Applications of Biomarkers in Toxicology

Essay submitted for partial fulfillment of master degree in clinical toxicology

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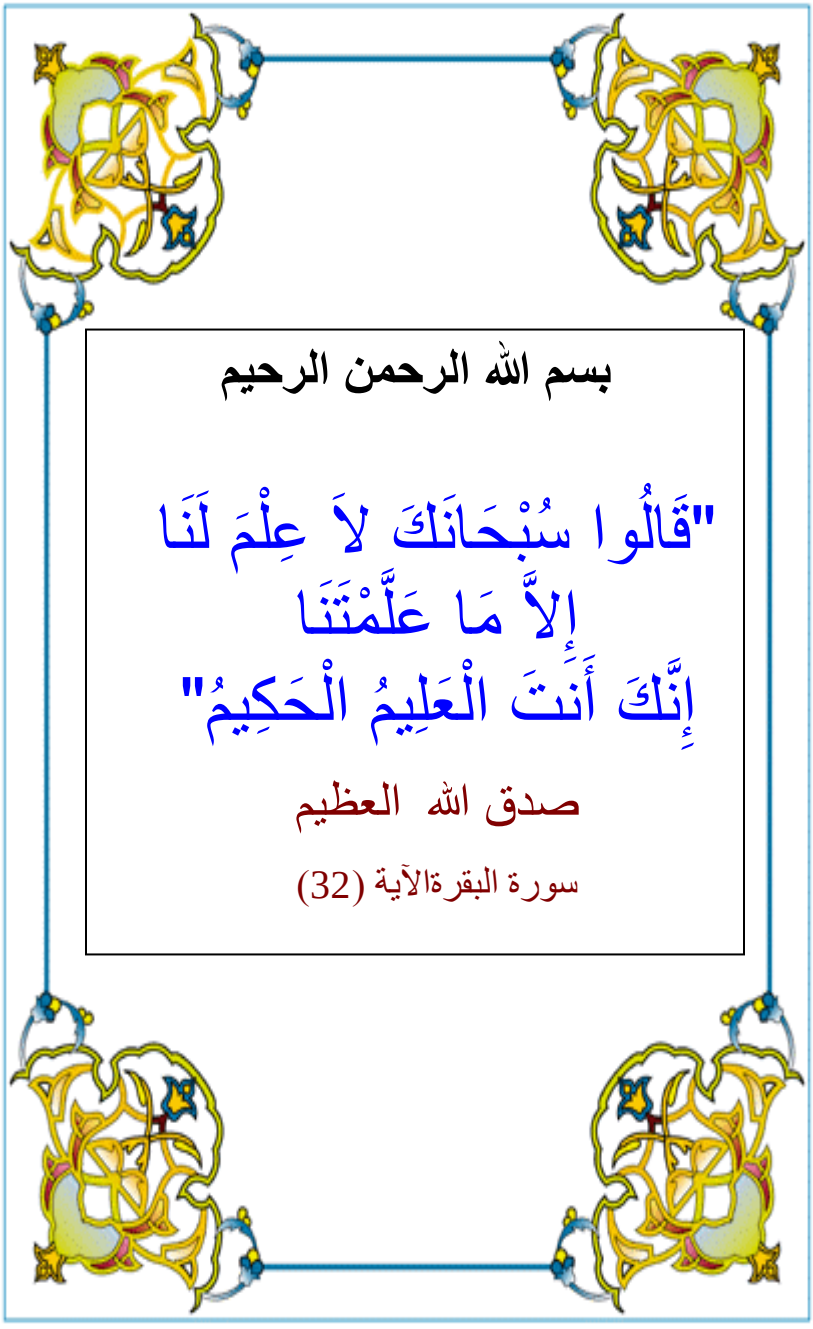

بسم الله الرحمن الرحيم

"قَالُوا سُبْحَانَكَ لاَ عِلْمَ لَنَا
إِلاَّ مَا عَلَّمْتَنَا
إِنَّكَ أَنتَ الْعَلِيمُ الْحَكِيمُ"

صدق الله العظيم

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Reham Abdelnasser Abdelhalim

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List of abbreviations

ABG	Arterial Blood Gases
AchE	Acetylcholinesterase enzyme
ALAD	Delta-aminolevulinic acid dehydratase
ALT	Alanine transaminase
ANP	Atrial Naturetic Peptide
AP	Attributable Proportion
APOE-€4	Apolipoprotein E-€4
ARDS	Adult Respiratory Distress Syndrome
AST	Aspartate aminotransferase
ATCA	2-aminothiazoline-4-carboxylic acid
ATP	Adenosine-5'-triphosphate
BAL	Bronchoalveolar fluid
BG	β-glucuronidase
BuChE	Butyrylcholinesterase
CC16	Clara Cell Protein 16
Cd	Cadmium
CD3,4,8….etc.	Cluster of differentiation protein

CO	Carbon Monoxide
COHb	Carboxyhemoglobin
CRP	C-Reactive Protein
CSF	Cerebrospinal Fluid
CtnI	Cardiac Troponin I
CWA	Chemical Warfare Agents
CWC	Chemical Weapons Convention
CYPs	cytochrome P450
DDT	Dichlorodiphenyltrichloroethane
DILI	Drug Induced Liver Injury
DILIN	Drug Induced Liver Injury Network
DNA	Deoxyribonucleic acid
EBC	Exhaled Breath Condensate
ELISA	Enzyme-linked immunosorbent assay
EP	Epinephrine
ET-1	Endothelin-1
FPN	Ferroportin
gm	Gram

GBM	Glomerular Basement Membrane
GSH	Glutathione
HAVCR1	Hepatitis A virus cellular receptor 1
HBO2	Hyperbaric oxygen
HDL	High Density Lipoprotein
Hg	Mercury
HLA	Human Leukocytic Antigen
HMWP	High Molecular Weight Protein
HPLC	High Performance Liquid Chromatography
HPLC-EC	High-performance liquid chrom-atography with electrochemical detection
IgA	Immunoglobulin A
IgE	Immunoglobulin E
IgG	Immunoglobulin G
IgM	Immunoglobulin M
IL-8	Interlukin-8
IPCS	International Programme for Chemical Safety

KDa	Kilo-Dalton (unified atomic mass unit)
Kim-1	Kidney Injury Molecule 1
L	Leucine
LC-MS	Liquid Chromatography mass spectrometry
LKM	Liver Kidney Microsomes
LMWP	Low Molecular Weight Protein
M	Methionine
MAO	Monoamine Oxidase
MAO-A	Monoamine Oxidase A
MAO-B	Monoamine Oxidase B
mg	Milligram
ml	Milliliter
miRNA	Micro RNA
mRNA	Messenger Ribonucleic acid
NAC	*N*-acetylcysteine
NAG	β-N-acetyl-D-glucosaminidase
NAPQI	N-acetyl-p-benzo-quinone imine

NE	Norepinephrine
NIEHS	National Institute of Environmental Health Sciences
NO	Nitric Oxide
NPY	Neuropeptide Y
NTE	Neuropathy Target Esterase
OC	Organochlorines
OCT	ornithine carbamyltransferase
OP	Organophosphate
OPC	Organophosphorus Compounds
OPIDN	Organophosphate- Induced Delayed Neuropathy
Pb	Lead
PCR	polymerase chain reaction
PhD	Doctor of Philosophy
PON1	Paraoxonase enzyme
Ppm	Part per million
Q	Glutamine
R	Arginine