



**Evaluation of MicroRNA-122 as A  
Non-invasive Diagnostic Biomarker  
For Non-Alcoholic Fatty Liver Disease  
and NASH related Cirrhosis**

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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

# قَالَ لَوْلَا

لَسَبَّحْتَكَ يَا مُعَلِّمَ لَنَا  
إِلَّا مَا عَلَّمْتَنَا إِنَّكَ أَنْتَ  
الْعَلِيمُ الْعَظِيمُ

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# *Dedication*

*Every challenging work needs guidance & support especially from those who are very close to our heart, I dedicate my humble effort to my sweet and loving Father, Mother, Wife, Sister & all my family whose affection, love, encouragement & prayers helped me to get such success and honor.*



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# List of Abbreviations

Abb.	Full term
AASLD.....	American Association for the Study of Liver Diseases
ANI .....	Alcoholic liver disease to NAFLD index
BMI.....	Body mass index
CCL2.....	C-C Motif Chemokine Ligand 2
cfRNA .....	Cell-free RNA
chREBP .....	Carbohydrate-responsive element-binding protein
CK18.....	Cytokeratin-18
CT .....	Computed tomography
DAGs .....	Diacyl glycerols
FATPs.....	Fatty acid transport proteins
HELLP .....	Hemolytic anemia, elevated liver enzymes, low platelet count
HIF1a .....	Hypoxia-Inducible Factor 1-a
HNF6.....	Hepatocyte nuclear factor 6
IL-1 $\beta$ .....	Interleukin-1 $\beta$
IL-6 .....	Interleukin-6
MAPK1 .....	Mitogen-Activated Protein Kinase 1
MCV.....	Mean corpuscular volume
miRNAs .....	MicroRNAs
MRI.....	Magnetic resonance imaging
MRS.....	Magnetic resonance spectroscopy
NAFL.....	Nonalcoholic fatty liver
NAFLD .....	Non-alcoholic fatty liver disease
NAS .....	NAFLD activity score
NASH .....	Nonalcoholic steatohepatitis