



***A Study of Neurochemical Changes Associated with
Childhood Autism and Atypical Autism
(Comparative Study)***

*Thesis submitted for fulfillment of the Ph.D degree in childhood studies
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ARABIC SUMMARY	

List of Abbreviations

24IU	: Twenty four international unit.
5HT	: Serotonin.
5HT2Ar	: Serotonin type 2A receptor.
5HTR2A	: Reduced serotonin receptor 2A.
5HTt	: Serotonin transporter.
5HTT	: Serotonin transporter.
ABA	: Applied Behavioural Analysis.
ADHD	: Attention deficit/hyperactivity disorder.
ADI-R	: Autism diagnostic interview-revised.
ADOS	: Autism Diagnostic Observation Schedule (ADOS).
AF	: Adaptive function.
AMPA	: α -amino-3-hydroxyl-5-methyl-4-isoxazolepropionate.
ASD	: Autistic spectrum disorder.
ATP	: Adenosine 5 triphosphate.
AVB	: Applied Verbal Behaviour.
AVP	: Arginine vasopressin.
AVPR1	: Arginine vasopressin type one receptor.
AVPR1a	: Vasopressin type one A receptor.
AVPR1b	: Vasopressin type one B receptor.

B. fragile s	: Bacteroides fragilis.
BA	: Broca's area.
BAP	: Broad autism phenotype.
BBB	: Blood brain barrier.
BDN	: Brain derived neurotrophic factor.
C4B	: Component 4 of blood group B.
CAM	: Complementary and alternative treatment.
CARS	: Childhood Autism Rating Scale.
CDC	: US Centers for Disease Control and Prevention.
CNS	: Central nervous system.
CSF	: Cerebrospinal fluid.
CVO	: Circumventricular organs.
D1	: Dopamine receptor type 1.
D2	: Dopamine receptor type 2.
D3	: Dopamine receptor type 3.
D4	: Dopamine receptor type 4.
D5	: Dopamine receptor type 5.
DA	: Dopamine.
DAT	: Dopamine transporter.
DMSA	: Dimercaptosuccinic acid.
DNA	: Deoxyribonucleic acid

DRN	: Dorsal Raphe Nucleus.
DSM-5	: Diagnostic and Statistical Manual, Fifth Edition.
DSM-IV	: Diagnostic and Statistical Manual of Mental Disorders-Fourth Edition
DSM-IV-TR	: Diagnostic and Statistical Manual in the Current Test, Revised, Fourth Edition.
DPT	: Diphtheria, Tetanus and Pertussis vaccine.
DTwP	: Diphtheria, Tetanus and whooping Pertussis vaccine.
DTT	: Discrete Trial Training.
E/ I	: Excitatory/inhibitory.
EEG	: Electro-encephalogram.
ELISA	: Enzyme-Linked Immunosorbent Assay.
EMG	: Electromyography.
EPA	: Environmental Protection Agency.
FDA	: Food and Drug Administration.
FISH	: Fluorescence in situ hybridization.
GABA	: Gamma Amino Butaric Acid.
GABARγ1	: Gama Amino Butaric Acid receptor alpha type 1.
GAD	: Glutamic acid decarboxylase.
GARS	: Gilliam Autism Rating Scale.
GH	: Growth hormone.
GI	: Gastrointestinal.

GIT	: Gastro-intestinal tract.
GLU	: Glutamate.
GluR1-4	: Glutamate receptors type 1-4.
GluR6-7	: Gutamate receptors 6-7.
GM-CSF	: Granulocyte macrophage colony-stimulating factor.
GSH	: Glutathione.
GSH-PX	: Glutathione peroxidase.
GSSG	: Glutathione oxidized disulfide.
GSSG: GSH	: Glutathione oxidized disulfide: Glutathion S transferase
GST	: Glutathione S. transferase.
GTP	: Trimeric G-proteins
HBOT	: Hyperbaric Oxygen treatment.
Hep B	: Hepatitis B vaccine.
HG	: Mercury.
HHG	: Mercury in hair.
Hib	: Haemophilus influenza type b vaccine.
HLA	: Human leukocyte antigen.
HPA	: Hypothalamic pituitary adrenal axis.
ICD-10	: Tenth revision of the World Health Organization International Statistical of diseases and Related Health Problems.
IEP	: Individual Educational Plan.

IFNG-R1	: Interferon gamma receptor-1.
IFNG-R2	: Interferon gamma receptor-2.
IFN-γ	: interferon-gamma.
IGG	: Immunoglobulin G.
IL-1	: interleukin 1.
IL-10	: Interleukin 10.
IL-12	: Interleukin 12.
IL-1β	: interleukin one beta.
IL-2	: interleukin 2.
IL-4	: Interleukin 4.
IL-5	: interleukin 5.
IL-6	: Interleukin-6.
IL-8	: interleukin 8.
INF-1β	: Interleukin-1 beta.
IQ	: Intelligent quotient.
K⁺	: Potassium Channels.
KA1	: Kainate receptor type 1.
KA2	: Kainate receptor type 2.
KARs	: kainate receptors.
LCLs	: lymphoblastoid cell lines.
LPS	: Lipopolysaccharides.

MDA	: Malondialdehyde.
MECP2	: Methyl-CpG binding protein 2.
MIA	: Maternal immune activation.
MMR	: Measles, Mumps, Rubella vaccine.
mRNA	: Messenger ribonucleic acid.
MRI	: Magnetic Resonance Image.
MSM	: Methylsulfonylmethane.
mtDNA	: Mitochondrial deoxyribonucleic acid.
MT	: Metallothionine.
MZ	: Monozygotic Twins.
NAD+	: Nicotinamide adenine dinucleotide.
NADH	: Nicotinamide adenine dinucleotide hydrate.
NGF	: Nerve growth factor.
NHANES	: National Health and Nutritional Examination Survey.
NIDS	: Neuro-immune dysfunction syndrome.
NMDA	: N-methyl-D-aspartate.
NO	: Nitric oxide.
nonREM	: non rapid eye movement.
NT-3	: Neurotrophin 3.
NT-4	: Neurotrophin 4.
NTR	: Neurotrophin receptor.

OCD	: Obsessive compulsive disorder.
ODD	: Oppositional Defiant Disorder.
OP	: Organophosphorus.
OPN	: Osteopontin.
OT	: Oxytocin.
OT	: Occupational therapy.
OTR	: Oxytocin receptor.
PDD	: Pervasive developmental disorder.
PDD-NOS	: Pervasive developmental disorder not otherwise specified.
PET	: Positron Emission Tomography.
PFC	: prefrontal cortex.
PT	: Physical therapy.
PVN	: Paraventricular nucleus.
REM	: Rapid Eye Movement.
RhoD	: Rhesus negative D immune globulin.
ROS	: Reactive oxygen species.
ROS/RNS	: Reactive oxygen species/reactive nitrogen species.
RNA	: Ribonucleic acid.
SAH	: S-adenosyl homocysteine.
SAM	: S-adenosylmethionine.
SOD	: superoxide dismutase.

SPECT	: Single Photon Emission Computed Tomography.
SPF	: Sun protection factor.
SSRI	: Specific serotonin reuptake inhibitors.
ST	: Social status.
STX1	: Syntaxin 1.
TEACCH	: Treatment and Education of Autistic and Related Communication Handicapped Children.
Th1	: T helper 1.
Th2	: T helper 2.
Th1/1h2	: T helper 1/ T helper 2 ratio.
TNF-R1	: TNF receptor type.
TNF-R2	: TNF receptor type-2.
TNF-α	: Tumor necrosis factor- alpha.
TRI	: Toxic Release Inventory.
Trk A	: Tropomyosin-related kinase A.
TrkB	: Tropomyosin-related kinase B.
TrkC	: Tropomyosin-related kinase C.
U\$: United States dollars.
UK	: United Kingdom.
USA	: United States of America.
UVB	: Ultraviolet B.

V2 : Vasopressin receptors type two.
VABS : Vineland Adaptive Behaviour Scale.
VEGF : Vascular endothelial growth factor.
Zn : Zinc.

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