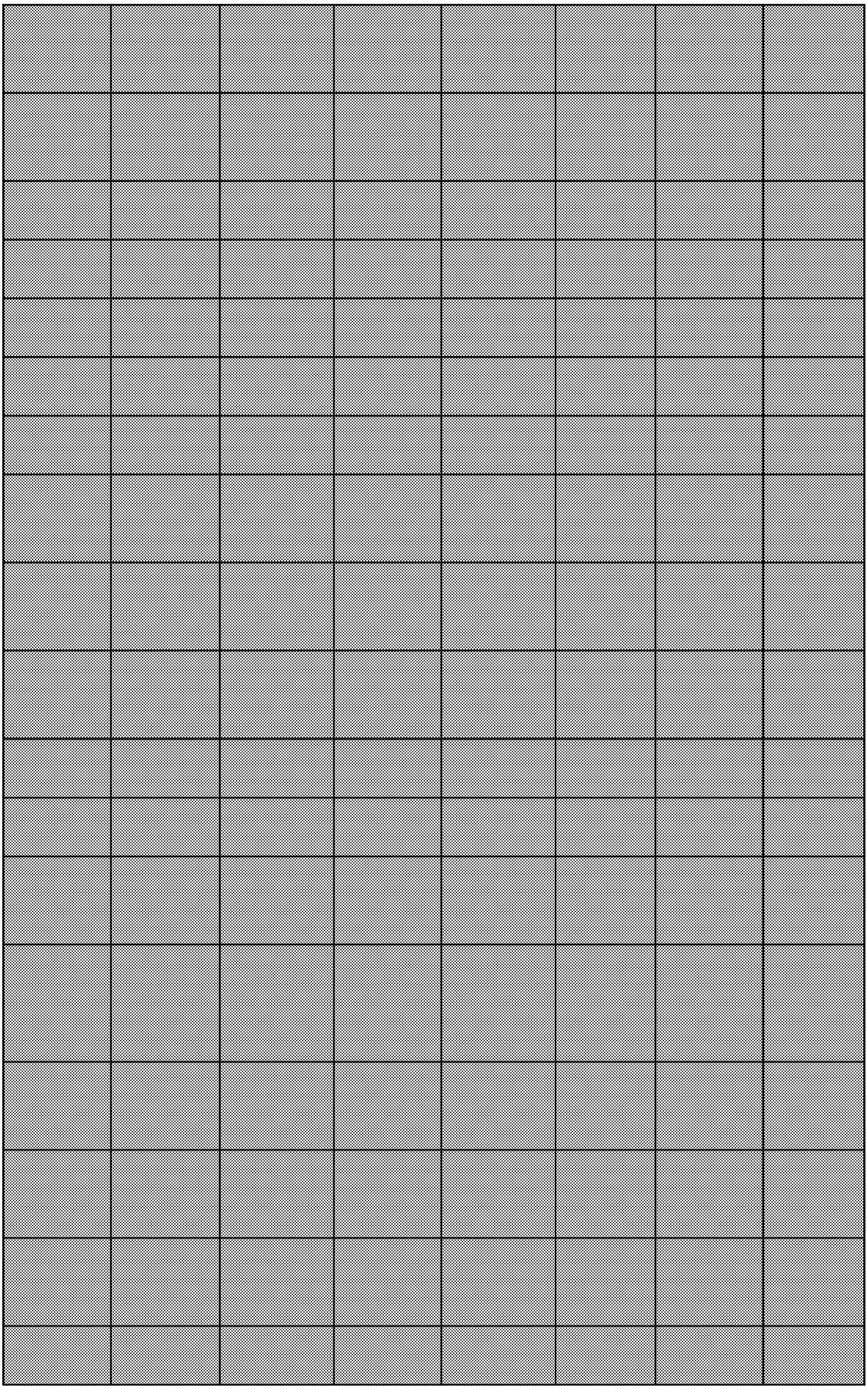

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Reactive oxygen species (ROS) cause macromolecular damage and may play an important role in tumor development. Su
Streptomyces coelicolor contains two distinct superoxide dismutase (SOD) activities detected on native PAGE. The level c
Chloroplasts of Nicotiana tabacum have two superoxide dismutases: a Fe- and a CuZn-containing enzyme, encoded by th
Paraquat is still a widely used herbicide in several countries. Its toxic action on plants occurs through a one-electron redu
We compared antioxidant responses and regulation of porphyrin metabolism in rice plants treated with oxyfluorfen (OF)
Paraquat-resistant hairy fleabane (Conyza bonariensis L. Cronq.) has been extensively studied, with some contention. A s
The ability of the natural antioxidant alpha-tocopherol to protect against oxidative stress in vitro was assessed. Primary c
Cytochrome P4502E1 (CYP2E1), glutathione-S-transferase A4-4 (GSTA4-4), and inducible nitric oxide synthase (iNOS) are
Antioxidant effects of extracts from Croton cajucara BENTH. leaves was investigated in different in vitro and in vivo mode
The signal interactions between calcium (Ca2+) and reactive oxygen species (ROS) originated from plasma membrane NA
The effect of glutathione on stimulation of pentose phosphate cycle activity during oxidative challenge was evaluated in
Recent studies in Saccharomyces cerevisiae suggest that the delivery of copper to Cu/Zn superoxide dismutase (SOD1) is
The 8-oxodG content has been measured in chromosomal DNA of gilthead seabream (Sparus aurata) by HPLC-EC. Suscep
Yeast cells exposed to adverse conditions employ a number of defense mechanisms in order to respond effectively to the
Methyl viologen (MV) causes severe oxidative stress by generating superoxide in the photosystem. The marine Chlamyd

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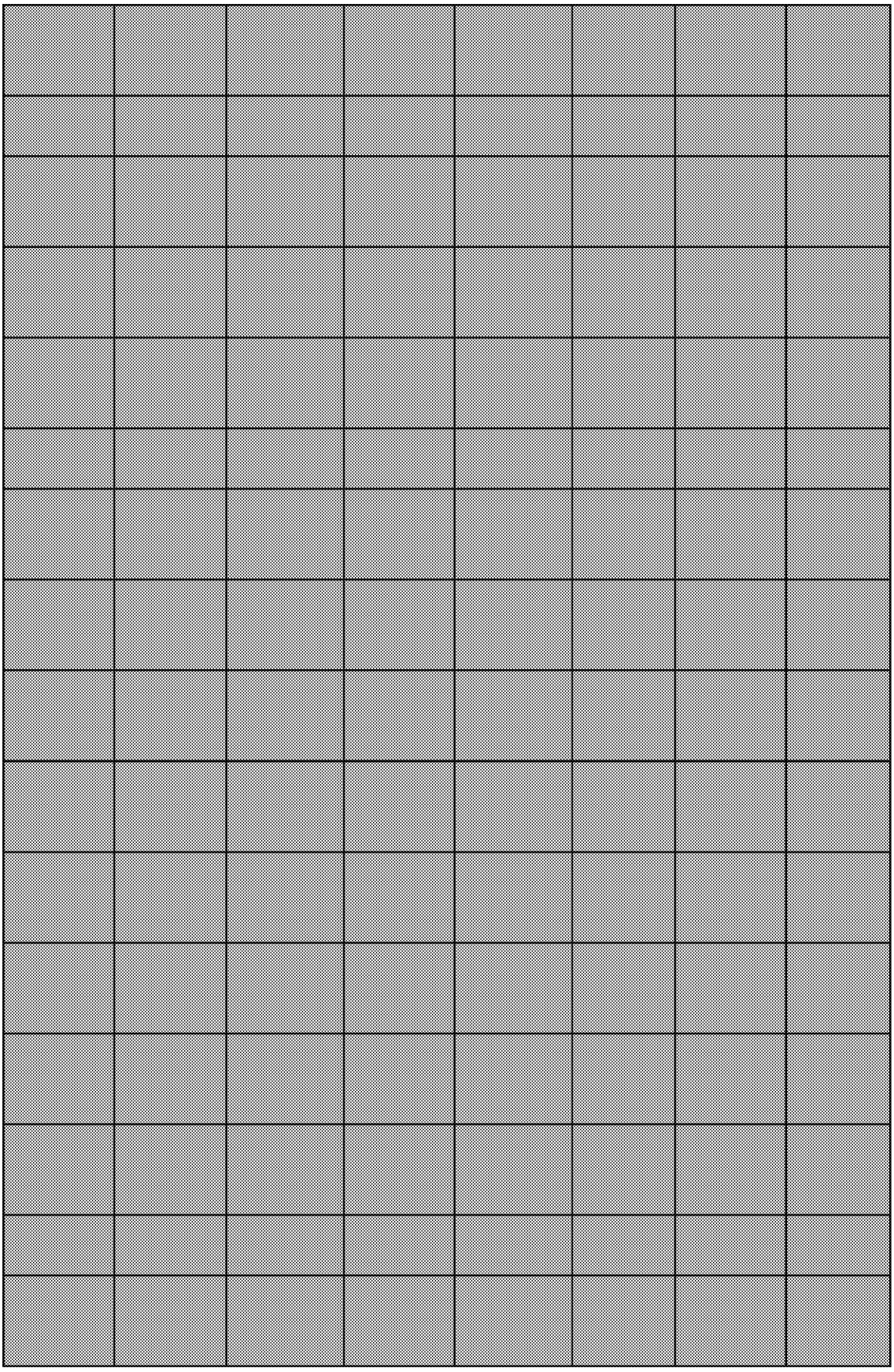

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Paraquat-induced nephrotoxicity involves severe renal cell damage caused by reactive oxygen species (ROS), specifically
The enzymatic defence system in the 2 yeasts Kluyveromyces marxianus and Rhodotorula glutinis, differing in their mode
Biochemical responses on the bases of activities of antioxidant enzymes; peroxidase, catalase, superoxide dismutase and
A comparative study has been performed on populations of Unionidae from the Lake Suszek and Brda river situated in th
Rat liver mitochondria are much more susceptible to protein oxidation induced by paraquat than plant mitochondria. The
The effects of the herbicides 1,1'-dimethyl-4,4'-bipyridylium dichloride (paraquat), 3,6-dichloro-2-metoxybenzoic acid (di
Transgenic mice overexpressing both Cu/ZnSOD and catalase [Tg(SOD1/CAT) +/o] were used to evaluate the effects of ov
Copper/zinc superoxide dismutase was cloned from the zebrafish (Danio rerio). The full coding region of the zebrafish su
The titration of increasing equivalents of inorganic sulfide into preformed Zn-glutathione led to the appearance of UV/VI
The herbicide paraquat (PQ) forms reactive oxygen species during enzymatic activation. We examined the effect of PQ on
Prolonged exposure to hyperoxia represents a serious danger to cells, yet little is known about the specific cellular factor
The role of catalase in the antioxidant defense system was studied using transgenic mice [Tg(CAT)] harboring a human ge
Hydrogen peroxide (H2O2) has been implicated in many stress conditions. Control of H2O2 levels is complex and dissecti
Methanosarcina barkeri is a strictly anaerobic methanogenic archaeon, which can survive oxidative stress. The oxidative
Carbonyl reductase (CBR) is an enzyme involved in protection from oxidative stress. In rainbow trout (Oncorhynchus myk
Mutations in the DJ-1 gene have been shown to cause a rare autosomal-recessive genetic form of Parkinson's disease (PD
Can the superoxide radical exert deleterious effects independent of participating with H2O2 in the production of the hyd
A novel selenium form, nano red elemental selenium (Nano-Se) was prepared by adding bovine serum albumin to the re
Enzymes and metabolites associated with mitigation of paraquat toxicity were compared in two paraquat-tolerant mutan

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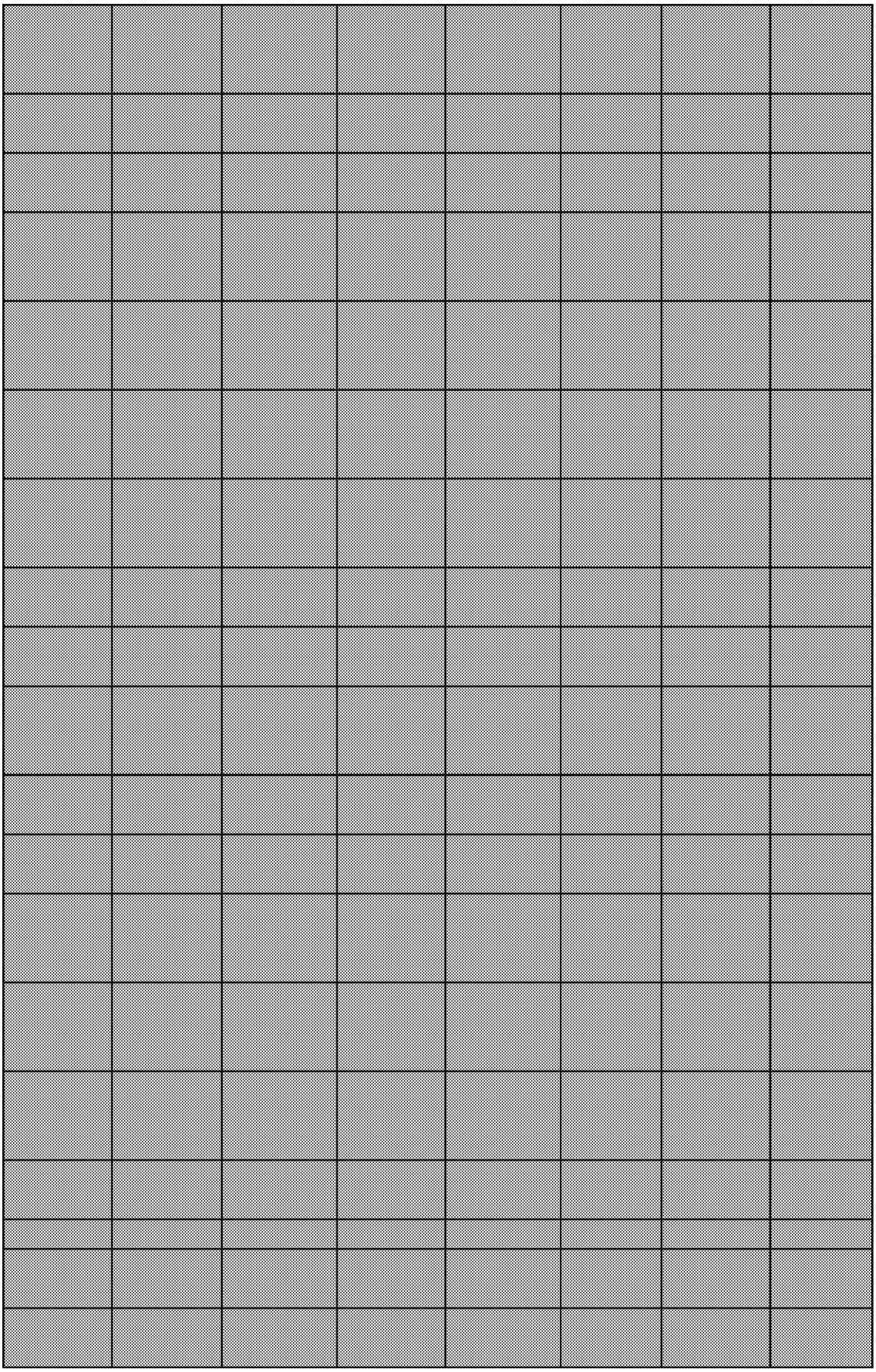

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Gilthead seabream (Sparus aurata) specimens were caged in-field at the Teboulba harbour or exposed to benzo(a)pyrene
Dissolved organic matter from natural sources (DNOM) is omnipresent in aquatic ecosystems. Besides affecting bioavaila
The binding of fluorodifen, fenarimol, acifluorfen, 2,4-DES, methyl parathion, paraquat and pyrazophos by alpha, mu and
Regulation of the biliary excretion of reduced glutathione (GSH) and glutathione disulfide (GSSG) and responses to select
As obligate blood-sucking ectoparasites, to avoid tissue damage, ticks must neutralize the reactive oxygen species (ROS)
The purpose of this study was to examine the possibility of using Artemia salina as a test organism in the search for comp
A new chloroplastic Cu/Zn-superoxide dismutase (SOD) isoenzyme was identified in Arabidopsis thaliana ecotype Cvi. Ge
Reports on stress response of tobacco expressing a bacterial glutathione reductase (GR) do not agree. To clarify this situa
Ascorbate is the most abundant small molecule antioxidant in plants and is proposed to function, along with other memb
A cotton (Gossypium hirsutum L.) control and NaCl-tolerant cell line (cv Coker 312) were grown on media with or withou
Lead (Pb) and paraquat (PQ) have different toxic mechanisms associated with cell damage. Pb may induce alterations in
Contaminant-related changes in antioxidative processes in the freshwater crustacea Daphnia magna exposed to model r
Today, the information from model species that differ in their resistance to oxidative stress and the determination of suit
Psychollatine is a monoterpene indole alkaloid produced and accumulated by Psychotria umbellata Vell. (Rubiaceae) leav
The antioxidant hesperidin, a major flavonoid in sweet orange and lemon, was evaluated using chemical and biological sy
Much has been published on the non-enzymatic antioxidant L-ascorbic acid (vitamin C), but even so its interaction with e
Paraquat, a widely used herbicide, has been reported to be capable of producing superoxide. In the present paper, there

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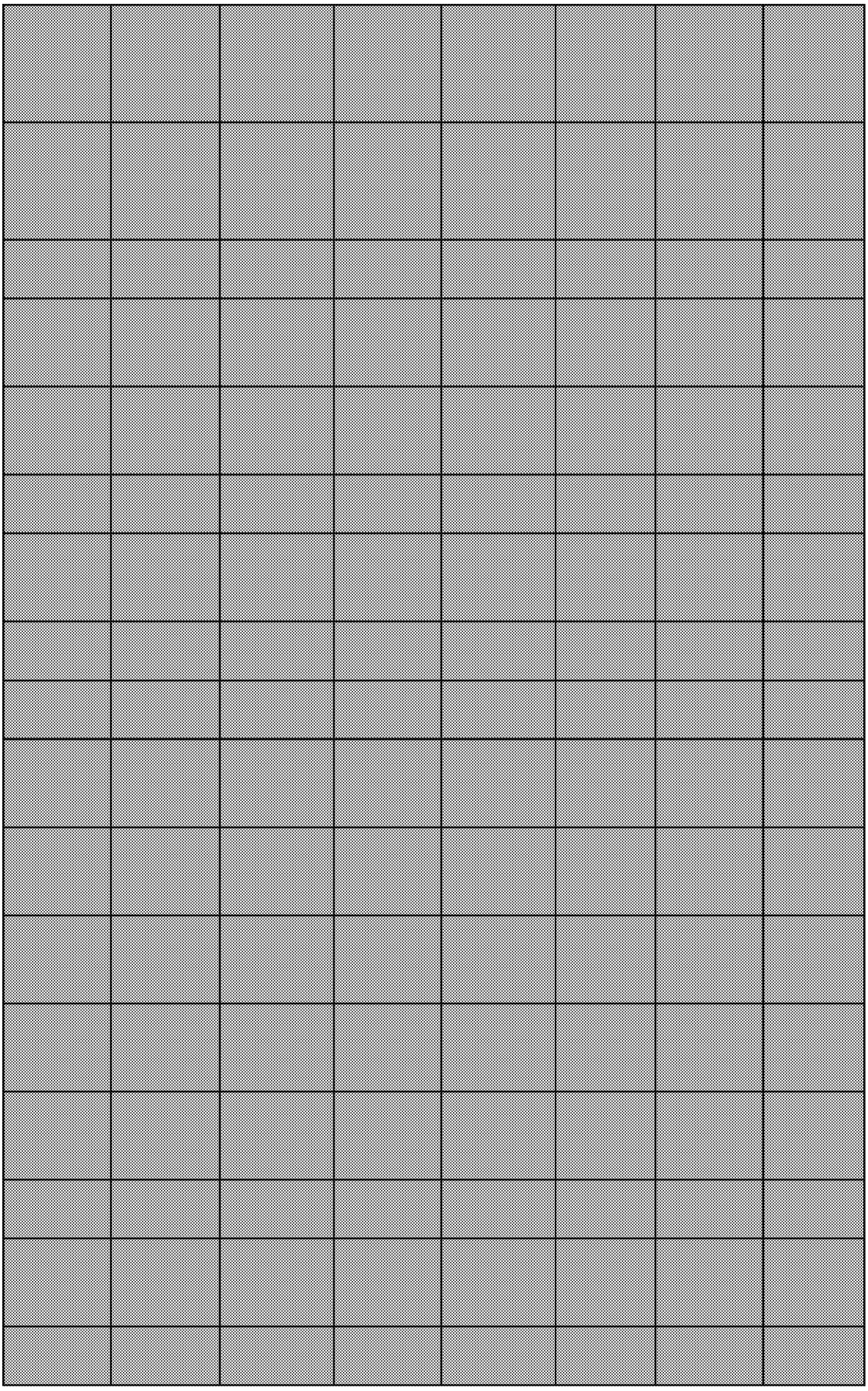

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Five newly functionalized pentaazamacrocyclic manganese complexes, with variable lengths and amounts of the aliphati
Amphiphilic 3-(alkanoylamino)propyldimethylamine-N-oxides with different length of the alkyl chain, i.e. different hydro
The effect of herbicide paraquat has been assessed on CHO-K1 cultures at different concentrations. Glutathione peroxida
The sequential changes of the activity of peroxide metabolism enzymes and thiobarbituric acid reaction substance (TBAR
Hydrogen gas (H(2)) induces plant tolerance to several abiotic stresses, including salinity and paraquat exposure. Howeve
Several enzymes, including superoxide dismutase (SOD), catalase, glutathione peroxidase, and D-glucose-6-phosphate de
All members of R. glutinosa show the unique characteristic of intrinsic tolerance to paraquat (PQ). Antioxidant enzymes h
"Oxidative stress" takes place in animal tissues when the balance between the cellular defense mechanisms (glutathione
Cn (calcineurin) activity is stabilized by SOD1 (Cu-Zn superoxide dismutase), a phenomenon attributed to protection from
The histochemical and cytochemical localization of abscisic acid (ABA)-induced H(2)O(2) production in leaves of maize (Ze
Antioxidant enzymes, such as superoxide dismutase (SOD) and catalase (CAT), have been considered to have a beneficial
To demonstrate the superoxide radical (.O(2)(-)) -scavenging activity of 2-mercaptoethylamine (MEA), we investigated th
Aerobic microorganisms have evolved different strategies to withstand environmental oxidative stresses generated by va
Polyamines participate in numerous cellular processes and are required for normal cell growth in Escherichia coli. In this
In etiolated seedlings, light perceived by phytochrome promotes the expression of light-harvesting chlorophyll a/b prote
Borrelia burgdorferi, the causative agent of Lyme disease, alters its gene expression in response to environmental signals

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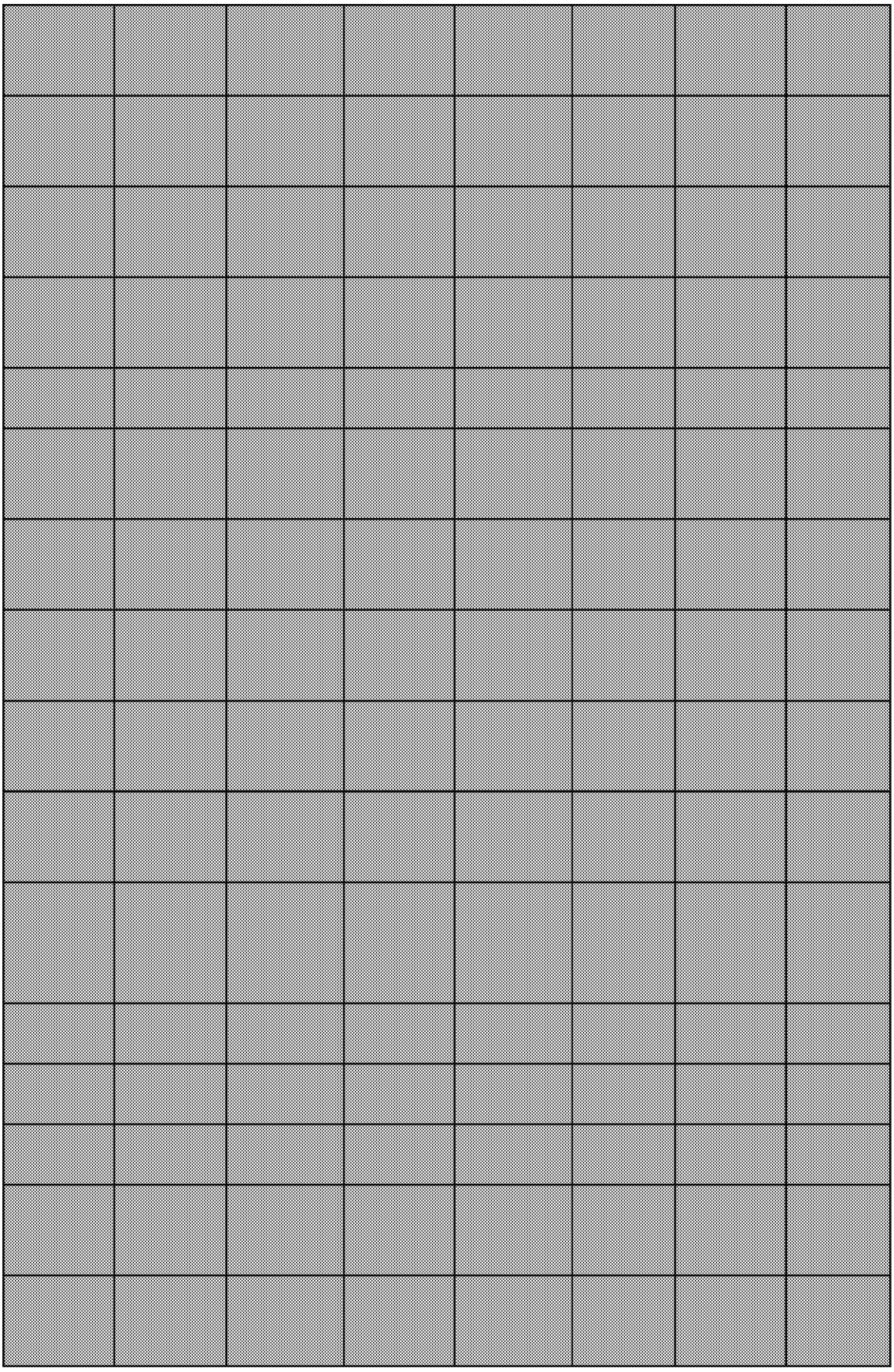

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Most studies using real-time PCR are taken semiquantitatively and assume a steady level of expression forthe so-called h
We evaluated whether quantitation of mRNA molecules of key genes is a reliable biomonitoring end-point. We examine
Changes in gene expression, by application of H2O2, O2.- generating agents (methyl viologen, digitonin) and gamma irra
In animals, aconitase is a bifunctional protein. When an iron-sulfur cluster is present in its catalytic center, aconitase disp
Global transcription studies have identified a large number of redox-responsive genes, although the biological relevance
Growth restriction by antibiotics is a common feature that pathogenic bacteria must overcome for survival. The struggle
Exposure of Escherichia coli to superoxide-generating drugs, such as menadione or paraquat, uniquely induces approxim
The SoxR protein of Escherichia coli responds to redox signals by activating the transcription of soxS, which encodes anot
Amphibacillus xylanus grows at the same rate and with the same cell yield under aerobic and anaerobic conditions. Unde
In many bacteria, the second messenger cyclic AMP (cAMP) interacts with the transcription factor cAMP receptor protein
Survival in aerobic conditions is critical to the pathogenicity of many bacteria. To investigate the means of aerotolerance
To investigate the transcriptional response to oxidative stress in the heart and how it changes with age, we examined the
Pseudomonas aeruginosa and the phytopathogen P. syringae produce the exopolysaccharide alginate, which is a copolyn
Sequencing of the yeast gene that complemented the sensitivity to the photoactivated monofunctional 3-carbethoxypso
Heterologous expression of a putative manganese superoxide dismutase gene (SOD2) of the basidiomycete Moniliophth
Anaerobically grown Escherichia coli accumulate active manganese-containing superoxide dismutase (MnSOD) upon exp
Escherichia coli growing anaerobically respond to NO3- with a approximately 3-fold induction of active FeSOD and a appr
Transcriptional co-activators of the multiprotein bridging factor 1 (MBF1) type belong to a small multigenic family that co

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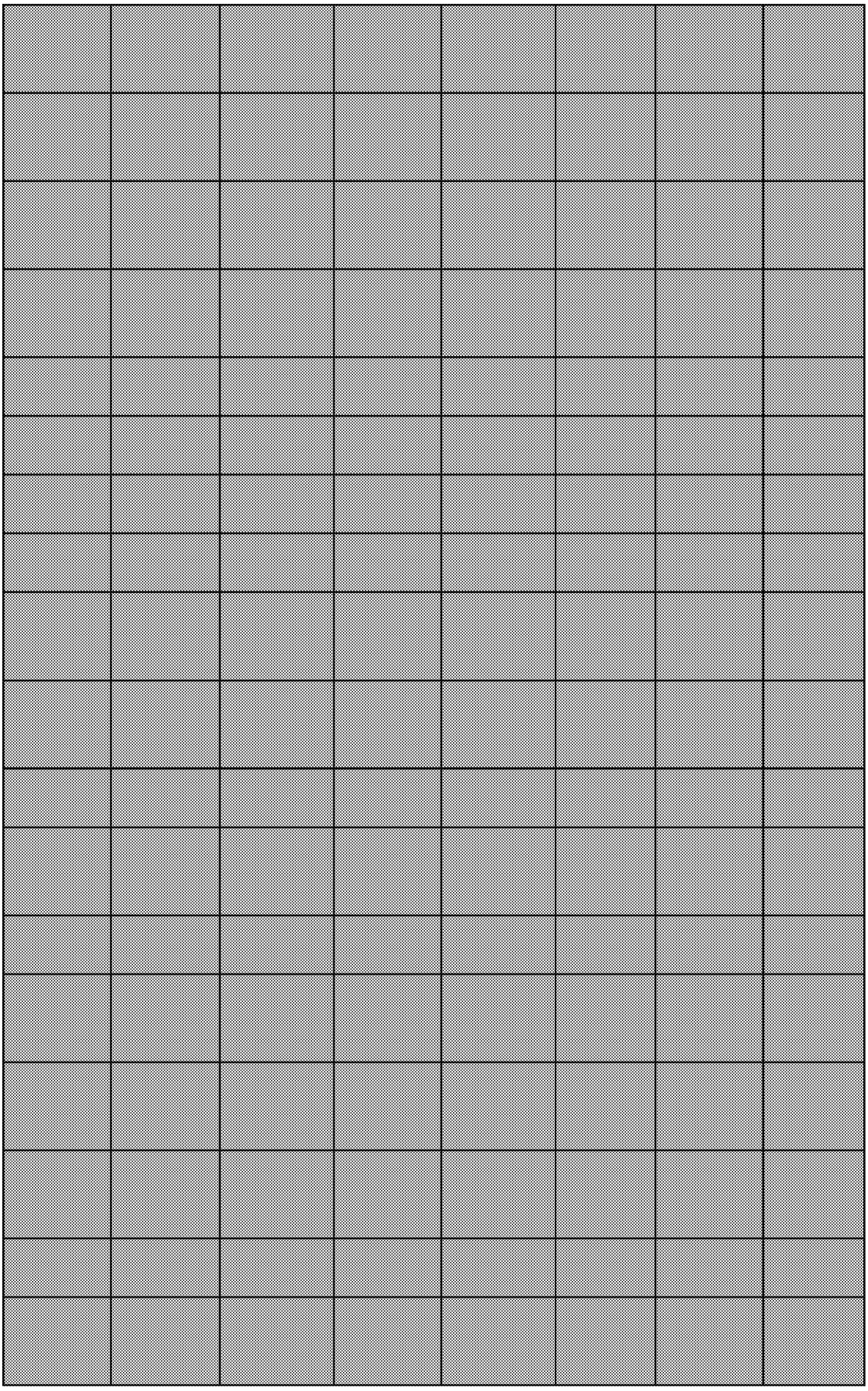

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Alginate overproducition by mucoid Pseudomonas aeruginosa is a critical pathogenic determinant expressed by this orga
The carcinogen aniline is negative in the Ames Salmonella mutagenicity assay. Aniline does, however, induce intrachrom
Wheat, which is the most important food crop worldwide, is a cereal that presents considerable potential for increased y
The redox status of cells is involved in the regulation of several cellular stress-response pathways. It is frequently altered
The fungal AAL-toxin triggers programmed cell death (PCD) through perturbations of sphingolipid metabolism in AAL-tox
Expression of the Arabidopsis glutathione S-transferase (GST) gene AtGSTF2 is induced by several stimuli, but the functio
Here we identify the BAP1 and BAP2 genes of Arabidopsis (Arabidopsis thaliana) as general inhibitors of programmed ce
Metabolism of S-nitrosoglutathione (GSNO), a major biologically active nitric oxide (NO) species, is catalyzed by the evolu
The Arabidopsis radical-induced cell death1 (rcd1) mutant is sensitive to ozone fumigation and apoplastic superoxide, bu
To isolate new plant genes involved in the defense against oxidative stress, an Arabidopsis cDNA library in a yeast expres
Transcriptional regulators of the AraC/XylS family have been associated with multidrug resistance, organic solvent tolera
The activation sequence-1 (as-1)-like element found in the promoter of some glutathione S-transferase (GST) genes, has
A two-dimensional thin-layer chromatographic analysis of [14C]-labelled metabolites in Escherichia coli was employed to
Carbonylated proteins were visualized in single cells of the budding yeast Saccharomyces cerevisiae, revealing that they
Mtm1p is essential for the posttranslational activation of manganese-containing superoxide dismutase (SOD2) in Sacchar
Cellular DNA, RNA and their precursor nucleotides are at high risk of being oxidized by reactive oxygen species. An oxidiz
Mutation in the wound-induced peptide transporter gene AtPTR3 (At5g46050) of Arabidopsis thaliana has been shown to
In aerobic organisms, protection against oxidative damage involves the combined action of highly specialized antioxidant

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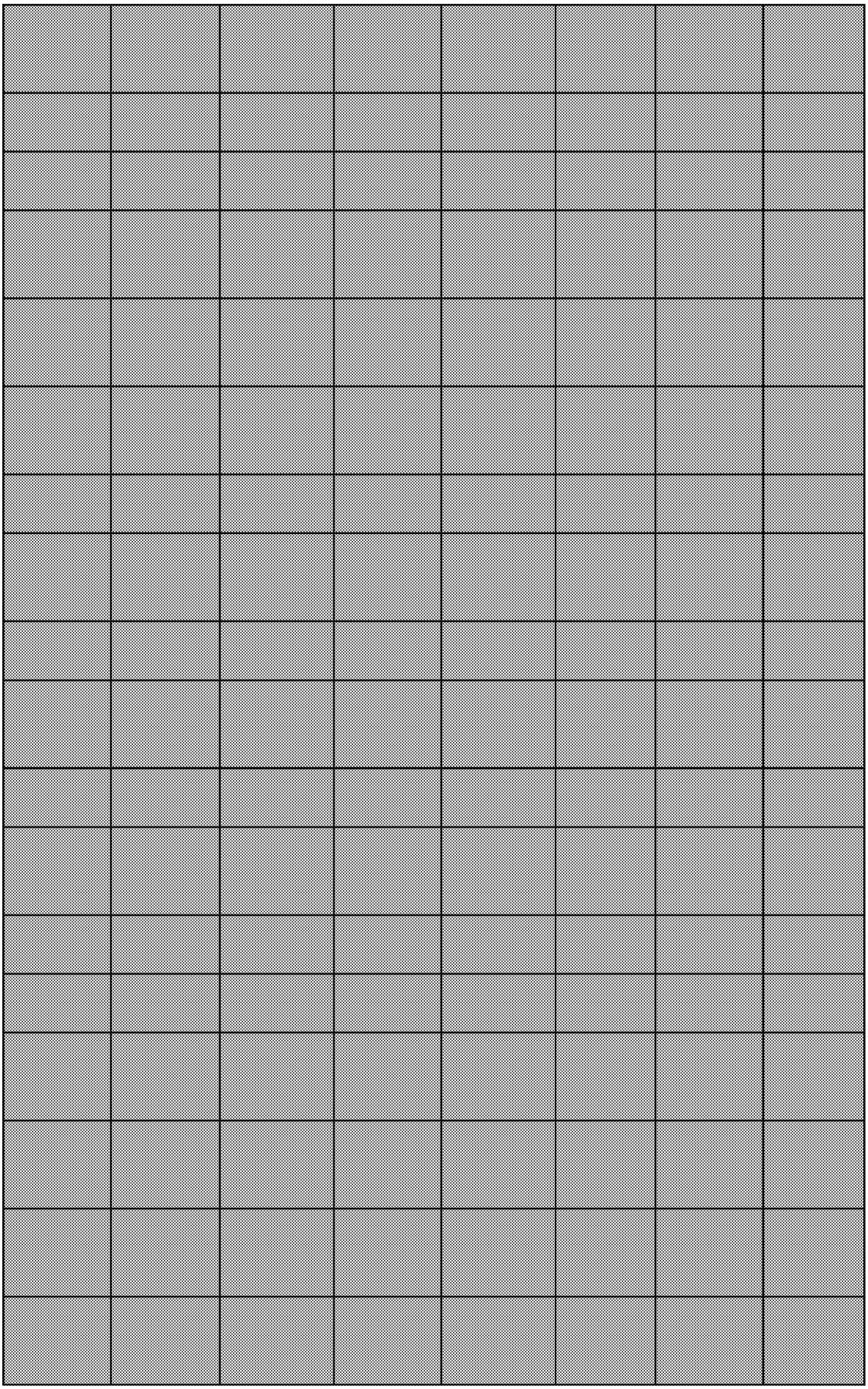

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The analysis of an A. brasilense Tn5 mutant shows significant phenotypic differences compared to the wild type isogenic
The ability of selected bacterial cultures to synthesize ethylene during growth in nutrient broth supplemented with meth
8-oxoguanine (8-oxo-7,8-dihydroguanine) is generated in the cellular nucleotide pool as well as in nucleic acids, by the ac
A Cu,Zn superoxide dismutase (SOD1) gene was cloned from the bumblebee, Bombus ignitus. The SOD1 gene of B. ignitu
Mutations of the breast cancer susceptibility gene 1 (BRCA1), a tumor suppressor, confer an increased risk for breast, ova
Breaking of hyphae derived from growth of the phytopathogenic fungus Crinipellis perniciosa in liquid media yielded cell
BspA is a basic surface-exposed protein from Lactobacillus fermentum BR11. Sequence comparisons have shown that it i
Burkholderia cenocepacia is a gram-negative opportunistic pathogen that belongs to the Burkholderia cepacia complex.
Burkholderia pseudomallei (Bp) is the causative agent of the life-threatening melioidosis in humans. The global transcrip
DNA mismatch repair (MMR) of simple base mismatches and small insertion-deletion loops in eukaryotes is initiated by t
A Caulobacter crescentus rho::Tn5 mutant strain presenting a partially functional transcription termination factor Rho is
The triple A syndrome is a rare autosomal recessive disease caused by mutations in the AAAS gene, which encodes the n
Superoxide dismutase (SOD, EC 1.15.1.1) is an enzyme involved in the scavenging of reactive oxygen species (ROS) into m
We characterized thioredoxin reductase 1 (TrxR1) from Chironomus riparius (CrTrxR1) and studied its expression under c
To gain further insights into the mechanisms of redox homeostasis in arbuscular mycorrhizal fungi, we characterized a Gl
The Fur protein is the main sensor of cellular iron status in bacteria. In the present study, we inactivated the fur gene of F
Cytochrome P450 monooxygenases (P450), widely distributed multifunctional enzymes, that play an important role in th

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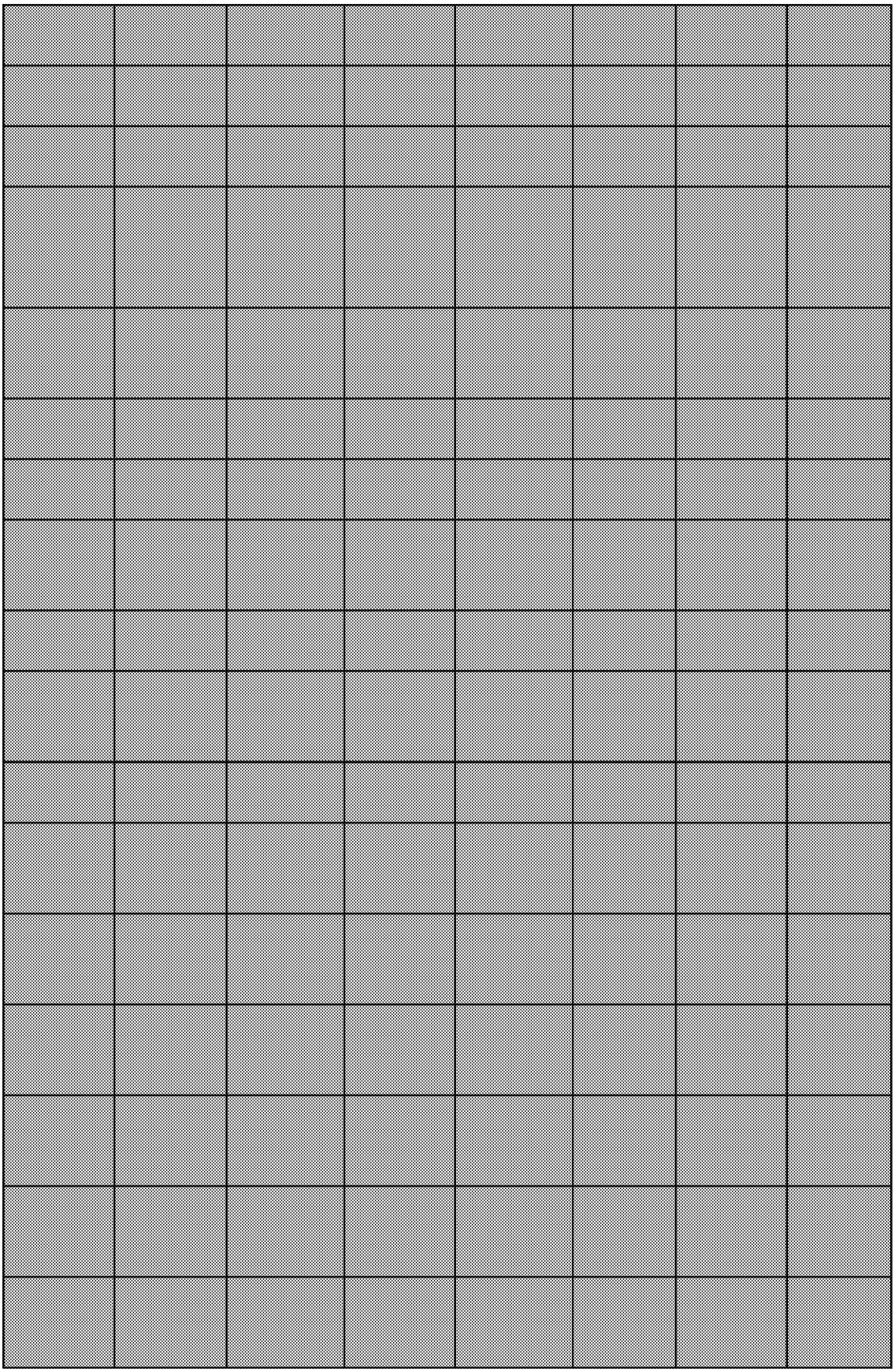

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The ferredoxin/thioredoxin reductase (FTR) is the key enzyme of a light dependent redox regulatory system controlling e
During industrial processes, the dairy organism Streptococcus thermophilus is exposed to stress conditions. Its ability to s
Ubiquinol (QH2) is a lipid-soluble molecule that participates in cellular redox reactions. Previous studies have shown that
Burkholderia cenocepacia is a gram-negative, non-spore-forming bacillus and a member of the Burkholderia cepacia com
The importance of mitochondrial iron-sulfur cluster (ISC) biogenesis for human health has been well established, but the
A Staphylococcus aureus mutant (SPW1) which is unable to survive long-term starvation was shown to have a transposon
We have developed a generalized profile that identifies members of the root-nodulation-cell-division (RND) family of eff
Sequences encoding three copper-zinc superoxide dismutase (CuZnSOD) mutant proteins analogous to those coded for in
A 977 bp cDNA containing an open reading frame encoding 224 amino acid residues of manganese superoxide dismutase
The high toxicity of reactive oxygen species (ROS) suggested a possible role in the pathogenicity of human pathogenic fun
Nine mutants isolated from CHO.K1 cells with increased sensitivity to the lethal effect of plumbagin (PG), a powerful sup
The Mn superoxide dismutase gene of Escherichia coli was subcloned into the E. coli-Anacystis nidulans shuttle vector pS
Superoxide dismutase (SOD) is considered to be the first line of defense against oxygen toxicity. It exists as a family of thr
An Arabidopsis 14-3-3 protein, AFT1, was used as a 'bait' in the two-hybrid system to identify its interacting proteins. One
Aspergillus fumigatus possesses a branched mitochondrial electron transport chain, with both cyanide-sensitive and -inse
Human metallothionein (hMT) is highly overexpressed in the resistant AML-2 cell line selected by paraquat, an intracellu
Superoxide radical (O2*-) is a toxic byproduct of oxidative metabolism that extensively damages cellular macromolecules

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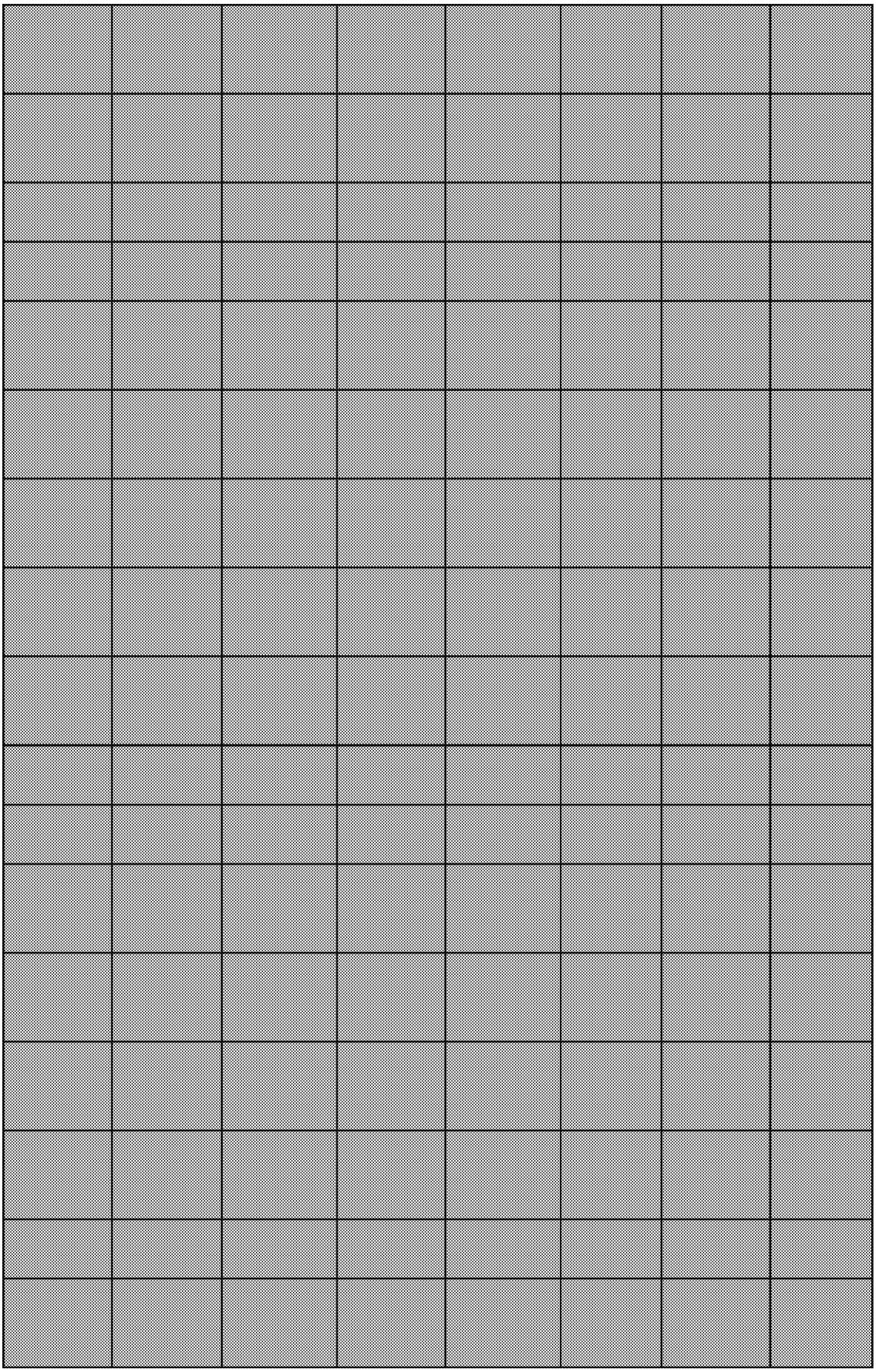

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The sodA gene encoding the Corynebacterium melassecola manganese-cofactored superoxide dismutase (SOD) has beer
We have isolated and characterized two superoxide dismutase (SOD) cDNAs from a Leishmania chagasi promastigote cDI
Reactive oxygen species (ROS) are generated during normal aerobic metabolism and in plants exposed to environmental
Two genes encoding manganese superoxide dismutase (sod-2 and sod-3) have been identified in the nematode Caenorh
BACKGROUND: Clostridium thermocellum is a promising consolidated bioprocessing candidate organism capable of direc
The defenses against free radical damage include specialized repair enzymes that correct oxidative damage in DNA and c
The endospore-forming Gram-positive pathogen Bacillus anthracis is responsible for the usually fatal disease, inhalationa
This study compared stress-induced expression of Cu-Zn superoxide dismutase (SOD1) and thioredoxin reductase (TrxR) g
In the mesophilic cyanobacterium Synechococcus elongatus PCC 7942, iron starvation induces the expression of a numbe
FlbA is a regulator of G-protein signaling protein that plays a central role in attenuating heterotrimeric G-protein mediate
Two highly similar cytosolic Cu/Zn Sod (Sod4 and Sod4A) genes have been isolated from maize. Sod4A contains eight exo
The promoter regions of five SoxRS regulon genes (sodA, fumC, zwf, acnA, and acrAB) and one SoxRS regulatory protein g
Legionella pneumophila expresses two catalase-peroxidase enzymes that exhibit strong peroxidatic but weak catalatic ac
The molecular mechanisms by which plants acclimate to oxidative stress are poorly understood. To identify the processe
Several cellular pathways have been identified which affect the efficiency of thiamine biosynthesis in Salmonella enterica
BACKGROUND: Staphylococcus epidermidis, long regarded as an innocuous commensal bacterium of the human skin, is t
The ferritin-encoding gene (cft) of Campylobacter jejuni was cloned and sequenced. The nucleotide sequence of cft had a

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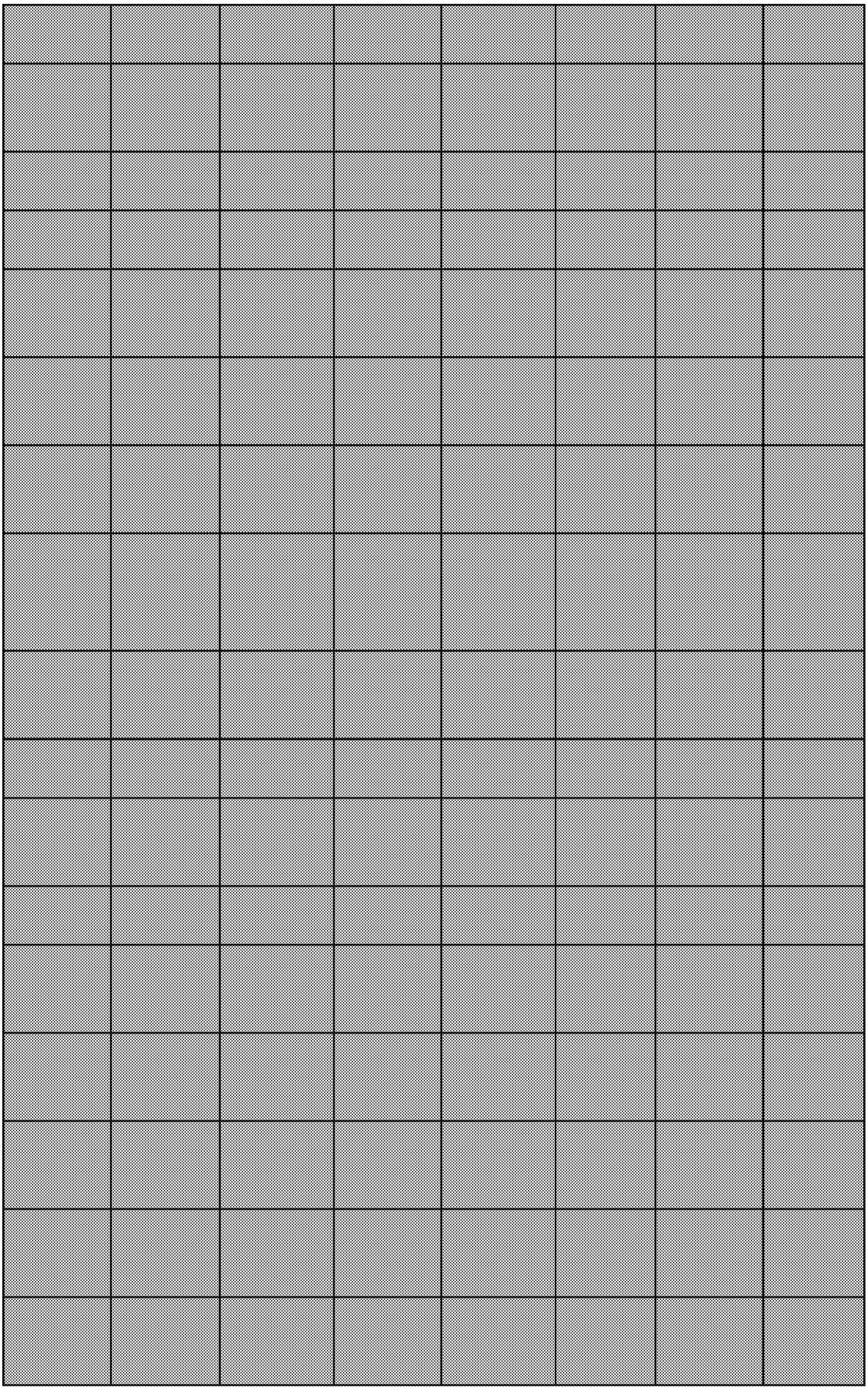

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A recombinant bioluminescent Escherichia coli strain, EBHJ, (sodA::luxCDABE), containing the promoter for the mangane
Superoxide dismutases convert superoxide anions to molecular oxygen and hydrogen peroxide, which, in turn, is metabo
An understanding of how the heme-deficient gram-positive bacterium Streptococcus pyogenes establishes infections in (
Peroxiredoxins, the enzymes that catalyze the reduction of hydrogen peroxide and organic hydroperoxides, are ubiquito
The roles of SitABCD, MntH, and FeoB metal transporters in the virulence of avian pathogenic Escherichia coli (APEC) O78
The general stress regulon of Bacillus subtilis comprises approximately 200 genes and is under the control of the alternat
Complexity of cellular response to oxidative stress (OS) stems from its wide-ranging damage to nucleic acids, proteins, ca
We have previously shown that the control of cellular copper homeostasis by the copper-modulated transcription factor
AIMS: To study the effects of adaptation and stress on the resistance to benzalkonium chloride (BC) and cross-resistance
Genome-wide screening for sensitivity to chronic endoplasmic reticulum (ER) stress induced by dithiothreitol and tunicar
A strain of Synechococcus sp. strain PCC 7942 with no functional Fe superoxide dismutase (SOD), designated sodB-, was c
The Escherichia coli soxRS regulon activates oxidative stress and antibiotic resistance genes in two transcriptional stages.
Caulobacter crescentus is a free-living alphaproteobacterium that has 11 predicted LysR-type transcriptional regulators (
BACKGROUND: Litchi is an evergreen woody tree widely cultivated in subtropical and tropical regions. Defective flowerin
Galectins are a family of beta-galactoside-binding lectins. They are involved in the regulation of a variety of biological ph
Aspergillus fumigatus is an important opportunistic fungal pathogen. The cAMP-dependent protein kinase (PKA) signalin
BACKGROUND: Campylobacter jejuni is a leading cause of bacterial enteritis worldwide. This microaerophilic bacterium c
BACKGROUND: Superoxide dismutases (SODs) cause dismutation of superoxide radicals to hydrogen peroxide and oxyge

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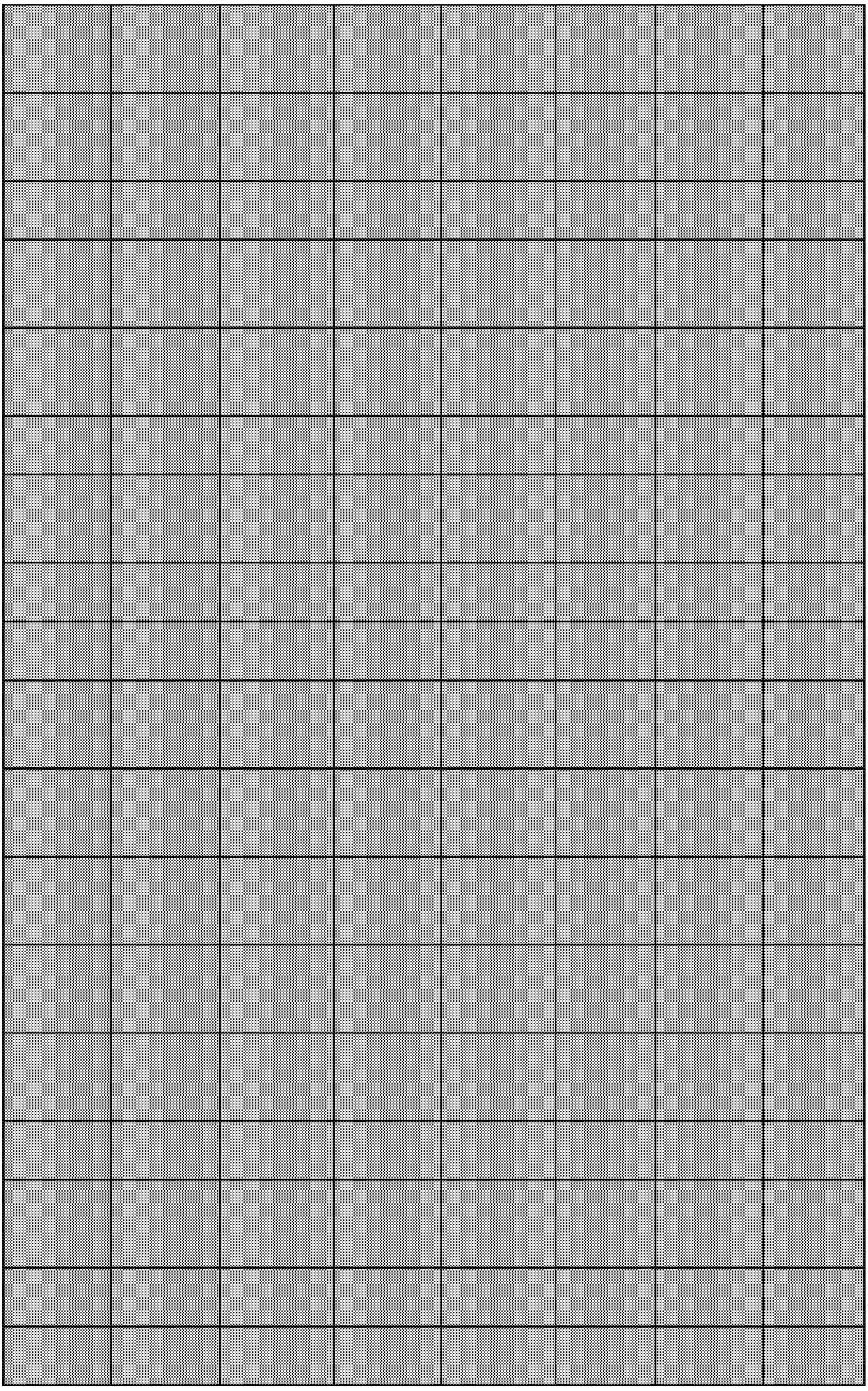

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Mutations in the CSA and CSB genes cause Cockayne syndrome, a rare inherited disorder characterized by UV sensitivity,
Glutaredoxins are glutathione-specific thiol oxidoreductases. The regulation and the role of grx1(+) and grx2(+) genes en
Copper chaperone (CCH) is upregulated during Arabidopsis (Arabidopsis thaliana L. Columbia) leaf senescence, suggestin
Members of heat shock proteins (Hsp70) family have been considered to respond to a large variety of stressful condition
We have previously characterized a pathogen-induced gene from wheat (Triticum aestivum L.) that was named GstA1 ba
BACKGROUND: Previously we have identified a distal region of the rainbow trout (Oncorhynchus mykiss) metallothionein
Dihydroxy-acid dehydratase (DHAD) has a [4Fe-4S] cluster and is reported to be facilely inactivated by oxidant stress. To
Responses to many growth and stress conditions are assumed to act via changes to the cellular redox status. However, di
The SoxRS regulon is induced when bacterial cells are exposed to redox-cycling agents such as menadione or paraquat. In
In Azotobacter vinelandii, the E1 component of pyruvate dehydrogenase complex (PDHE1) is proposed to be a key regula
Two regulons, soxRS and marRAB, are associated with resistance to quinolones or multiple antibiotic in Salmonella enter
Elongator is a histone acetyl-transferase complex consisting of six subunits, and is highly conserved in eukaryotic organis
In this report we describe the functional expression of EmrE, a 110-amino-acid multidrug transporter from Escherichia co
The addition of paraquat (methyl viologen) to a growing culture of Escherichia coli K-12 led within 1 hr to a 10- to 20-fold
Campylobacter jejuni is responsible for the major foodborne bacterial enteritis in humans. In contradiction with its fastid
Microorganisms produce siderophores to facilitate iron uptake and even though this trait has been extensively studied, t
An Arabidopsis thaliana mutant, esa1, that shows enhanced susceptibility to the necrotrophic pathogens Alternaria brass

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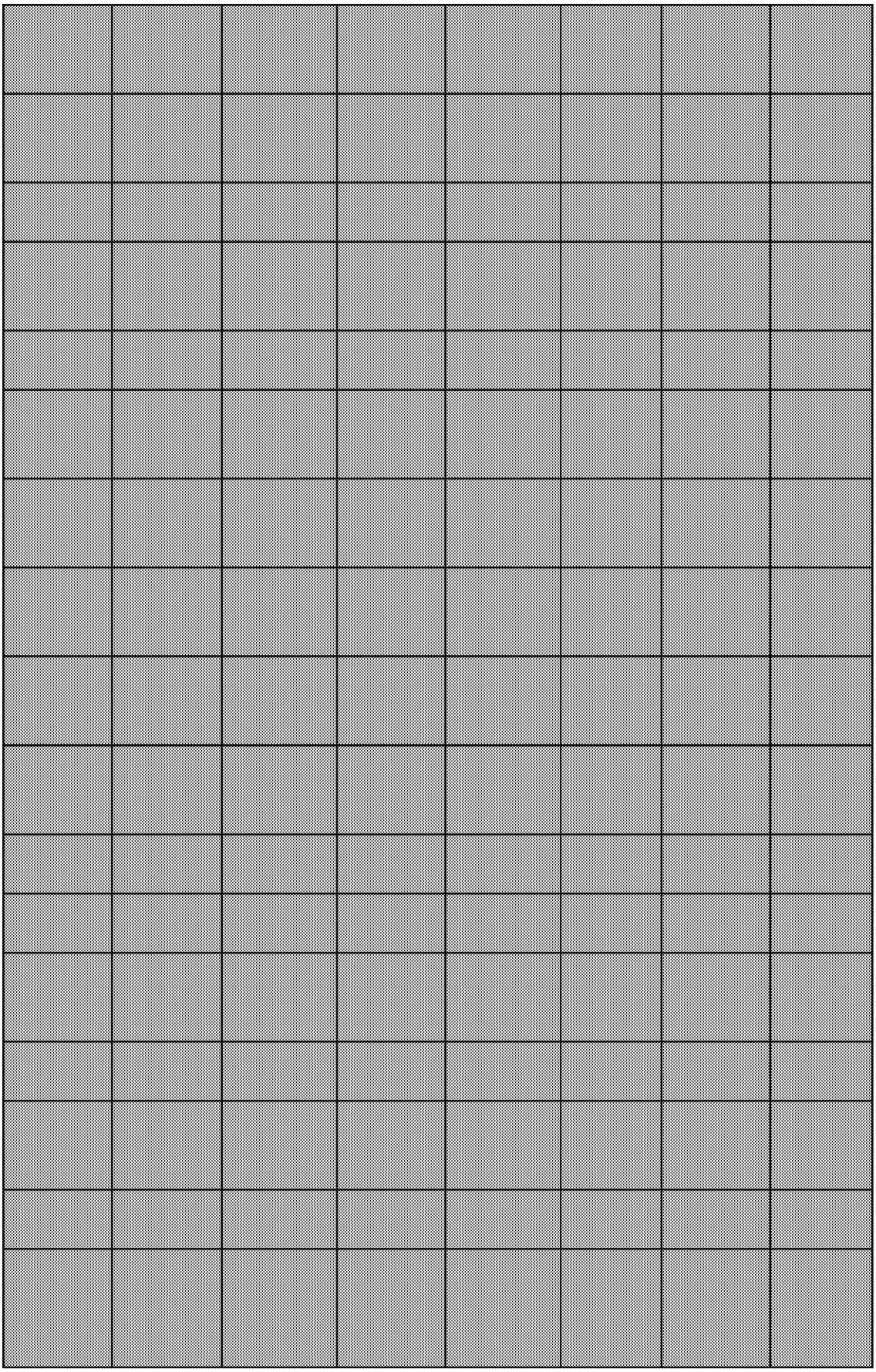

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Escherichia coli possesses two aconitases, a stationary-phase enzyme (AcnA), which is induced by iron and oxidative stre
The serine protease HtrA (DegP), which is indispensable for cell survival at elevated temperatures, is a peripheral membr
A gene encoding a fusion protein consisting of Escherichia coli iron superoxide dismutase (FeSOD) with the mitochondria
Two-dimensional gel analyses were made of proteins synthesized in Escherichia coli during various O2- -generating cond
E. coli YdbK is predicted to be a pyruvate:flavodoxin oxidoreductase (PFOR). However, enzymatic activity and the regulat
Evidence that Escherichia coli YqhD is involved in bacterial response to compounds that generate membrane lipid peroxi
The reactivity of the essential element iron necessitates a concerted expression of ferritins, which mediate iron storage i
Synechocystis sp. PCC 6803 possesses only one sod gene, sodB, encoding iron superoxide dismutase (FeSOD). It could no
Among bacteria, Escherichia coli are unique because they contain an amount of glutathione (GSH) comparable to that of
In response to the oxidative stress imposed by redox-cycling compounds like paraquat, Escherichia coli induces the synth
DgcZ is the main cyclic dimeric GMP (c-di-GMP)-producing diguanylate cyclase (DGC) controlling biosynthesis of the exop
The gene encoding the manganese-containing superoxide dismutase (SOD) of Halobacterium cutirubrum was isolated an
BACKGROUND: Expansion of transcription factors is believed to have played a crucial role in evolution of all organisms by
The ferredoxin-NADP+ reductase (fpr) participates in cellular defense against oxidative damage. The fpr expression in Ps
A superoxide dismutase (SOD) gene from Burkholderia pseudomallei, the causative agent of melioidosis, was cloned and

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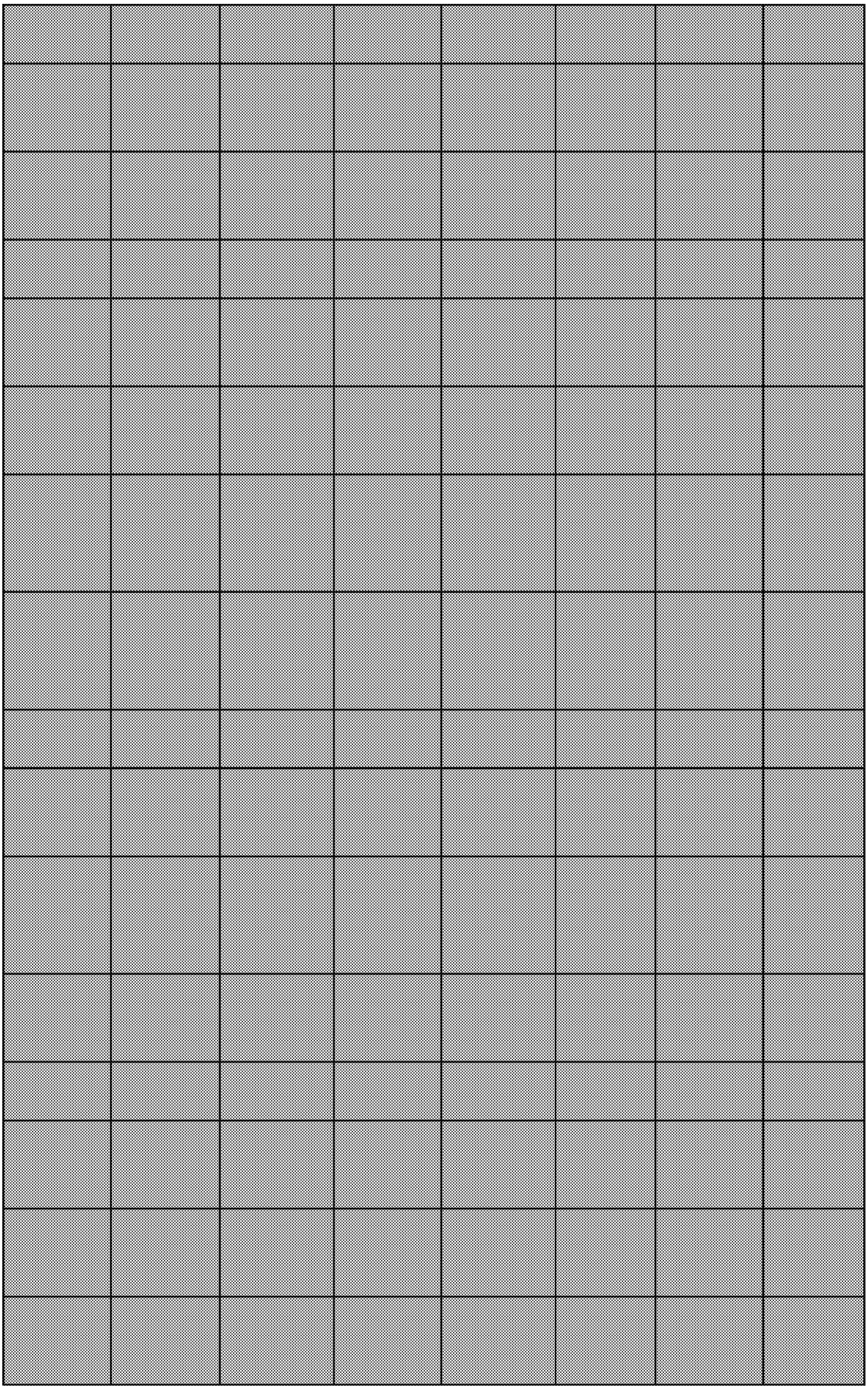

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A new superoxide dismutase (SOD) gene from the thermophilic fungus Chaetomium thermophilum (Ctsod) was cloned a
Antioxidant enzymes play important roles in the protection against oxidative damage caused by environmental pollutant
The gene for the Cu, Zn-superoxide dismutase (SOD) from the yeast Saccharomyces cerevisiae was cloned, characterized,
Little is known about the molecular basis of biofilm formation in Listeria monocytogenes. The superoxide dismutase (SOD
Superoxide dismutases (SOD) are ubiquitous in aerobic organisms and are believed to play a significant role in protecting
Burn wounds are prone to infection by Pseudomonas aeruginosa, which is an opportunistic pathogen causing various hur
Expression of the thioredoxin (trxA) gene of Rhodobacter sphaeroides is regulated by oxidative stress at the transcriptio
BACKGROUND: Bacteria use alternative sigma factors (sigmas) to regulate condition-specific gene expression for survival
Facioscapulohumeral muscular dystrophy is an autosomal dominant disorder resulting from an unusual genetic mechani
Organisms have evolved diverse means to protect themselves from oxidative stress. To better understand the molecular
The flavodoxins are flavin mononucleotide-containing electron transferases. Flavodoxin I has been presumed to be the o
AIM: To determine whether expression of a cyanobacterial flavodoxin in soil bacteria of agronomic interest confers prote
Escherichia coli cells from strain fpr, deficient in the soxRS-induced ferredoxin (flavodoxin)-NADP(H) reductase (FPR), dis
Purified flavohaemoglobin (HMP) of Escherichia coli reduces Fe(III) in a superoxide dismutase (SOD)-sensitive reaction, d
Escherichia coli possesses a flavohemoglobin (Hmp), product of hmp, the first microbial globin gene to be sequenced and
Oxidatively modified thiol groups of cysteine residues are known to modulate the activity of a growing number of protein
The temporal and spatial expression of the yqfS gene of Bacillus subtilis, which encodes a type IV apurinic/apyrimidinic e
Cyanobacteria possess a complex CO(2)-concentrating mechanism (CCM), which is induced by low inorganic carbon cond

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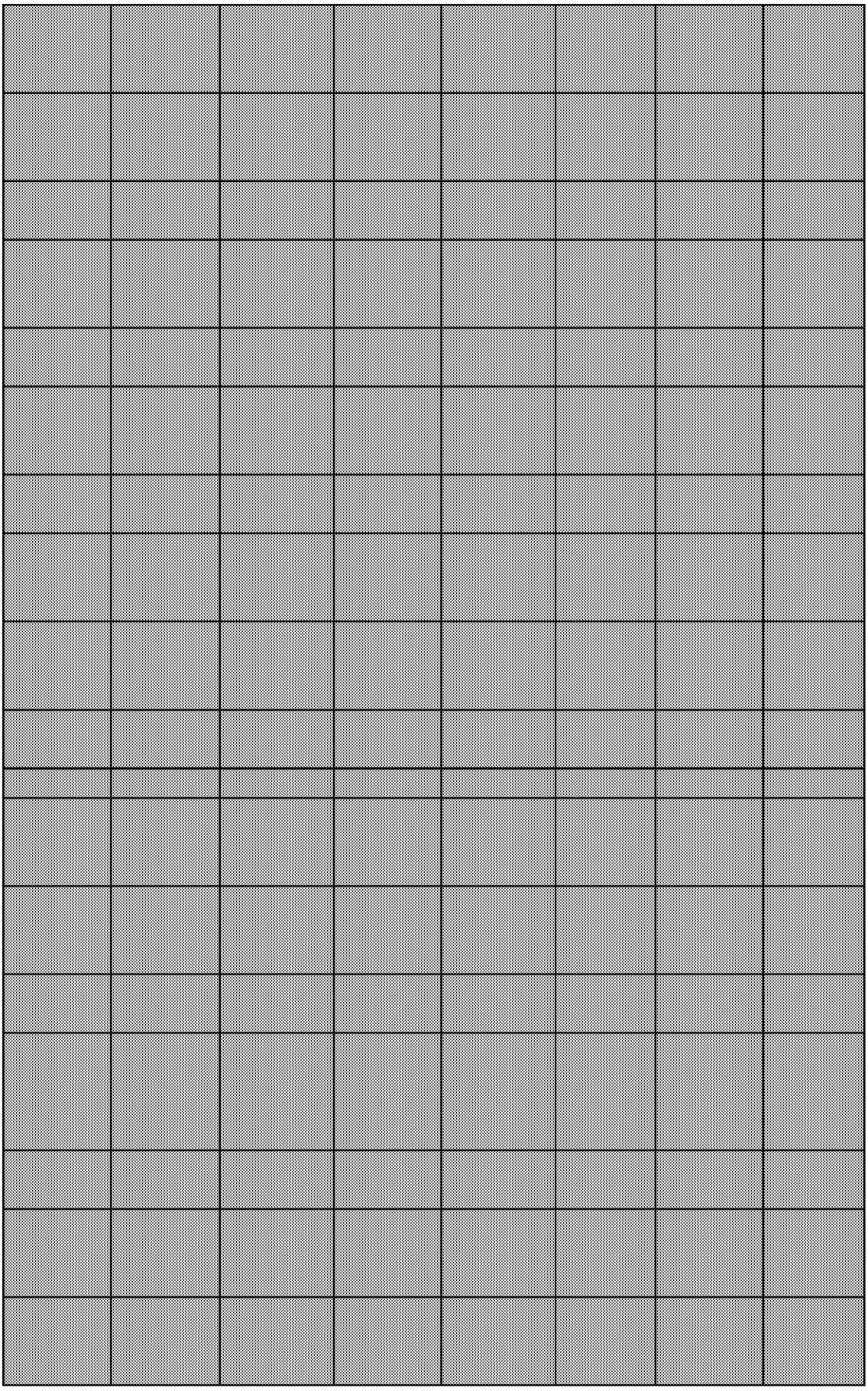

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We have studied the function and expression of the flavohemoglobin (YHb) in the yeast Saccharomyces cerevisiae. This p
OBJECTIVE: The transcription factor SoxR, which serves as a cellular redox sensor, is a global activator of antioxidative str
In this work, we characterized the gene encoding iron superoxide dismutase-A (FeSOD-A) in wild-type (WTS) and antimo
The ergosterol biosynthesis pathway is well characterized in Saccharomyces cerevisiae, while little is known about the pa
Proteins are subject to modification by reactive oxygen species (ROS), and oxidation of specific amino acid residues can i
The mammalian NRAMP gene family has two members, NRAMP1 and NRAMP2 that encode integral membrane proteins
Superoxide dismutases are enzymes that defend against oxidative stress through decomposition of superoxide radical. E
Mucoid colony morphology is the result of the overproduction of the exopolysaccharide alginate and is considered to be
Spirometra erinacei is a pseudophyllidean tapeworm which inhabits the intestines of cats and dogs. The infections are us
Pseudomonas aeruginosa PAO1 has two differentially expressed methionine sulfoxide reductase genes: msrA (PA5018) a
Paracoccidioides brasiliensis is a thermodimorphic fungus associated with paracoccidioidomycosis (PCM), the most com
Valine glycine repeat G (VgrG) proteins are regarded as one of two effectors of Type VI secretion system (T6SS) which is a
DNA microarray analysis showed that yfiD, yggB, and yggE genes were up-regulated when superoxide dismutase (SOD)-d
Vitamin B6 is recognized as an important cofactor required for numerous metabolic enzymes, and has been shown to act
In this study, the effects of 1 mM sodium nitrite, a reactive nitrogen species (RNS) generator, and 0.5 mM paraquat, whic
The rhizobial bacterium Bradyrhizobium japonicum functions as a nitrogen-fixing symbiont of the soybean plant (Glycine

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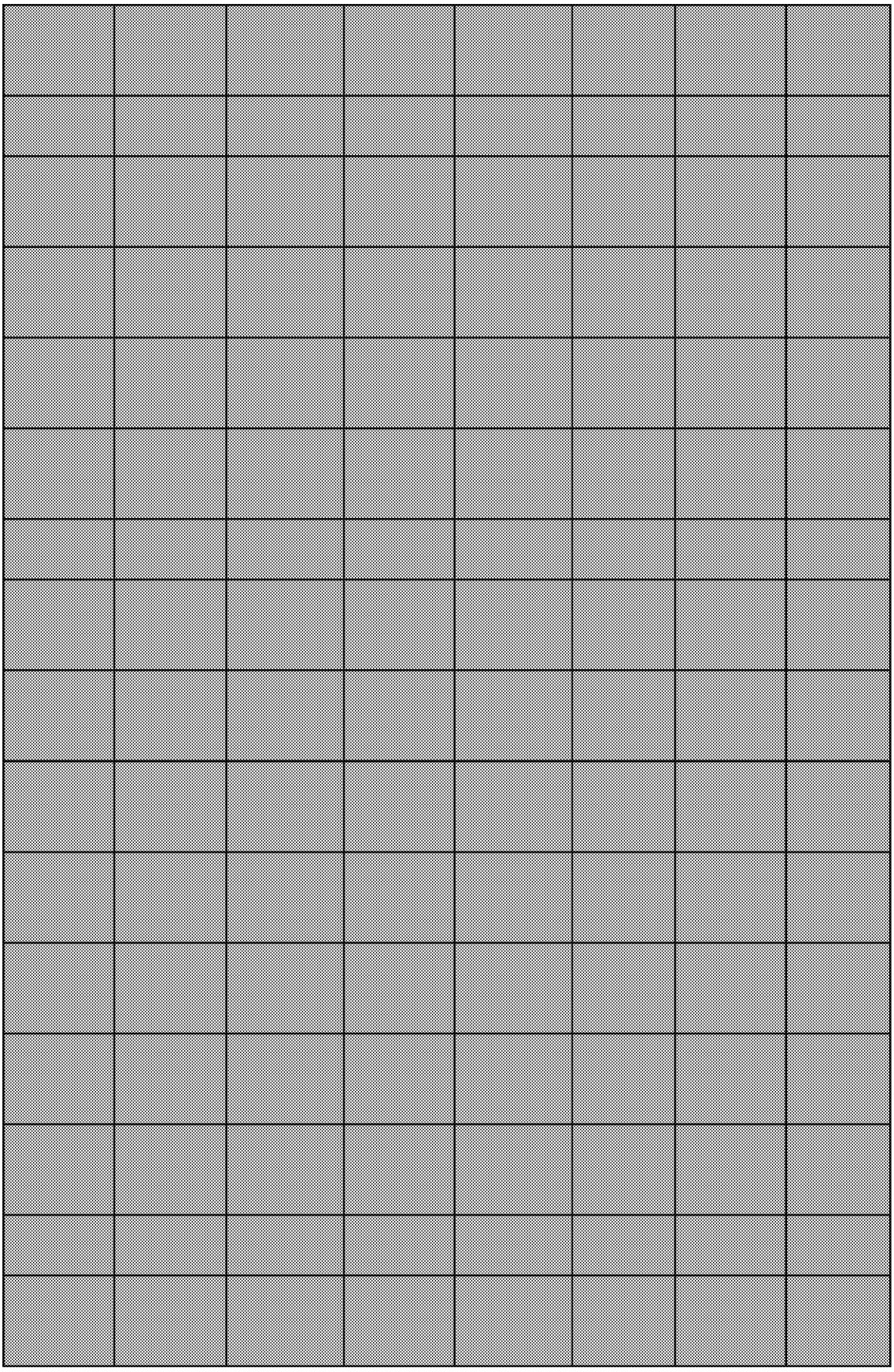

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Escherichia coli responds to oxidative stress by activating sets of coregulated genes that help the cell to maintain homeos
We have isolated and characterized a gene encoding cytosolic glutathione reductase from Brassica campestris (B. campe
Highly variable regions called genomic islands are found in the genomes of marine picocyanobacteria, and have been pre
The transcription of manganese superoxide dismutase (MnSOD), expression of which is essential for detoxification of sup
A full-length cDNA sequence putatively encoding an ATP-binding cassette (ABC) transporter (GintABC1) was isolated fron
Glutaredoxins (GRXs) are small proteins with glutathione-dependent disulfide oxidoreductase activity involved in cellular
A full-length metallothionein (MT) gene (GintMT1) was isolated from Glomus intraradices extraradical mycelium. This is t
Vitamin B6 is an essential metabolite that has recently been implicated in defense against cellular oxidative stress. In fun
Microarray analyses were conducted to evaluate the paraquat-induced global transcriptional response of Bacillus anthra
The NADP(H)-dependent enzymes glucose-6-phosphate dehydrogenase (G6PDH) and ferredoxin(flavodoxin)-NADP(H) re
The glutathione peroxidase homologous gene (Gpxh gene) in Chlamydomonas reinhardtii is up-regulated under oxidative
The effect of the glutathione reductase (GshR) activity of Lactobacillus sanfranciscensis DSM20451(T) on the thiol levels i
SoxR is a transcription factor that governs a global defense against the oxidative stress caused by nitric oxide or excess su
In the current study, we examined the expression level of glyceraldehyde-3-phosphate dehydrogenase (GAPDH) protein
PIP: This article describes some negative effects from modernization and urban growth in South America, including disea
Laboratory conditions have been identified that cause the rapid death of cultures of cyanobacteria producing urease. On
Comparison of the proteomes of wild-type Photorhabdus luminescens and its hcaR derivative, grown in insect hemolymp

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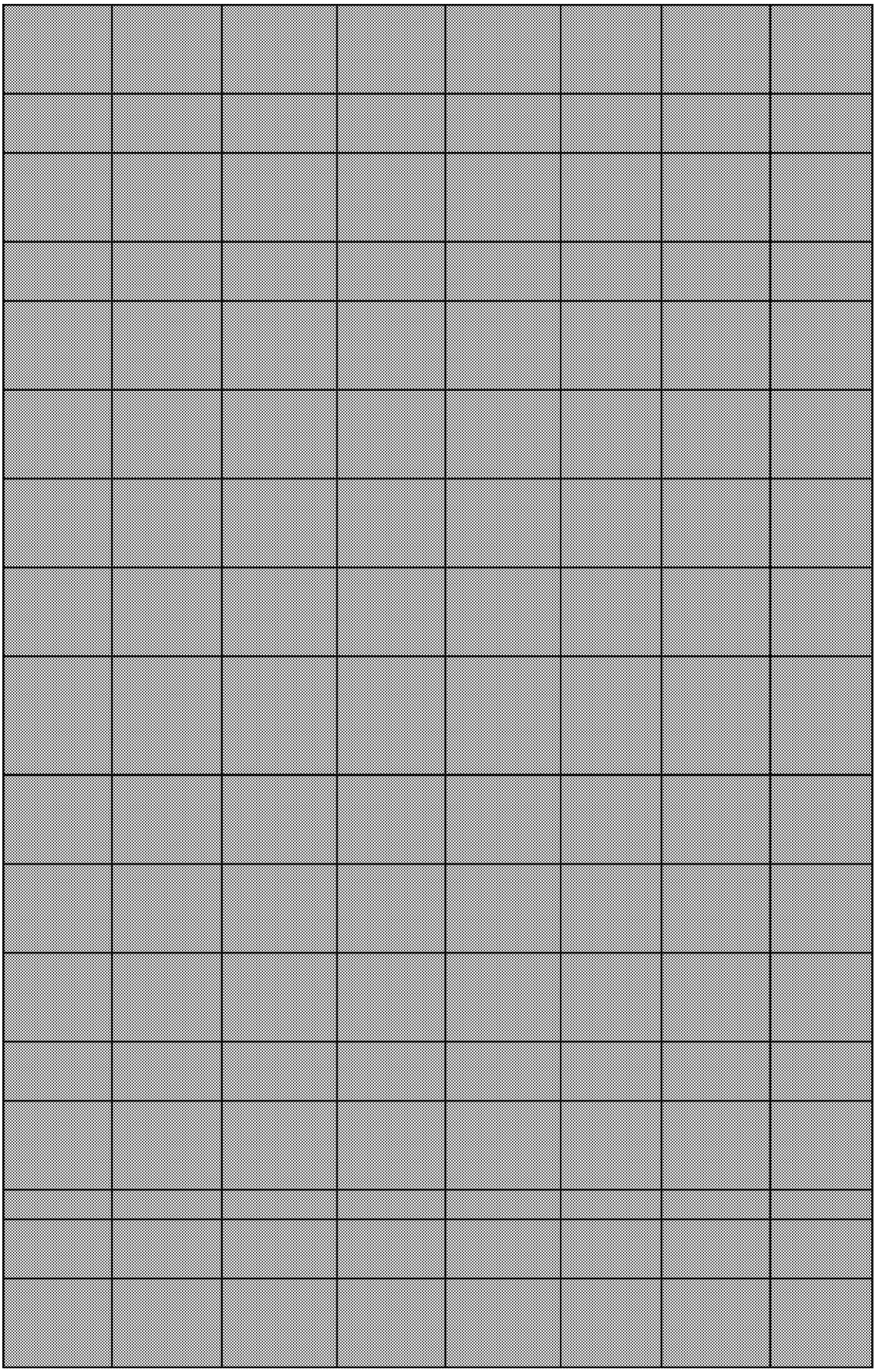

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MAGGY is a gypsy-like retrotransposon isolated from the plant pathogenic fungus Magnaporthe grisea. The ability of vari
Ascorbate peroxidases are important enzymes that detoxify hydrogen peroxide within the cytosol and chloroplasts of pla
By comparing cDNA populations derived from chromium-stressed primary leaves of barley (Hordeum vulgare L.) with co
The human gastric pathogenic bacterium Helicobacter pylori lacks a MutSLH-like DNA mismatch repair system. Here, we
Green fluorescent protein (GFP) is a reporter that has had a significant impact due to its many advantages over other rep
A gene encoding superoxide dismutase (SOD), sodM, from S. aureus was cloned and characterized. The deduced amino a
Small heat-shock proteins (sHsps) are widespread molecular chaperones for which a peroxisomal localization has not yet
Small heat shock proteins (Hsps) protect against stress-inducible denaturation of substrates. Our objectives were to clon
The effects of oxidative insult on gene transcript levels in the filarial nematode Onchocerca volvulus were investigated us
A novel in vivo expression technology (IVET) was performed to identify Klebsiella pneumoniae CG43 genes that are speci
We have used the technique of inverse PCR to identify Escherichia coli chromosomal genes carrying Lrp-regulated inserts
KEY MESSAGE: A suppression subtractive hybridization library was constructed using inflorescence primordia of 'Nuomici
Scedosporium boydii is an opportunistic filamentous fungus which may be responsible for a large variety of infections in
Salmonella enterica serovar Typhimurium responds to superoxide-generating agents through soxR-mediated activation o
To better understand the defense mechanism of Streptococcus thermophilus against superoxide stress, molecular analys
In order to identify genes that are differentially expressed as a consequence of oxidative stress due to paraquat we used
In the present study we have analyzed protein oxidation on Escherichia coli when these cells were submitted to different

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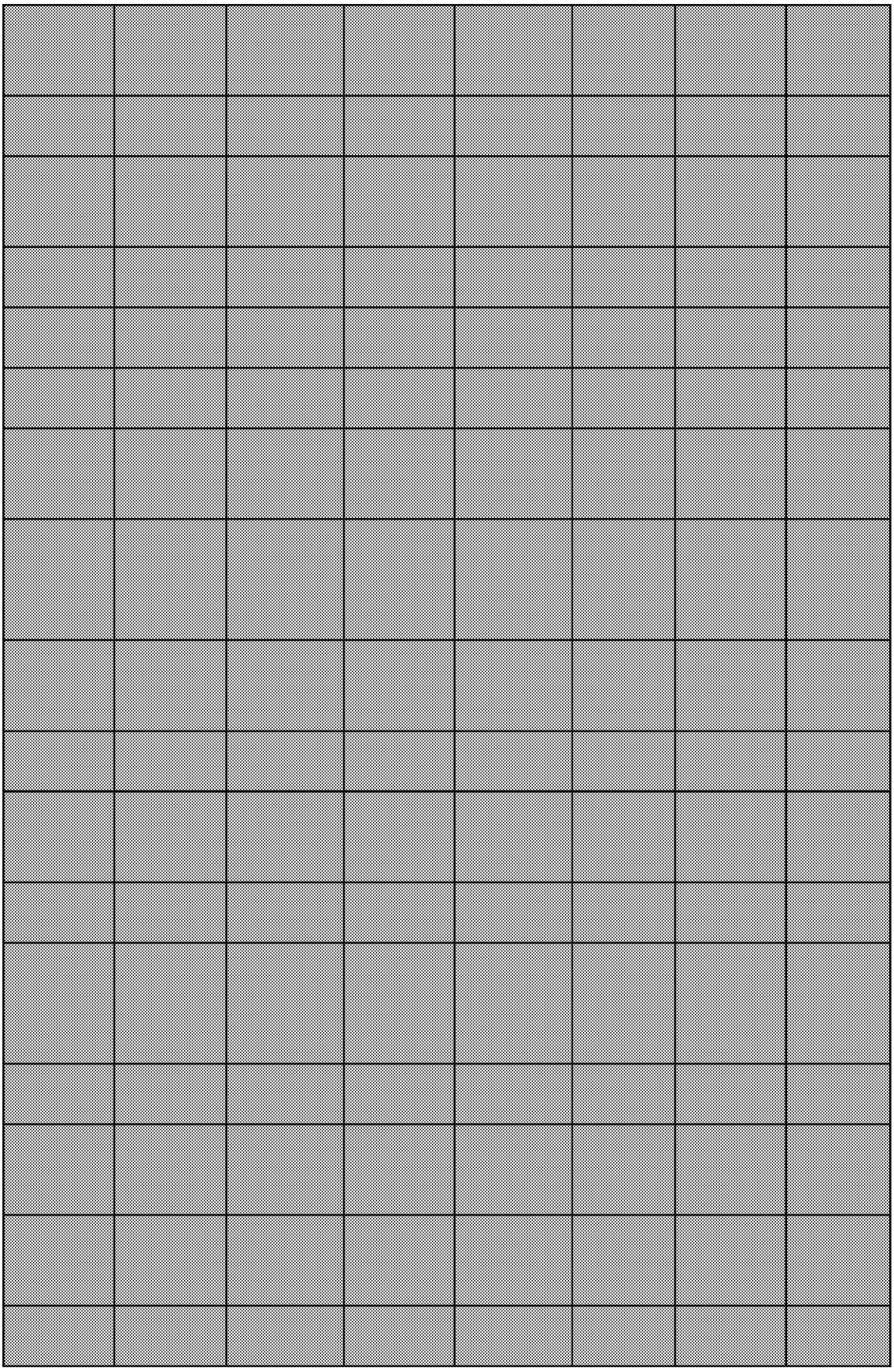

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The most frequent genetic causes of amyotrophic lateral sclerosis (ALS) determined so far are mutations occurring in the
In this study, we report the identification and characterization of 13 cytosolic GST genes in Chironomus riparius from Exp
Targeted microarray analysis was used to examine growth phase-related transcriptional responses of Escherichia coli O1
Listeria monocytogenes is a foodborne pathogen that causes listeriosis. Paraquat can generate reactive oxygen species (
To investigate the transcriptional response to oxidative stress in the heart and how it changes with age, we examined the
In Azotobacter vinelandii, deletion of the fdxA gene that encodes a well characterized seven-iron ferredoxin (FdI) is know
Mutant strains in the tsaA gene encoding alkyl hydroperoxide reductase were more sensitive to O(2) and to oxidizing age
Bordetella pertussis produces a catalase and a Fe-superoxide dismutase. The importance of these enzymes in virulence v
SoxR is a transcription activator governing a cellular response to superoxide and nitric oxide in Escherichia coli. SoxR prot
The role of the blue copper protein azurin and cytochrome C551 as the possible electron donors to nitrite reductase in th
The fission yeast Schizosaccharomyces pombe lacking copper/zinc-containing superoxide dismutase (CuZn-SOD) is auxot
Many pathogens produce one or more superoxide dismutases (SODs), enzymes involved in the detoxification of endoger
Superoxide dismutase (SOD) is a virulence factor of certain pathogenic bacteria by diminishing the effect of oxidative bur
Escherichia coli endonuclease III (endo III) is the key repair enzyme essential for removal of oxidized pyrimidines and aba
High molecular weight detergent-insoluble complexes of superoxide dismutase 1 (SOD1) enzyme are a biochemical abno
Tellurite resistance (Te(r)) is widespread in nature and it is shown here that the natural resistance of Proteus mirabilis to

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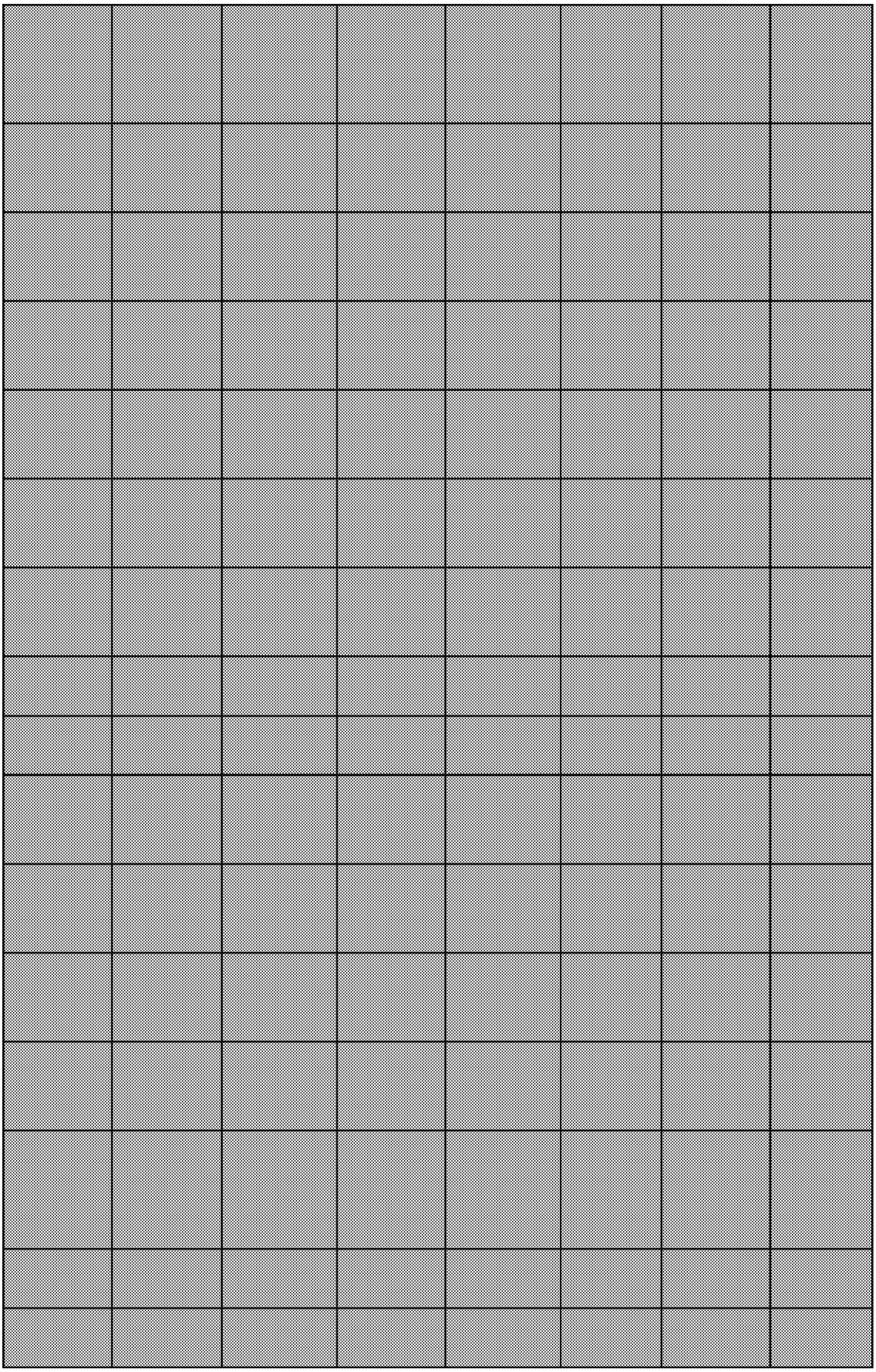

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Temperature variations at the nonextreme range modulate various processes of plant growth, development, and physiol
The induction of 8-hydroxyguanine (oh8Gua) endonuclease, a DNA repair enzyme for an oxidatively modified guanine, ol
Macrophage-specific metalloelastase (MME) hydrolyzes elastin and other matrix proteins and plays an important physiol
Yeast (Saccharomyces cerevisiae) lacking the enzyme CuZn-superoxide dismutase (sod1delta) display a large number of c
Rehmannia glutinosa is a medicinal herb that is tolerant to the non-selective herbicide paraquat. Acteoside, a phenolic co
The synthesis of manganese-superoxide dismutase in response to hydrogen peroxide and to paraquat was examined in s
Derivatives of E. coli WP2s (uvrA trpE) defective in 7,8-dihydro-8-oxoguanine (8-OG) DNA glycosylase activity (mutM), Mu
The soxRS regulon orchestrates a multifaceted defense against oxidative stress, by inducing the transcription of approxin
The product of the micF gene is an endogenous antisense RNA which down-regulates the expression of a major outer me
Antioxidant enzymes are thought to be important for the survival of pathogenic Neisseria species. We have further chara
Oxidative stress exerted by superoxide-generating agents such as paraquat triggers induction of the soxRS regulon of E. c
Phototaxis, positive (movement toward the light source) or negative (from the light source) mediates the adaptation of c
Neurospora crassa has four catalase genes--cat-1, cat-2, cat-3, and ctt-1/cat-4. cat-1 and cat-3 encode two fungal-specific
Aspergillus fumigatus is a major opportunistic pathogen and allergen of mammals. Calcium homeostasis and signaling is
The UTH1 gene was identified by screening a Saccharomyces cerevisiae promoter-probe gene bank for oxidative stress-r
Kinetoplastid glycosomes contain a variety of metabolic activities, such as glycolysis, beta-oxidation of fatty acids, lipid bi
We have identified the iscR (PA3815) gene encoding an iron-sulfur cluster assembly regulator homologue as one of the g

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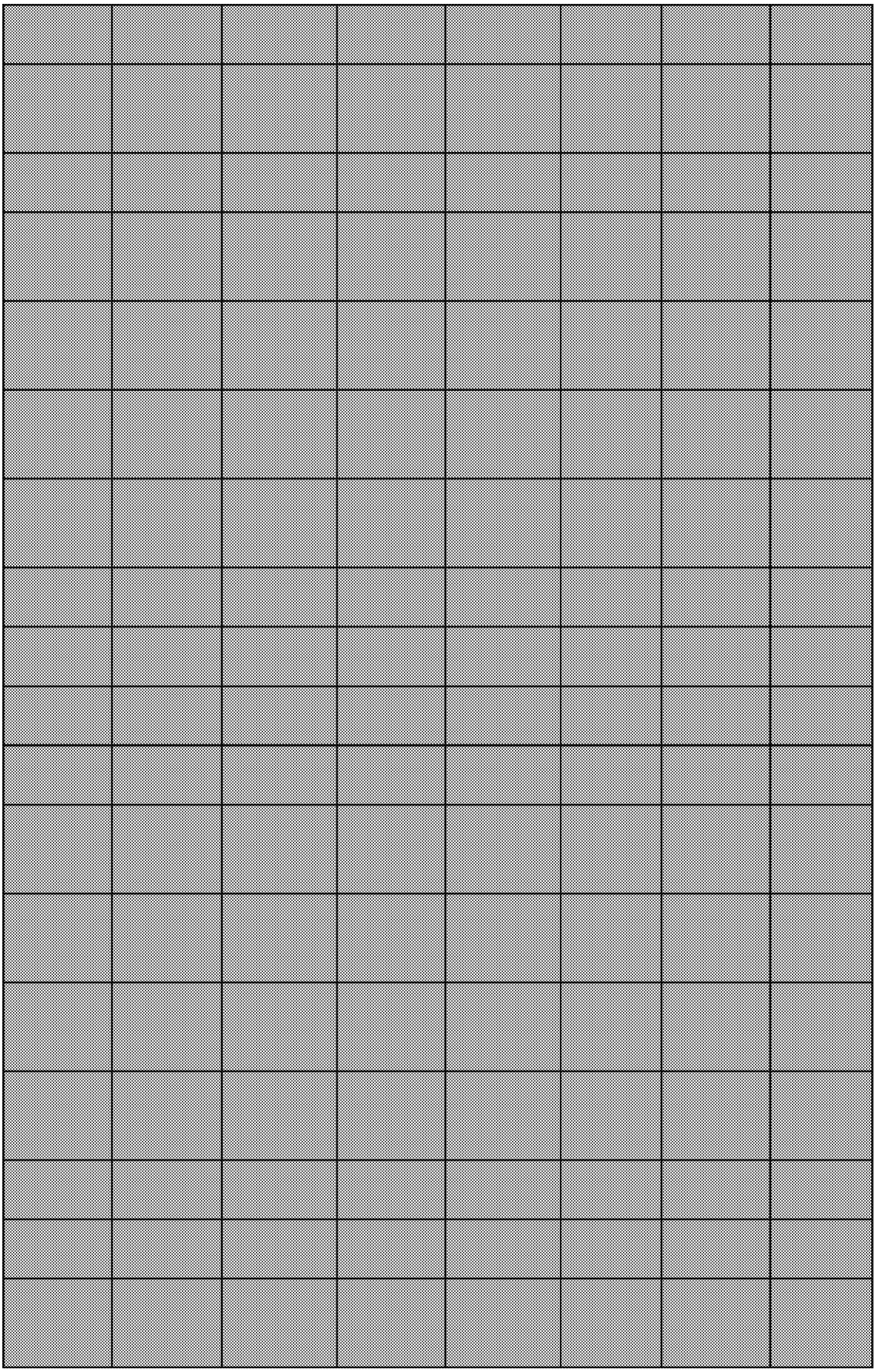

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Chloris virgata Swartz (C. virgata) is a gramineous wild plant that is found in alkaline soil areas in northeast China and is h
Here we report the isolation and characterization of the Chlamydomonas sp. W80-derived CFo ATP synthase subunit II W
A full-length cDNA encoding putative phospholipid hydroperoxide glutathione peroxidase (PHGPx) was cloned from Raph
Gene fusions in Escherichia coli that showed increased beta-galactosidase expression in response to treatment with a sup
*The Arabidopsis heat-intolerant 2 (hit2) mutant was isolated on the basis of its impaired ability to withstand moderate h
We have isolated promoters inducible by paraquat, a superoxide radical-generating agent, from Escherichia coli, using pr
Mu dX phage was used to isolate three gene fusions to the lacZ gene (soi::lacZ; soi for superoxide radical inducible) that v
Isocitrate lyase is a key enzyme of the glyoxylate cycle. This cycle plays an essential role in cell growth on acetate, and is i
We recently reported a genome-wide screen for extended stationary phase survival in Escherichia coli. One of the mutan
Like its homologs throughout the biological world, the L-isoaspartyl protein repair methyltransferase of Escherichia coli, e
The fission yeast Schizosaccharomyces pombe contains two dithiol glutaredoxins (Grx1 and Grx2) and genes for three pu
The tafazzin (TAZ) gene is highly conserved from yeast to humans, and the yeast taz1 null mutant shows alterations in ca
Alcohol dehydrogenases catalyse the reversible oxidation of alcohols to aldehydes or ketones, with concomitant reductio
The original pso3-1 mutant isolate of the yeast Saccharomyces cerevisiae exhibits a pleiotropic mutagen-sensitivity phen
Lysine decarboxylase expression by Vibrio vulnificus, which is up-regulated by CadC in response to acid stress, is also indu
We recently demonstrated that maize mitochondrial MnSODs are encoded by a differentially expressed multigene family
For photoheterotrophic growth, a Chlamydomonas reinhardtii cell requires at least 1.7 x 10(7) manganese ions in the me

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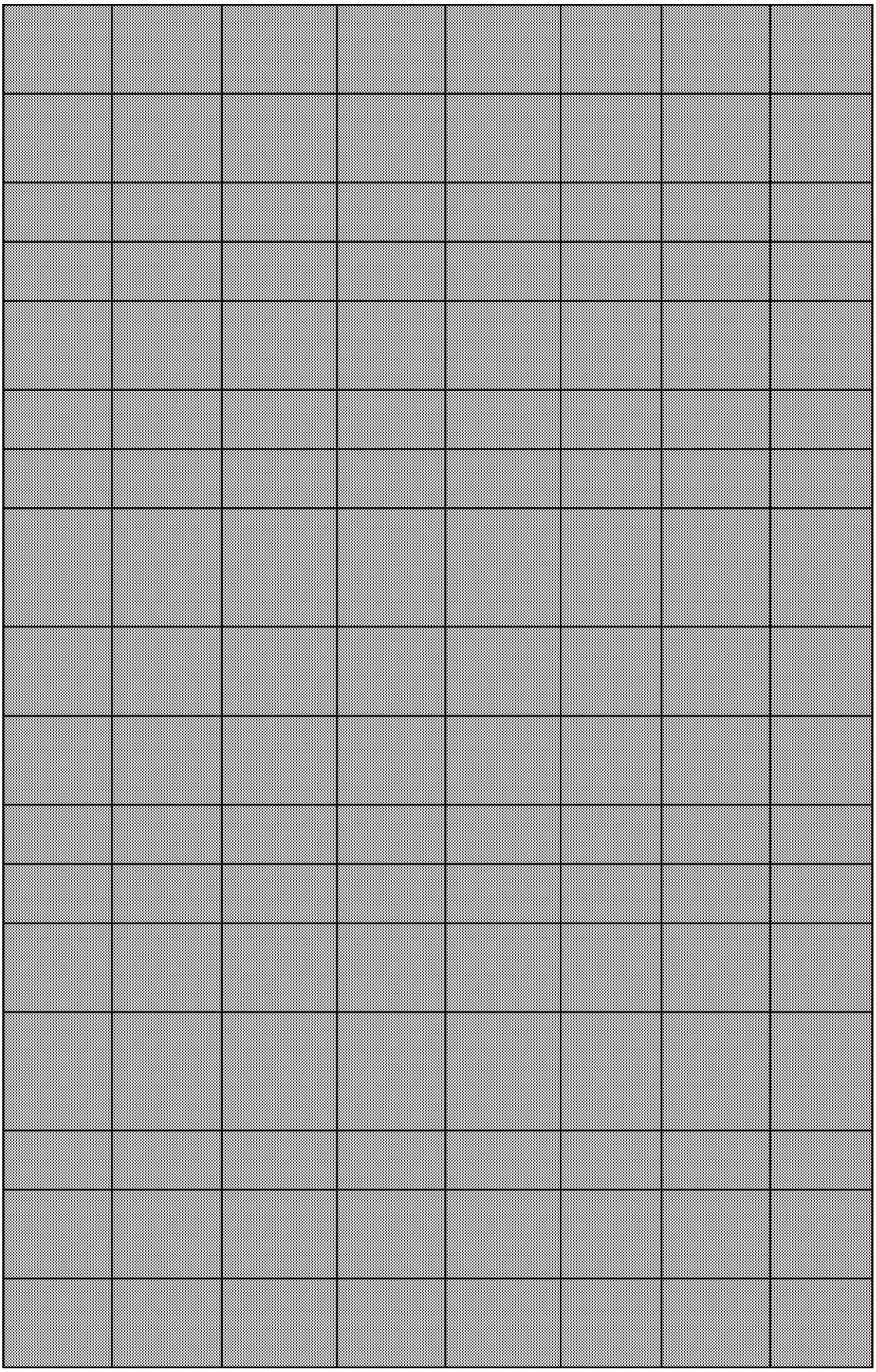

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The gene encoding manganese superoxide dismutase (MnSOD) from Drosophila melanogaster has been isolated and its
We describe the maternal effect phenotype of a hypomorphic mutation in the Drosophila gene for glutamine synthetase
We found previously that 8-hydroxyguanine (oh8Gua) endonuclease in E. coli is induced in response to oxidative stress ir
The toxic effect of paraquat, mainly caused by production of superoxide radicals, results in the induction of polyamine sy
Haem oxygenases (HO) are ubiquitous enzymes catalysing the oxidative degradation of haem into biliverdin, iron and car
Upon disturbance of their function by stress, mitochondria can signal to the nucleus to steer the expression of responsive
The ability of a microorganism to adapt to changes in the environment, such as in nutrient or oxygen availability, is essen
Human manganese superoxide dismutase (Sod2p) has been expressed in yeast and the protein purified from isolated yea
MglA is a transcriptional regulator of genes that contribute to the virulence of Francisella tularensis, a highly infectious pa
Reactive oxygen species, especially hydrogen peroxide, are important in cellular signal transduction. However, excessive
The Staphylococcus aureus DtxR-like protein, MntR, controls expression of the mntABC and mntH genes, which encode p
A manganese superoxide dismutase (MnSOD) gene was cloned from the fall webworm, Hyphantria cunea. MnSOD cDNA
The [4Fe-4S]-containing fumarases A + B of Escherichia coli are susceptible to oxidative inactivation, while fumarase C, w
A cDNA, mSOD1, encoding cytosolic copper/zinc superoxide dismutase (CuZnSOD) was cloned and characterized from ce
Superoxide dismutase (SOD) cDNA, mSOD2, encoding cytosolic copper/zinc SOD (CuZnSOD) cDNA was isolated from susp
The fpr gene, which encodes a ferredoxin-NADP+ reductase, is known to participate in the reversible redox reactions bet

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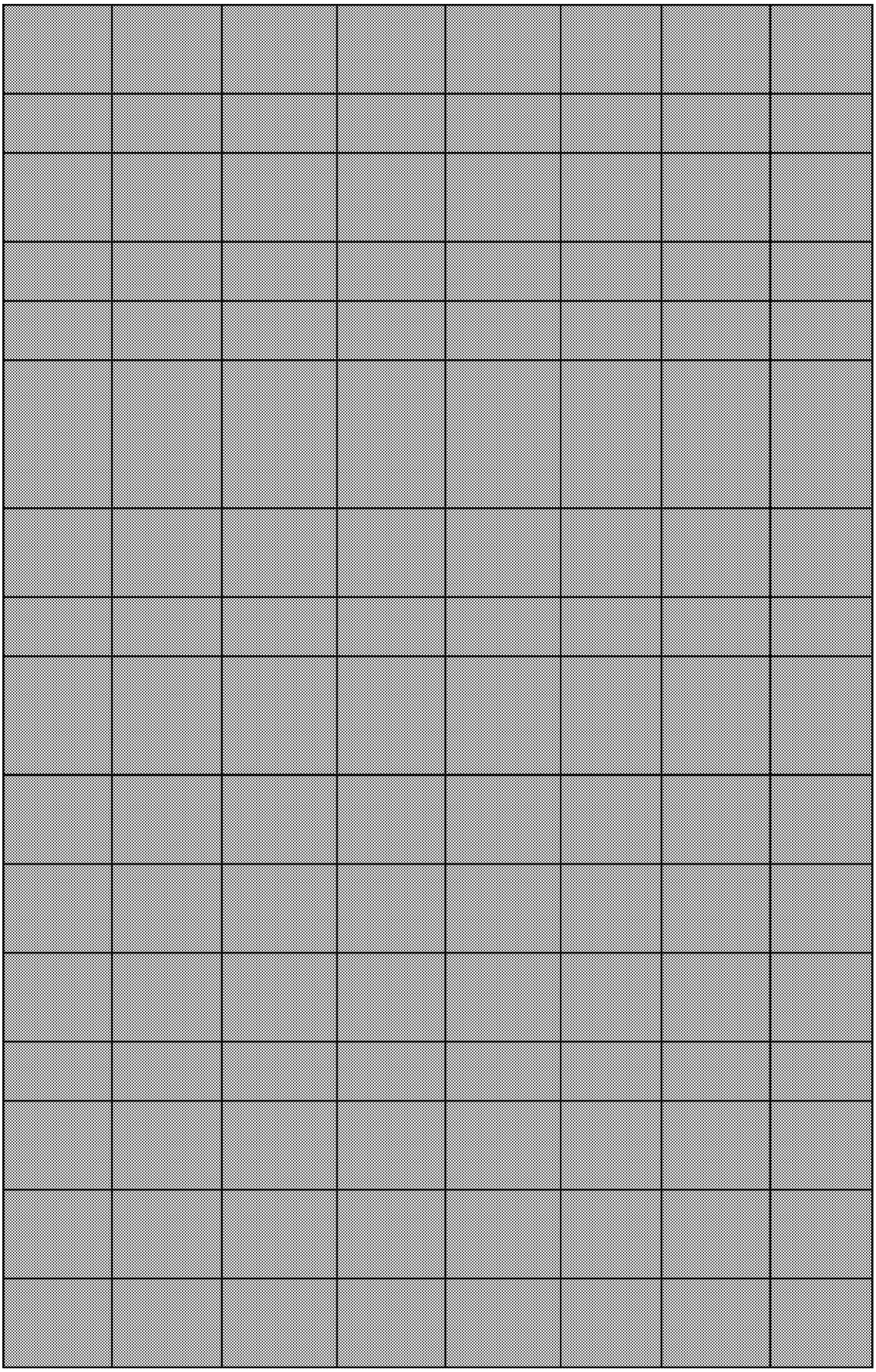

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A cDNA clone encoding a glutathione peroxidase (GPX)-like protein was isolated from the cDNA library from halotolerant
Aspergillus fumigatus is a major opportunistic pathogen and allergen of mammals. Nutrient sensing and acquisition mec
The soxR locus of Escherichia coli K12 mediates transcriptional activation of a complex oxidative stress regulon in respon
Superoxide dismutase (SOD) detoxifies cell-toxic superoxide radicals and constitutes an important component of antioxic
Phospholipid hydroperoxide glutathione peroxidase (PHGPx) is a major antioxidant enzyme and plays critical roles in the
The recent genetic and biochemical studies reveal a considerable overlap among cellular processes in response to heat a
We have isolated the Brassica campestris cDNA encoding glutathione reductase of 502 amino acid residues with molecul
Two cDNAs (FeSODA and FeSODB cDNAs) corresponding to superoxide dismutase (1.15.1.1., SOD) were isolated from a T
Genetic complementation of a sodA sodB Escherichia coli mutant strain was used to clone Rhodobacter capsulatus genes
A cDNA encoding a cytosolic ascorbate peroxidase (APX), swAPX1, was isolated from cell cultures of sweet potato (Ipom
The AbGst1 gene encoding a glutathione transferase from the necrotrophic pathogen Alternaria brassicicola was cloned
In a majority of living organisms, a fundamental protection mechanism from reactive oxygen species is by the ascorbate-
The gene encoding a superoxide dismutase (PiSOD) was cloned by suppressive subtractive hybridization from cDNA libra
A cDNA corresponding to superoxide dismutase (SOD; EC 1.15.1.1.) was isolated from a Leishmania donovani chagasi (L.
Thioredoxins (Trxs) are a family of small, highly conserved and ubiquitous proteins that are involved in protecting organis

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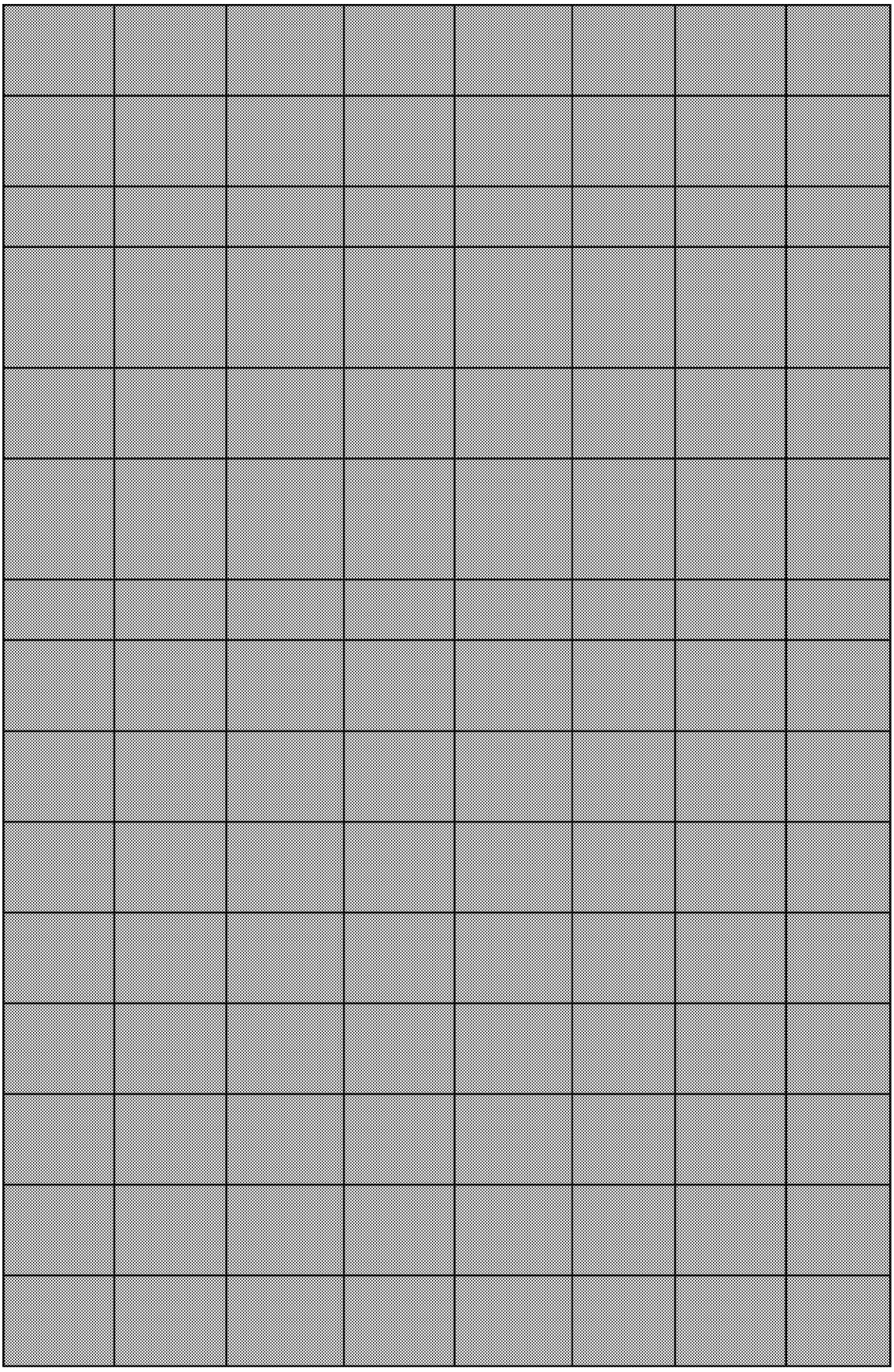

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Thioredoxin peroxidase (Tpxs) plays an important role in maintaining redox homeostasis and in protecting organisms fro
MtsABC is a Streptococcus pyogenes ABC transporter which was previously shown to be involved in iron and zinc accumu
The genome of the green sulfur bacterium Chlorobaculum (Cba.) tepidum, a strictly anaerobic photolithoautotroph, is pr
Microbial flavohaemoglobins are proteins with homology to haemoglobins from higher organisms, but clearly linked to n
Escherichia coli formamidopyrimidine DNA glycosylase (Fpg), MutY DNA glycosylase, endonuclease VIII, and endonucleas
Using differential screening we have cloned a cDNA encoding a novel oxidative stress protein designated A170 from mur
The yeast gene PSO7 was cloned from a genomic library by complementation of the pso7-1 mutant's sensitivity phenotyp
A novel thioredoxin-linked thiol peroxidase (Px) from Escherichia coli has been reported previously (M. K. Cha, H. K. Kim,
Familial amyotrophic lateral sclerosis (FALS) is associated with mutations in SOD1, the gene encoding copper/zinc supero
In Escherichia coli, MutM (8-oxoG DNA glycosylase/lyase or Fpg protein), MutY (adenine DNA glycosylase) and MutT (8-o
An mdaB mutant strain in a quinone reductase (MdaB) of Helicobacter hepaticus type strain ATCC51449 was constructed
Oxidative stress resistance is one of the key properties that enable pathogenic bacteria to survive the toxic reactive oxyge
Soluble extracts of Escherichia coli contain four NADPH:paraquat diaphorases that were separable by anion-exchange HP
The plant pathogen Ralstonia solanacearum, which causes bacterial wilt disease, is exposed to reactive oxygen species (R
The iron-storage protein bacterioferritin (Bfr) from Neisseria gonorrhoeae strain F62 was identified in cell-free extracts a
Catalase is hypothesized to be critical in the protection of Neisseria gonorrhoeae from H2O2 produced during aerobic res

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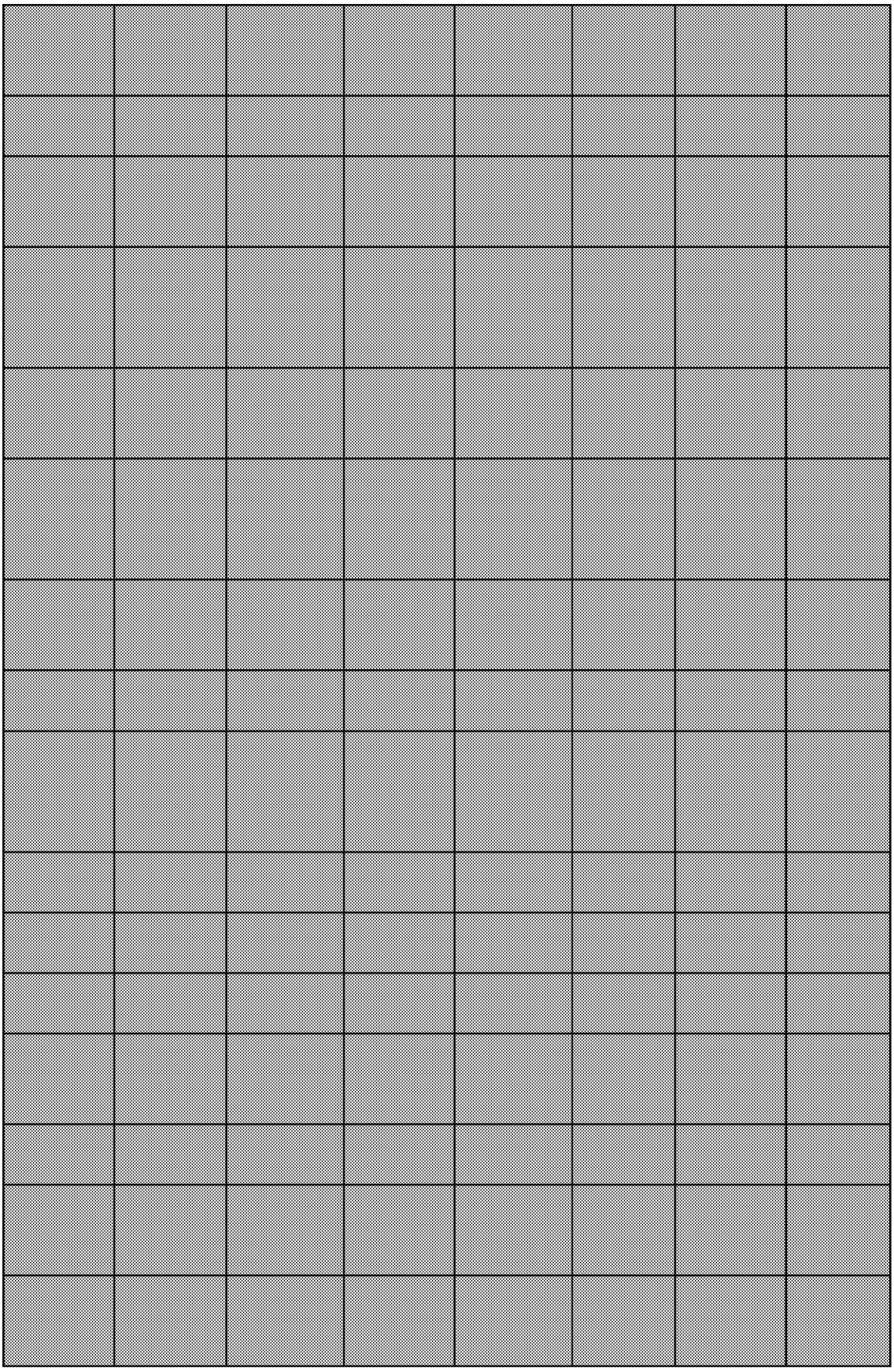

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Fur (ferric uptake regulator) is a prokaryotic transcriptional regulator that controls a large number of genes mainly relate
The ability to induce cellular defense mechanisms in response to environmental challenges is a fundamental property of
Nitric oxide (NO) is emerging as a key regulator of diverse plant cellular processes. A major route for the transfer of NO b
Nitroreductase A catalyzes the divalent reduction of nitro compounds, quinones, and dyes by NADPH. In this paper, nitro
Formation of nonnative disulfide bonds in the cytoplasm, so-called disulfide stress, is an integral component of oxidative
The charged quaternary ammonium compounds--methyl, ethyl and benzyl viologens--generate reactive oxygen species i
A new oxidative stress-responsive bacterial biosensor was constructed using the promoter of the pgi gene fused to the lu
The full-length cDNA of CaAbsi1 encodes a presumptive protein of 134 amino acid residues that has homology to a putat
All organisms have defense systems against oxidative stress that include multiple genes of antioxidant defense. These ge
Manganese ions (Mn(2+)) play a crucial role in virulence and protection against oxidative stress in bacterial pathogens. S
Citrus salt-stress associated protein (Cit-SAP) reveals significant sequence homology to mammalian glutathione peroxida
NRAMPs (natural resistance-associated macrophage proteins) have been characterized in mammals as divalent transitio
The ability to adapt to acute oxidative stress (e.g. H(2)O(2), peroxynitrite, menadione, and paraquat) through transient a
We determined the complete nucleotide sequence of conjugative plasmid pUM505 isolated from a clinical strain of Pseu
Actinobacillus pleuropneumoniae is the causative agent of porcine pleuropneumonia, a disease characterized by pulmon
The role of the prqR gene in the regulation of the adaptive response of the cyanobacterium Synechocystis sp. PCC6803 t
Autophagy degrades toxic materials and old organelles, and recycles nutrients in eukaryotic cells. Whereas the studies o
We tested the hypothesis that during metabolism of naphthalene and other substrates by Pseudomonas sp. strain As1 o

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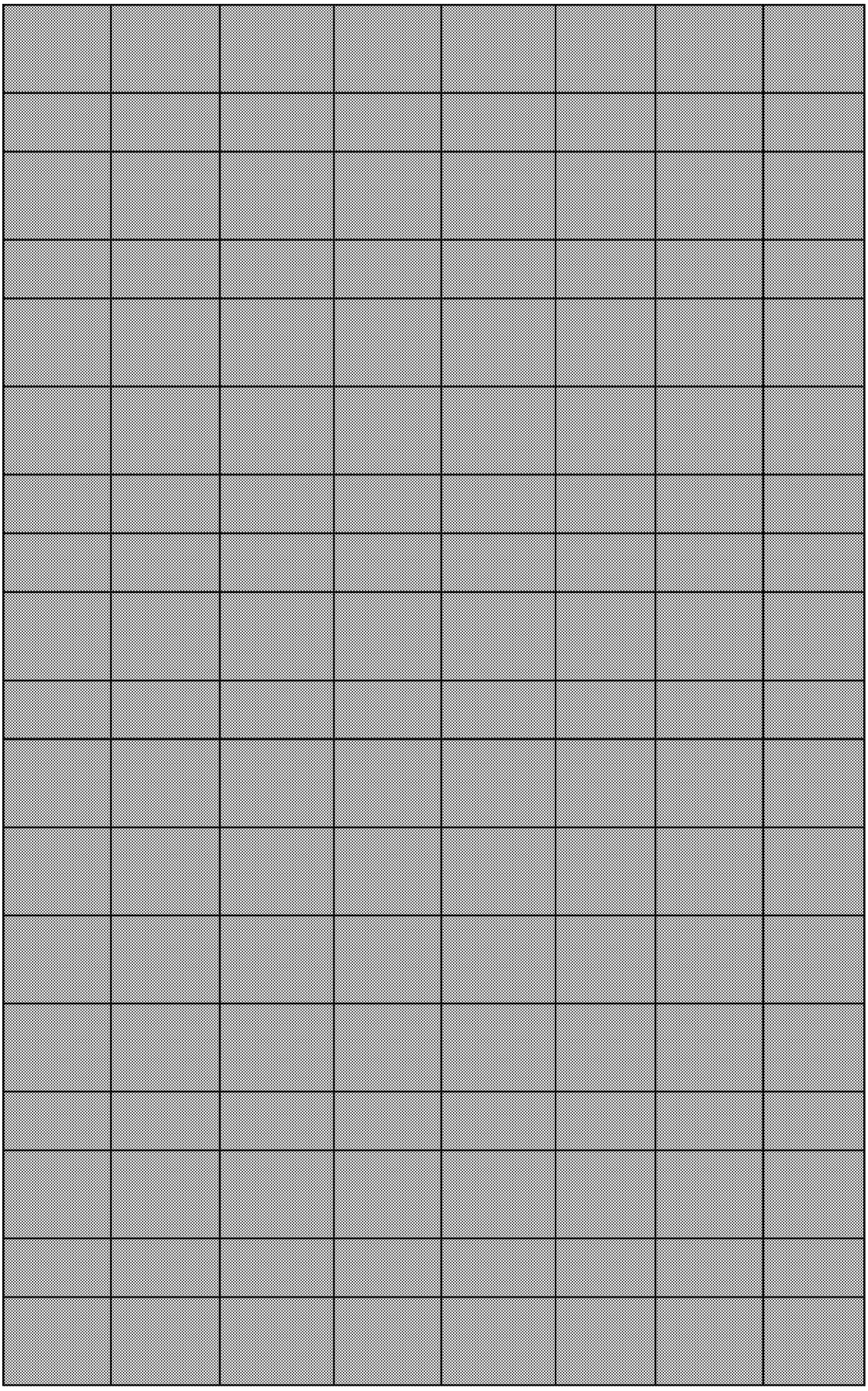

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The structural gene of human Cu/Zn superoxide dismutase (hSOD1) was cloned into a yeast expression vector containing
Glutathione reductase (GR) plays an essential role in a cell's defense against reactive oxygen metabolites by sustaining th
Recombination repair protein 1 (Rrp1) includes a C-terminal region homologous to several DNA repair proteins, including
The yeast peptide-methionine sulfoxide reductase (MsrA) was overexpressed in a Saccharomyces cerevisiae null mutant
The effects of redox-sensitive proteins on Escherichia coli were investigated by overexpressing Pseudomonas 2-nitroben
rcd1 is a mutant of Arabidopsis thaliana that is more resistant to methyl viologen, but more sensitive to ozone than the w
Roles of oxidative stress and photoinhibition in high light acclimation were studied using a regulatory mutant of the cyan
A plasmid containing a transcriptional fusion of the Escherichia coli katG promoter to a truncated Vibrio fischeri lux oper
The Arabidopsis thaliana atr7 mutant is tolerant to oxidative stress induced by paraquat (PQ) or the catalase inhibitor am
Survival of Bacteroides fragilis in the presence of oxygen was dependent on the ability of bacteria to synthesize new prot
Candida dubliniensis is a yeast species closely related to Candida albicans, but in contrast to C. albicans, limited informat
It is important to know responses of the pathogenic fungi to reactive oxygen species by which hosts protect themselves a
The Sca permease in the oral bacterium Streptococcus gordonii is a member of a family of ATP-binding cassette (ABC)-ty
Many natural proteins have been developed into drugs and produced for direct application. Identifying improved hosts t
The Saccharomyces cerevisiae yap1 null strain was transformed with a Chlamydomonas reinhardtii cDNA expression libr
An oxidative stress-specific bacterial cell array chip was fabricated and implemented in the analysis of various different c
Within a large family of peroxidases, one member that catalyzes the reduction of organic peroxides to alcohols is known

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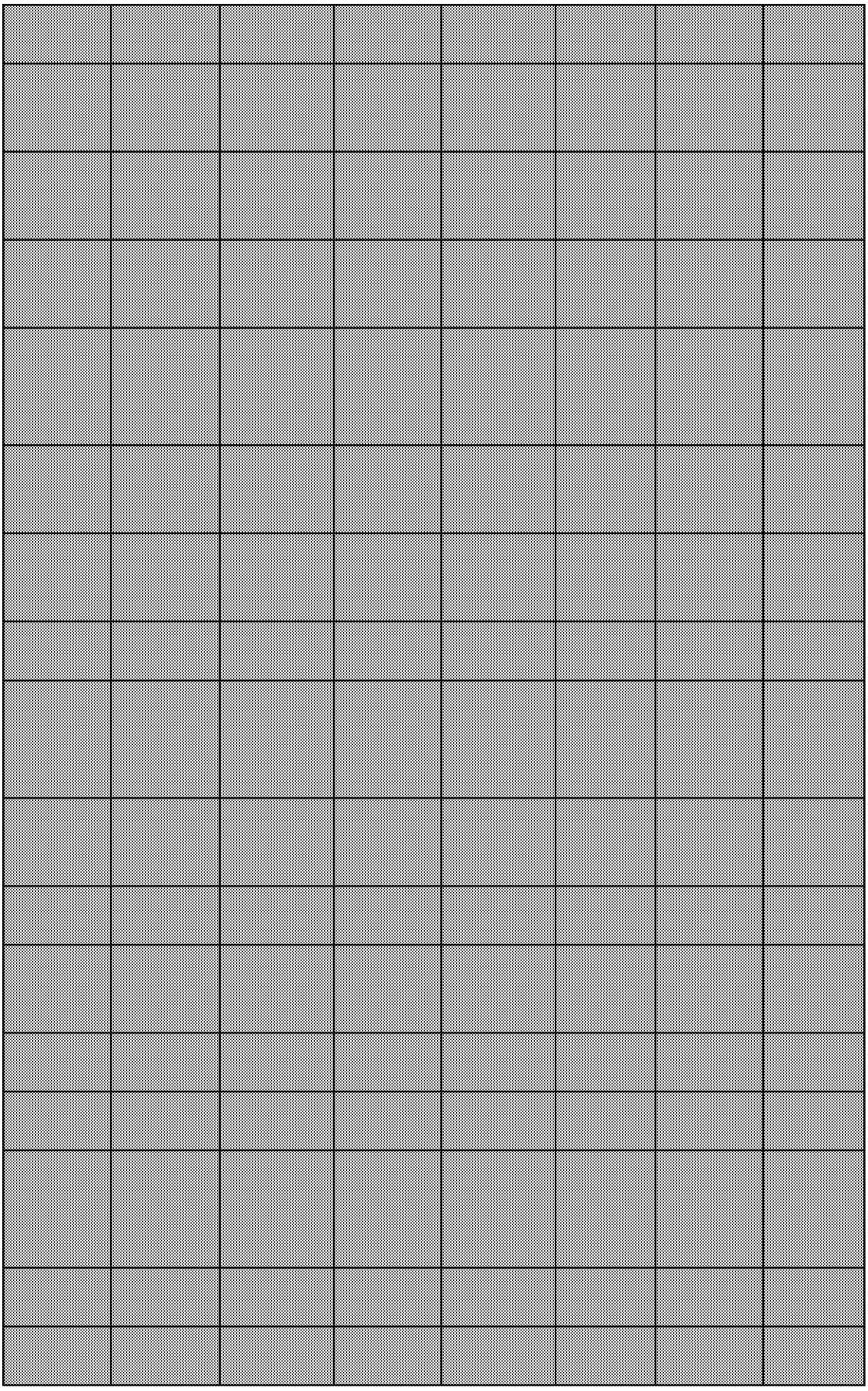

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Reactive oxygen species (ROS) from a variety of sources are often encountered by invading plant pathogens during the in
The cytotoxic effects of reactive oxygen species are largely mediated by iron. Hydrogen peroxide reacts with iron to form
Pseudomonas chlororaphis GP72 is an important plant growth-promoting rhizobacteria (PGPR) with a wide-spectrum ant
Extracts of E. coli contain at least three easily separable NAD(P)H:paraquat diaphorases. One of these is identified as thio
We report the first example of a gene, hmp, encoding a soluble flavohemoglobin in Escherichia coli K-12, which is up-reg
Streptococcus mutans, a key etiological agent of human dental caries, lives almost exclusively on the tooth surface in pla
Thioredoxin-like proteins of the TlpA/ResE/CcmG subfamily are known to face the periplasm in gram-negative bacteria. U
High coverage, whole genome shotgun (WGS) sequencing of 57 geographically- and genetically-diverse isolates of Strept
A method to grow the halophilic archaeon Haloferax volcanii in microtiter plates has been optimized and now allows the
The lipid peroxidation product 4-hydroxynon-2-enal (4-HNE) is a strong electrophile that forms covalent adducts with pro
Expression of plant metallothionein genes has been reported in a variety of senescing tissues, such as leaves and stems,
Insertional mutagenesis was used in Chlamydomonas reinhardtii to isolate original mutants hypersensitive to multiple dr
The facultative intracellular oyster parasite, Perkinsus marinus, taxonomically related to both dinoflagellates and apicom
Streptococcus pneumoniae resides in the oxygen-rich environment of the upper respiratory tract, and therefore the abili
Staphylococcus aureus reacts to changing environmental conditions such as heat, pH, and chemicals through global regul
Polyamines, ubiquitous polycationic compounds, are involved in many cellular responses and relieve paraquat-induced c
Escherichia coli polynucleotide phosphorylase (PNPase) primarily functions in RNA degradation. It is an exoribonuclease
The soxRS regulon is a cornerstone of the adaptive defense systems of Escherichia coli against oxidative stress. Unexpect

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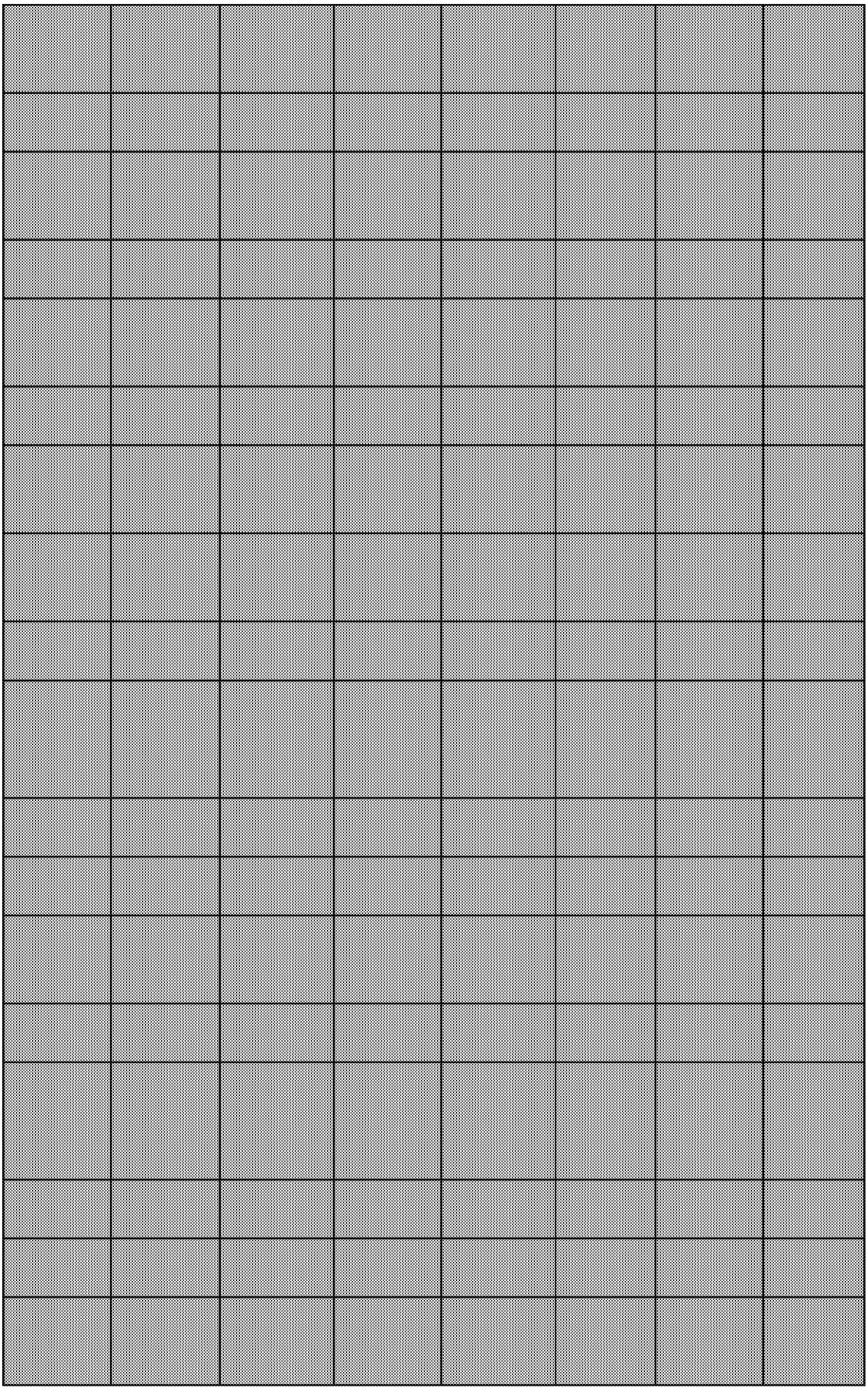

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Oxidative stress exerted by superoxide-generating (redox-cycling) agents such as paraquat triggers the soxRS regulon of
Despite the paraquat-resistant mutants that have been reported in plants, this study identified a novel A. thaliana mutan
Inducible defenses against oxidative stress are coordinated by redox-sensitive transcription factors that transduce oxidat
Higher plants express genes encoding peroxiredoxins of the two-cysteine type. This is concluded from the isolation of cD
Nitric oxide (NO) has gained interest as a major signaling molecule during plant development and in response to environ
The iron superoxide dismutase (FeSOD) gene of Escherichia coli was cloned in Saccharomyces cerevisiae cells deficient in
1. Incubation of Escherichia coli with 0.7 mM doxorubicin in MBS-glucose medium resulted in complete growth inhibitior
Glutathione (GSH) serves as the prime thiol in most organisms as its depletion increases antibiotic and metal toxicity, im
Candida albicans contains copper- and zinc-containing superoxide dismutase but also two manganese-containing supero
In this paper we have defined proteome signatures of Bacillus subtilis in response to heat, salt, peroxide, and superoxide
3DLC protein- and peptide-fractionation technique combined with iTRAQ-peptide labeling and Orbitrap mass spectromet
The high resolution 2-D protein gel electrophoresis technique combined with MALDI-TOF MS and a recently developed fl
Disentanglement of functional complexity associated with plant mitogen-activated protein kinase (MAPK) signaling has b
FerB is a cytoplasmic flavoprotein from the soil bacterium Paracoccus denitrificans with a putative role in defense agains
Pseudomonas aeruginosa is a ubiquitous pathogen most typically associated with wound infections, but also the main ca
Derivatives with insertional inactivation of prqA and mvrA genes were obtained and studied in the Synechocystis sp. PCC

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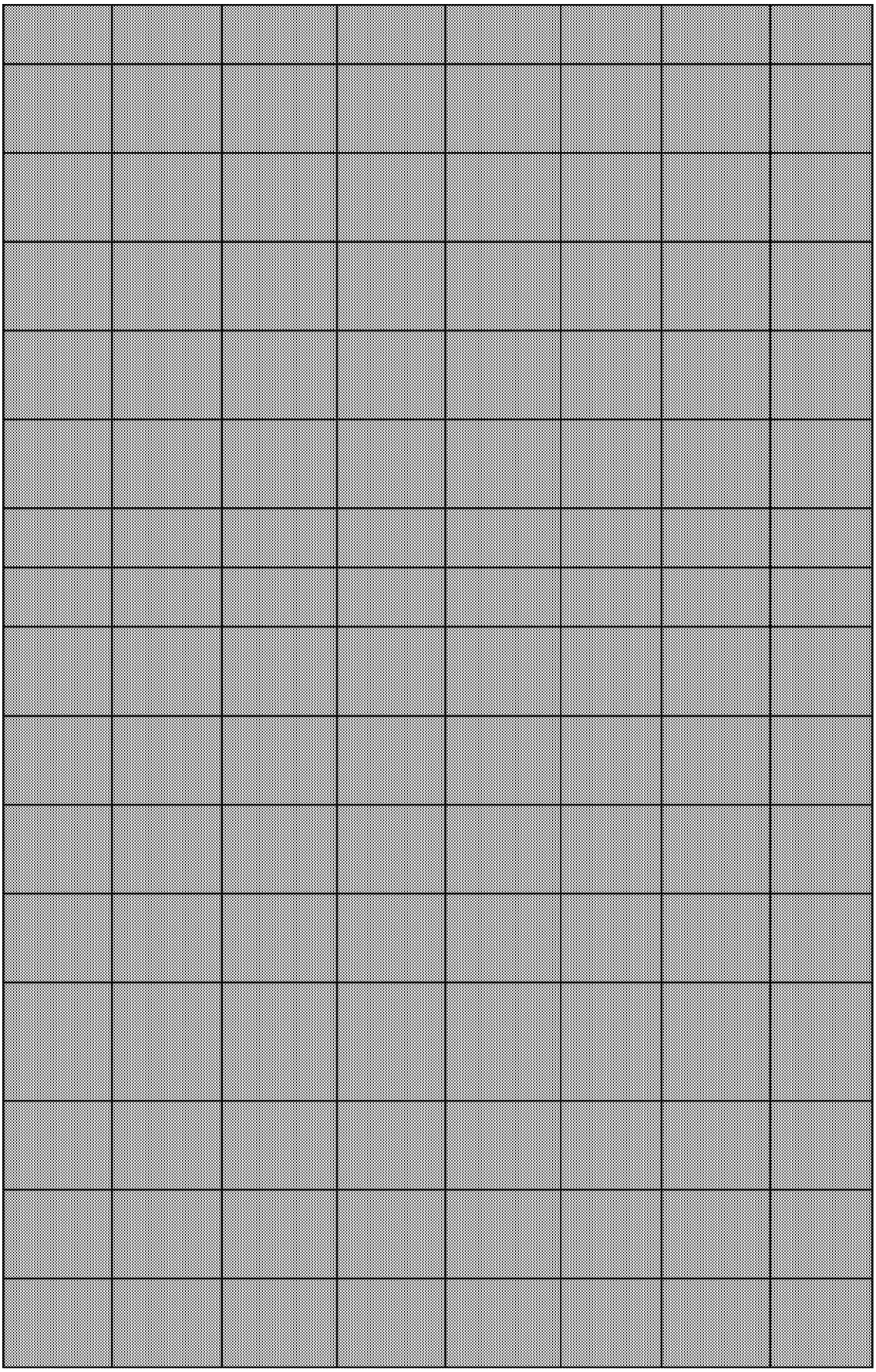

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The 8-oxodeoxyguanine (8-oxodG) repair system participates in the prevention and correction of mutations generated by
The consumption of molecular oxygen by Pseudomonas aeruginosa can lead to the production of reduced oxygen specie
Potentially damaging reactive oxygen species (ROS) are involved in a number of pathways ranging from signal transducti
1. Complex genetic systems counteract different types of 'oxidative stress' caused by reactive derivatives of oxygen. 2. Th
AIM: To develop a faster and easier in vivo method to screen compounds for anti-oxidant activity using a microbial syster
BACKGROUND: Metallothionein (mt) transcription is elevated in heavy metal tolerant field populations of Orchesella cin
The L-isoaspartyl protein carboxyl methyltransferase (pcm) can stimulate repair of isoaspartyl residues arising spontaneo
Rex, a transcriptional repressor that modulates its DNA-binding activity in response to NADH/NAD(+) ratio, has recently b
Regulation of the katB catalase gene in the anaerobic bacterium Bacteroides fragilis was studied. Northern blot hybridiza
PURPOSE: Regulation of gene expression after gene introduction is a problematic aspect of gene therapy. Transcription r
The Mycobacterium tuberculosis hmp gene encodes a protein which is homologous to flavohemoglobin in Escherichia co
To induce oxidative stress, HepG2 cells were exposed to a compound known as gramoxone. This compound undergoes a
CosR (Campylobacter oxidative stress regulator; Cj0355c) is an OmpR-type response regulator essential for the viability o
BACKGROUND: Bacillus anthracis produces two catecholate siderophores, petrobactin and bacillibactin, under iron-limite
The scavenging of reactive oxygen species (ROS) within cells is regulated by several interacting factors, including transcri
In Escherichia coli, the SoxR regulon orchestrates genes for defense against certain types of oxidative stress through the
In Escherichia coli, the response to oxidative stress due to elevated levels of superoxide is mediated, in part, by the soxRS
We isolated a promoter that is inducible by paraquat, a superoxide-generating agent, from Escherichia coli using the pro

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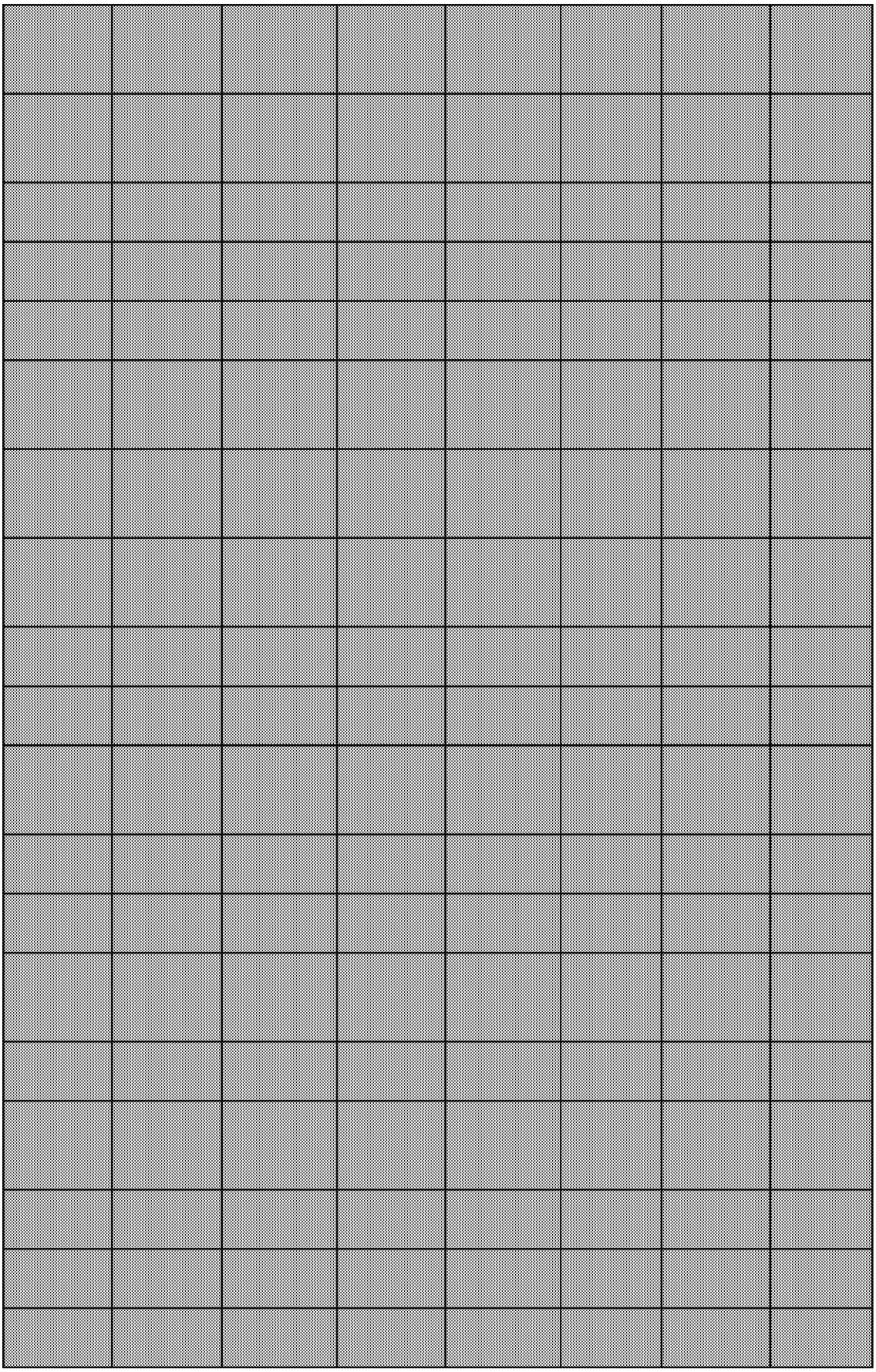

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The Escherichia coli flavohaemoglobin (Hmp) has a globin-like N-terminal domain and a ferredoxin-NADP-reductase-like
Metronidazole (MTZ) is often used in combination therapies to treat infections caused by the gastric pathogen Helicobac
Exposure to methyl viologen in the presence of light facilitates the production of superoxide that gives severe damage or
The transcriptional regulatory protein Rgg coordinates amino acid catabolism and virulence factor expression in Streptoc
Actinobacillus pleuropneumoniae is the etiological agent of porcine pleuropneumonia, an economically important diseas
The heat shock protein HtpG, which is a homolog of HSP90, is essential for basal and acquired thermotolerances in cyanc
Oral streptococci such as Streptococcus gordonii are facultative anaerobes that initiate biofilm formation on tooth surfac
Campylobacter jejuni expresses two hemoglobins, each of which exhibits a heme pocket and structural signatures in com
Iron-sulfur proteins have iron-sulfur clusters as a prosthetic group and are responsible for various cellular processes, incl
Reactive oxygen species (ROS) promote the synthesis of the DNA lesion 8-oxo-G, whose mutagenic effects are counterac
Haemophilus influenzae type b, a causative agent of bacterial sepsis and meningitis in young children, contains a single s
Ferredoxin-NADP+ reductases (FNR) participate in cellular defense against oxidative damage. Escherichia coli mutants de
AIMS: In this study, we investigated the relationship between the ability of lager brewing yeast strains to tolerate oxidati
Chronic infection by alginate-producing (mucoid) Pseudomonas aeruginosa is a leading cause of morbidity among cystic f
Streptococcus pneumoniae was shown to contain two types of superoxide dismutase, MnSOD and FeSOD. Levels of MnS
Previously, we have found that an insertional inactivation of aao(So), a gene encoding L-amino acid oxidase (LAAO), caus

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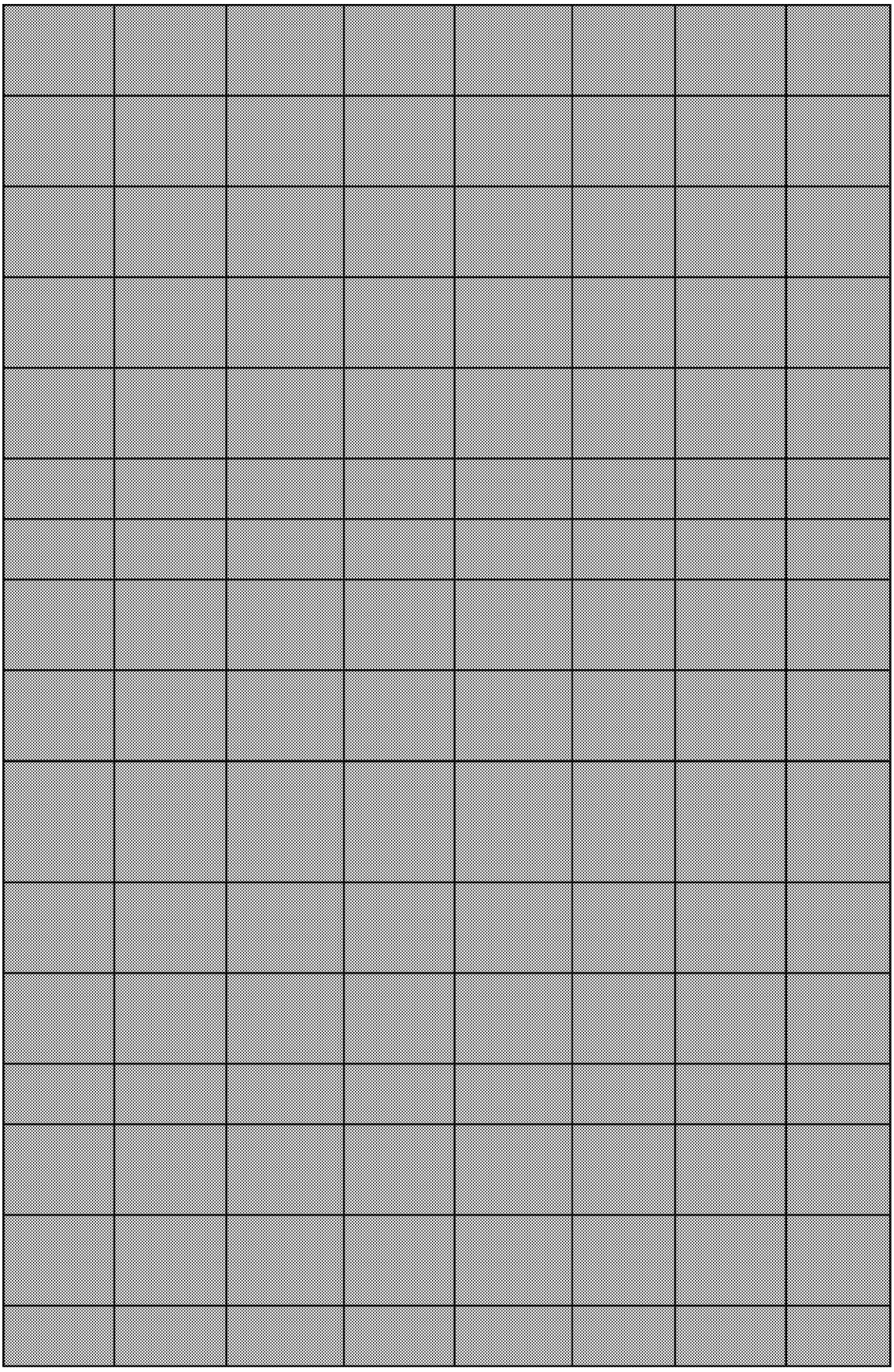

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The phosphoglucomutase (PGM)-encoding gene of Bordetella bronchiseptica is required for lipopolysaccharide (LPS) bios
Campylobacter jejuni is a microaerophilic pathogen representing one of the major causes of bacterial enteritis in humans
Pseudomonas aeruginosa possesses an extensive armament of genes involved in oxidative stress defense, including katB
Helicobacter pylori possesses two distinct thioredoxin proteins (Trx1 and Trx2) which may play important roles in the abi
Streptococcus mutans, a Gram-positive organism, is the primary causative agent in the formation of dental caries in hum
The ctaCIDIEI and ctaCIIDIIEII gene clusters that encode heme-copper cytochrome oxidases have been characterized in th
Francisella tularensis is a facultative intracellular bacterium utilizing macrophages as its primary intracellular habitat and
Isogenic strains of Escherichia coli that were defective in either of the two major aerobic terminal respiratory oxidases (c
The Ras-cyclic AMP pathway is connected to other nutrient-regulated signaling pathways and mediates the global stress
BACKGROUND: Previous work has shown that the hypersaline-adapted archaeon, Halobacterium salinarum NRC-1, is hig
The expression of beta-galactosidase from DNA damage-inducible RNR2-lacZ and RNR3-lacZ fusion constructs was compa
Although oxygen is essential for aerobic organisms, it also forms potentially harmful reactive oxygen species. For its simp
The TenA protein family occurs in prokaryotes, plants and fungi; it has two subfamilies, one (TenA_C) having an active-sit
Sco proteins are found in mitochondria and in a variety of oxidase positive bacteria. Although Sco is required for the form
Peroxiredoxins (Prx) are thiol-dependent antioxidants containing one (1-cysteine [-Cys]) or two (2-Cys) conserved Cys res
A survey of 12 genetically distinct, heat-sensitive mutants of Neurospora revealed three (un-1, un-3, and un-17) that are
The heat shock response is a highly conserved stress response that can transiently inhibit non-heat shock protein gene ex

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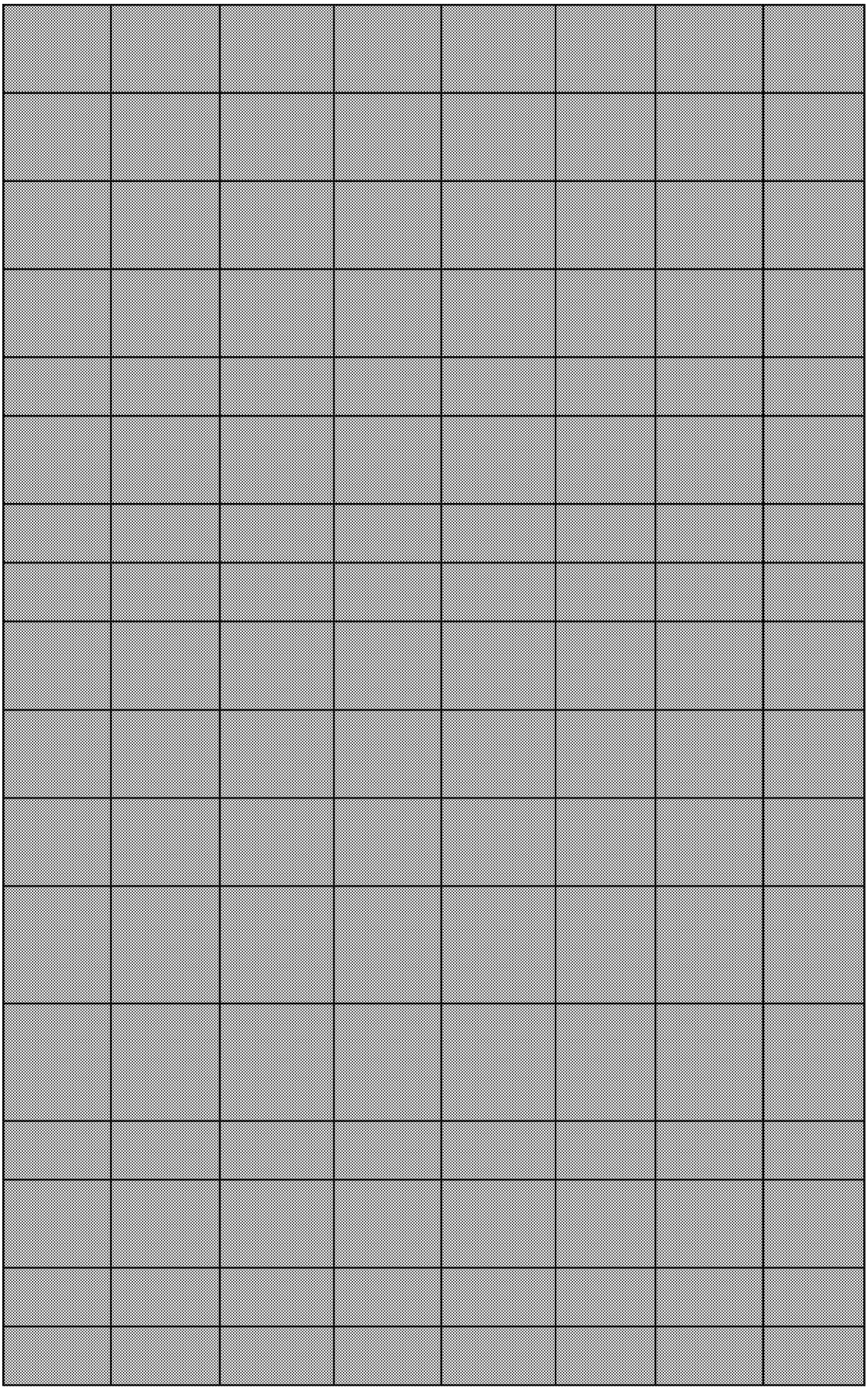
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