Potential Biochemical Markers in Egyptian Children with Autistic Disorder

A thesis For Partial Fulfillment of the Requirements
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بسم الله الرحمن الرحيم

قالوا

سبحانك لا علم لنا
إلا ما علمتنا إنك أنت
العليم الحكيم

صدق الله العظيم

سورة البقرة الآية: ٣٢

Dedication

We must love them both, whose opinions we share and whose opinions we reject. For both have labored in the search for truth and have helped us in the finding of it. Finally, Success comes when passion and talent are combined with a heavy dose of perseverance and a bit of luck.

Eman Abd Elfattah Megahed

Declaration

This thesis has not been submitted to this or any other university

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ABBREVIATIONS

AGC	:	Aspartate /glutamate carrier
APA	:	American psychiatric Association.
APOP	:	Advance protein oxidation product.
AS	:	Asperger's syndrome.
ASDs	:	Autism spectrum disorders.
ATP	:	Adenosine triphosphate.
BDNF	:	Brain-derived neurotrophic factor.
CARS	:	Childhood Autism Rating Scale.
CARS2-HF	:	Childhood Autism Rating Scale second edition High-Functioning Version Rating Booklet
CARS2-QPC	:	Childhood Autism Rating Scale second edition Questionnaire of Parent Concerns.
CARS2-ST	:	Childhood Autism Rating Scale second edition Standard Version Rating Booklet.
CAT	:	Catalase.
CML	:	Chronic myeloid leukemia.
DSM-5	:	Diagnostic and Statistical Manual of Mental Disorders, fifth edition (DSM-5).
EAS	:	The Egyptian Autistic Society.
ELISA	:	Enzyme-linked immunosorbent assay.
eNOS	:	Endothelial nitric oxide.
GABA	:	Gamma-amino butyric acid.
GPX	:	Glutathione peroxidase.
GSH	:	Glutathione reductase.

GWAS	:	Genome-wide association studies.
HFA	:	High function autism.
iNOS	:	Inducible nitric oxide.
IP	:	Isoprostane.
LFA	:	Low function autism.
MT	:	Metallothionein.
NAA	:	N-acetyl aspartate.
NCCM	:	National Council for Motherhood and Childhood
nNOS	:	Neuronal nitric oxide.
NO	:	Nitric oxide.
NOS	:	Nitric oxide synthase.
PDD-NOS	:	Pervasive developmental disorder–not otherwise specified.
PUFAs	:	Polyunsaturated fatty acids.
RNS	:	Reactive nitrogen species.
SNPs	:	Single nucleotide polymorphisms.
SOD	:	Superoxide dismutase.
Zn	:	Zinc.
ROS	:	Reactive oxygen species.
VPA	:	Valporic acid.
Cu	:	Copper.
CNS	:	Central nervous system.
Hg	:	Mercury.
ADHD	:	Attention deficient hyper active disorder.
TMB	:	Tetra methyl benzadine.

HRP	:	Horseradish peroxidase.
NIMH	:	National institute of mental health.
ID	:	Iron deficiency.
TIBC	:	Total iron binding capacity.
NGF	:	Neurotrophin growth factor.