



**Value of Neutrophil Gelatinase Associated
Lipocalin as a Biomarker of Renal Involvement
and Activity in Pediatric Patients with Lupus
Nephritis**

Thesis

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By

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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قَالَ

سَبِّحَانِكَ لَا تَعْلَمُ لَنَا
إِلَّا مَا عَلَّمْتَنَا إِنَّكَ أَنْتَ
الْعَلِيمُ الْعَظِيمُ

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List of Abbreviations

Abb.	Full term
24p3R	24p3 receptor
ABPM	Ambulatory blood pressure monitoring
ACR	American College of Rheumatology
AKI	Acute kidney injury
AI	Activity Index
ANA	Anti-Nuclear Antibodies
ANCA	Antineutrophil cytoplasmic antibodies
anti-dsDNA	Anti-double stranded DNA
Ao-SLE	Adult-onset
AZA	Azathioprine
CBC	Complete blood count
CIC	Circulating immune complexes
CKD	Chronic kidney disease
CI	Chronicity Index
cSLE	Childhood Systemic Lupus Erythematosus
DMARDs	Disease-modifying antirheumatic drugs
EC4d	Erythrocyte-bound C4d
ESRD	End-stage renal disease
GFR	Glomerular filtration rate
HCQ	Hydroxychloroquine
HNL	Human neutrophil lipocalin
HRP	Horseradish Peroxidase
IFN-gamma	Interferon gamma
IkB-zeta	Inhibitor of kappaB-zeta
IL-4	Interleukin-4
IRB	Institutional Review Board
ISN	International Society of Nephrology
JIA	Juvenile idiopathic arthritis
Jo-SLE	Juvenile-onset
jSLE	Juvenile-onset systemic lupus erythematosus

List of Abbreviations *(Cont...)*

Abb.	Full term
LN	Lupus nephritis
MH	Masked hypertension
MMP9	Matrix metalloproteinase-9
MSFI	Migration stimulating factor inhibitor
MTX	Methotrexate
MUCH	Masked uncontrolled hypertension
NF-κB	Nuclear factor-κB
NGAL	Neutrophil gelatinase associated lipocalin
NIH	National institutes of health
OPN N-half	Osteopontin N-half
pNGAL	Plasma NGAL
RC4d	Reticulocyte-bound C4d
ROS	Reactive oxygen species
RPS	Renal Pathology Society
RPS	Renal Pathology Society
SLE	Systemic lupus erythematosus
SLEDAI	Systemic Lupus Erythematosus Disease Activity Index
SLICC	Systemic Lupus International Collaborating Clinics
SV-40	Simian virus
SVCAM	Soluble vascular cell adhesion molecule
TGF-beta	Transforming growth factor-beta
TLR	Toll-like receptors
TNF	Tumor necrosis factor
UNGAL	Urinary neutrophil gelatinase-associated lipocalin
WCH	White coat hypertension

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