

## **ABBREVIATIONS, NOTATIONS & NOMENCLATURES**

16s rDNA: 16s ribosomal DNA

AA: Amino acids

ADIPOR: Adiponectin receptors

AIEC: Adherent invasive E. coli

AMPK: Adenosine monophosphate-activated protein kinase

API: Active pharmaceutical ingredient

ATCC: American type culture collection

AUC<sub>glucose</sub>: Area under curve for glucose

BcoA: Butyryl coA/acetate CoA

BIR: Baculovirus inhibitors repeat

BMI: Body mass index

Bps: Base pairs

BS: Broad spectrum

CARD: Caspase recruitment domain

CD: Cluster of differentiation

CD: Cohn's disease

CD: Control diet

CFU: Colony forming units

CHO: Carbohydrate

CLRs: C-type lectin receptors

Conc.: Concentration

CPCSEA: Committee of the purpose of control and supervision of experiments on animals

CRP: C-reactive proteins

CS: Chitosan

Ct: Cycle threshold

DAMPs: Danger associated molecular patterns

DPP-4: Dipeptide peptidase-4

EE: Entrapment efficiency

EL: Eudragit L100-55  
ES: Eudragit S100  
FFARs: Free fatty acids receptors  
FFAs: Free fatty acids  
FIAF: Fasting-induced adipocyte factor  
FXR: Farnesoid X receptor  
G-CSF: Granulocyte-colony stimulating factor  
GLP-1: Glucagon like peptide-1  
GLUT4: Glucose transporter 4  
GN: Gram negative  
GP: Gram positive  
GPCRs: G-protein coupled receptors  
H&E: Hematoxylin and eosin  
HCl: Hydrochloric acid  
HFCS: High fructose corn syrup  
HFD: High fat diet  
HPLC: High performance liquid chromatography  
HPMC: Hydroxypropyl methyl cellulose  
HSD: High sucrose diet  
HSL: Hormone-sensitive lipase  
HSPs: Heat shock proteins  
IBD: Inflammatory bowel diseases  
iE-DAP: D- -glutamyl-meso-di-amino pimelic acids  
IDF: International diabetes federation  
IKK : Inhibitor of NF- B kinase subunit  
IL-6: Interleukin-6  
iNOS: Inducible nitric oxide  
INS: Insulin  
IR: Insulin resistance  
IRAK: Interleukin-1 receptor-associated kinase 1  
IRS: Insulin receptor signaling

JAK2: Janus kinase 2  
KOH: Potassium hydroxide  
LAL: Limulus ameobocyte lysate  
LB: Luria broth  
LPS: Lipopolysaccharides  
LRR: Leucine-rich repeat  
LXR: Liver X receptor  
MAPK: Mitogen activated protein kinase  
MCP-1: Monocytes chemoattractant protein 1  
MDP: Muramyl di-peptide  
MIC: Minimum inhibitory concentration  
MRS: De man Rogosa Sharp  
MTCC: Microbial type culture collection  
MyD88: Myeloid differentiation primary response 88  
Na<sub>2</sub>HPO<sub>4</sub>: Di sodium hydrogen phosphate  
NaCl: Sodium Chloride  
NAFLD: Non-alcoholic fatty liver disease  
NCDC: National collection of dairy culture  
NF- B: Nuclear factor-kappa B  
NLRs: NOD like receptors  
NOD: Nucleotide-binding oligomerization domain  
O/W: Oil in water  
OD: Optical density  
OGTT: Oral glucose tolerance test  
PAMPs: Pathogen-associated molecular patterns  
PGC-1 : Peroxisome proliferator-activated Receptor gamma co activator-alpha  
PGN: Peptidoglycan  
PLGA: Poly (lactic-co-glycolic acid)  
PPARs: Peroxisome proliferator-activated receptors  
PRRs: Pattern recognition receptors  
PYD: Pyrin domain

PYY: Neuropeptides YY  
qPCR: Quantitative PCR  
RIPK2: Receptor-interacting serine/threonine-protein kinase 2  
RLRs: Retinoic acid-inducible gene (RIG)-I-like receptors  
RPM: Revolutions per minute  
RT: Reverse transcription  
SCFAs: Short chain fatty acids  
SD: Standard deviation  
SEM: Scanning electron microscopy  
SGOT: Serum Glutamate Oxaloacetate Transaminase  
SGPT: Serum Glutamate Pyruvate Transaminase  
SI: Small intestine  
SOS-3: Suppressor of cytokine signaling 3  
Span 80: Sorbitan sesquioleate 80  
STAT3: Signal transducer and activator of transcription 3  
T2D: Type 2 diabetes  
TC: Total cholesterol  
TCA: Tricarboxylic acid  
TG: Triglycerides  
TLRs: Toll like receptors  
TNF- $\alpha$ : Tumor necrosis factor alpha  
TRAF-6: TNF receptor associated factor 6  
T<sub>reg</sub> cells: T regulatory cells  
UC: Ulcerative colitis  
USFDA: US Food and Drug administration  
VLDL: Very low density lipoprotein