

Diagnostic Value of Interleukin-4 in Exhaled Breath Condensate as an Inflammatory Marker of Asthma in Children

Thesis

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in Pediatrics*

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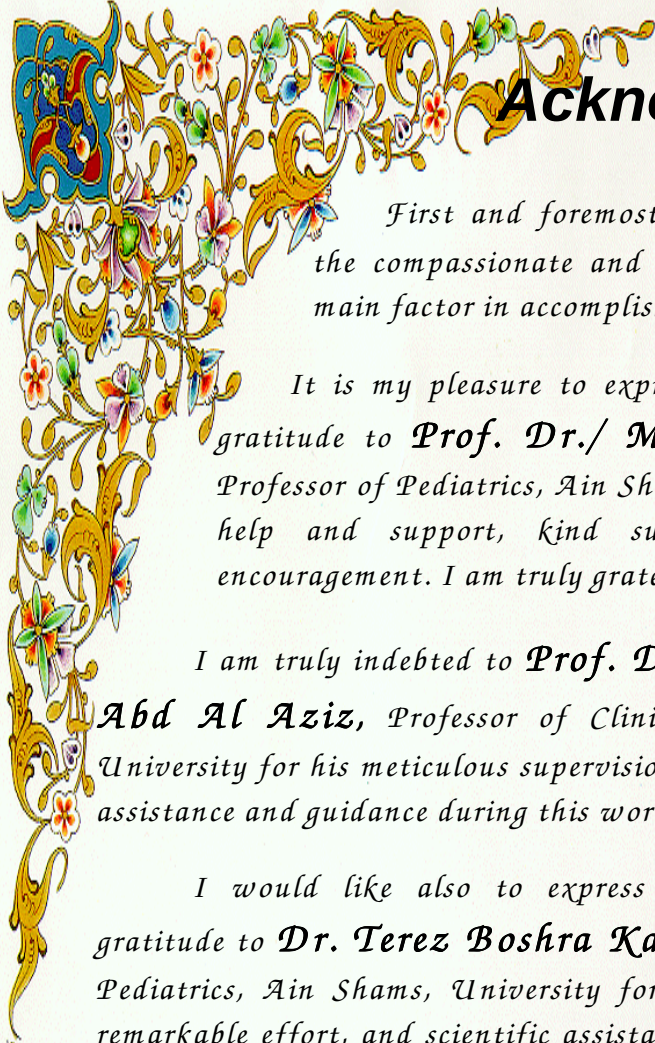
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(وَفِي أَنْفُسِكُمْ أَفَلَا تُبْصَرُونَ)

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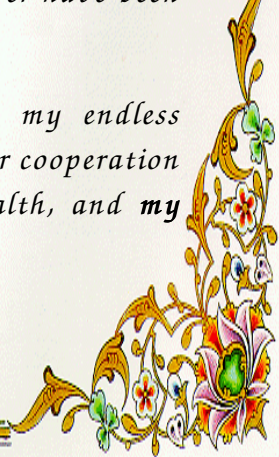
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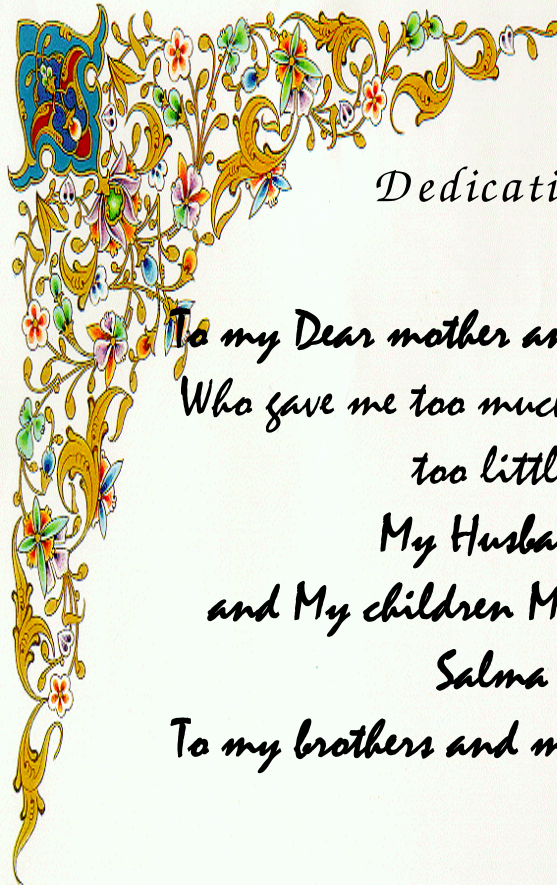
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Dedication

*To my Dear mother and my (father)
Who gave me too much and received
too little
My Husband
and My children Mohammed &
Salma
To my brothers and my great sister.*



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List of Abbreviations

ADAM33		Adesintergrin and metalloproteinase 33
AHR		Airway hyperresponsiveness
APC	.....	Antigen presenting cells
AUC	.....	Area under the curve
BAL	.....	Bronchoalveolar lavage
BHR	.....	Bronchial hyperresponsiveness
BM	.....	Basement membrane
COPD	.....	Chronic obstructive pulmonary disease
DC	.....	Dendritic cell
DEP	.....	Diesel Exhaust particles
DPP10	.....	Dipeptidyl peptidase 10
EBC	.....	Exhaled breath condensate
EB-IL4	.....	Exhaled breath interleukin-
ECM	.....	Extracellular matrix
eCO	.....	Exhaled carbon monoxide
eNo	.....	Exhaled nitric oxide
EPX	.....	Eosinophil peroxidase
ETS	.....	Environmental tobacco smoke
ERK	.....	Extracellular signal-related kinases
ECP	.....	Eosinophil cationic protein

FDA The Food and Drug Administration
FEV1..... Forced expiratory volume in 1 second
FH Family history
FVC Forced vital capacity
GINA Global Initiative for Asthma
GM-CSF Granulocyte macrophage colony stimulating factor
GPRA G-protein related receptor for asthma
Hb Hemoglobin
HSP Heat shock proteins
ICS Inhaled corticosteroids
IgE Immunoglobulin E
IL Interleukin
IL4R α Interleukin 4 receptor alpha
ILR1A..... Interleukin 1 receptor antagonist
IRS-2..... Insulin receptor substrate-2
JAK..... Janus kinases
LARs..... Late asthmatic reactions
LTs..... Leukotrienes
MAPK Mitogen-activated protein kinases
MDC Macrophage-derived chemokines

NF-*Kb* Nuclear factor Kb
NFAT Nuclear factor of activated T cells
NK Natural killer
NO Nitric oxide
O₃ Ozone
PEEF Peak end expiratory flow
PFT Pulmonary function test
PG Prostaglandin
PHF11 Plant homeodomain zinc finger protein 11
PKR Protein kinase receptors
PM Particulate matters
RAST Radioallergosorbent test
ROC Receiver operating characteristic curve
RSV Respiratory syncytial virus
SCF Stem cell factor
SOCS Suppressor of cytokine signaling
SP Stress protein
SPINK5 Serine protease inhibitor Kazal type 5
STAT Signal transducer and activator of transcription
TARC Thymus and activation regulated chemokines
TCR T-cell receptor

Th..... T-helper
TLR3 Toll lik receptor protein 3
TLC Total leucocytic count
TNF..... Tumor necrosis factor
TS..... Tobacco smoke
VC Vital capacity
VEGF..... Vascular endothelial growth factor
WHO World Health Organization

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