

Appendix-I: Abbreviation used

%F	Oral bioavailability
ACN	Acetonitrile
AD	Autoimmune disease
ADP	Adenosine diphosphate
ALK5	Anaplastic lymphoma kinase 5
ALL	Acute lymphocytic leukaemia
ALP	Alkaline phosphatase
ALT	Alanine Aminotransferase
AML	Acute myeloid leukaemia
Asp	Aspartic acid
AST	Aspartate aminotransferase
ATP	Adenosine triphosphate
AUC	Area under curve
Br	Bromine
BTK	Bruton's tyrosine kinase
CCl ₄	Carbon tetrachloride
CD ₃ OD	Deuterated methanol
CDCl ₃	Deuterated chloroform
CDK	Cyclin dependent kinases
CFA	Complete Freund's adjuvant
CIA	Collagen induced arthritis
Cl	Clearance
CLL	Chronic lymphocytic leukaemia
C _{max}	Maximum (or peak) serum concentration of a drug
CML	Chronic myeloid leukaemia

CNS	Central nervous system
CO ₂	Carbon dioxide
COPD	Chronic inflammatory lung disease
COX	Cyclooxygenase
CVD	Cardio vascular diseases
CYP	Cytochromes
DCM	Dichloromethane
DIPEA	<i>N,N</i> -Diisopropylethylamine
DMARDs	Diseases modifying anti-rheumatic drugs
DMF	Dimethylformamide
DMSO	Dimethyl sulfoxide
DNA	Deoxyribonucleic acid
DPP4	Dipeptidyl peptidase IV
DPPH	1,1-diphenyl-2-picrylhydrazyl
EDTA	Ethylenediaminetetraacetic acid
EGFR	Epidermal growth factor receptor
ESI-MS	Electrospray ionization mass spectrometry
EtOAc	Ethyl acetate
FadD32	Fatty acid degradation protein D32
FDA	Food and Drug Administration
G1	Growth 1
G2	Growth 2
GHMP	Galactokinase, Homoserine kinase, Mevalonate, and Phosphomevalonate kinase
GRP1	General Receptor for Phosphoinositides-1.
h	Hour

H ₂ SO ₄	Sulfuric acid
HCl	Hydrochloric acid
HER2	Human epidermal growth factor receptor 2
hERG	Human Ether-à-go-go-related gene
HRMS	High-resolution mass spectrometry
HRP	Streptavidin-Horseradish Peroxidase
IBD	Inflammatory bowel diseases
IC ₅₀	Half maximal inhibitory concentration
IFA	Incomplete Freund's adjuvant
IR	Infrared spectroscopy
<i>J</i>	Coupling constant
JAK	Janus kinase
K	Potassium
K ₂ CO ₃	Potassium carbonate
KHCO ₃	Potassium bicarbonate
KOAc	Potassium acetate
KOH	Potassium hydroxide
LC-MS	Liquid chromatography–mass spectrometry
mAbs	Monoclonal antibodies
MAP	Mitogen-activated protein kinases
MAPK	Mitogen-activated protein kinase
MCF-7	Michigan Cancer Foundation-7
MEM	Minimum essential medium
MeOH	Methanol
Met	Methionine
MHz	Megahertz

MIC	Minimum inhibitory concentration
min	Minute
mmol	Milimoles
MS	Multiple sclerosis
m-TOR	Mammalian target of rapamycin
NADPH	Nicotinamide adenine dinucleotide phosphate
NaH	Sodium hydride
NaHCO ₃	Sodium bicarbonate
NaOH	Sodium hydroxide
NaOMe	Sodium methoxide
NBS	<i>N</i> -Bromosuccinimide
ND	Not detected
NIS	<i>N</i> -Iodosuccinimide
nM	Nano molar
NMR	Nuclear magnetic resonance
NOSH	Nitric oxide (NO) and hydrogen sulfide (H ₂ S) releasing agents
NSAIDs	Non-steroidal anti-inflammatory drugs
OA	Osteoarthritis
°C	Degree Celsius
PD	Pharmacodynamics
PDB ID	Protein data bank identification code
PdCl ₂ (PPh ₃) ₂	Bis(triphenylphosphine) palladium dichloride
PDE4	Phosphodiesterase-4
PDGFR	Platelet-derived growth factor receptor
PDK ₁	3-phosphoinositide-dependent protein kinase-1

PI3K	Phosphoinositide 3-kinases
PIP ₂	Phosphatidylinositol (4,5)-bisphosphate
PIP ₃	Phosphatidylinositol (3,4,5)-trisphosphate
PK	Pharmacokinetic
PKB	Protein kinase B
POCl ₃	Phosphorus oxychloride
ppm	Parts per million
PTEN	Phosphatase and tensin homolog
RA	Rheumatoid Arthritis
Rb	Rubidium
RBC	Red blood cells
RE	Rubidium efflux rate
ROK	Repressor, Open reading frame kinase
RTK	Receptor tyrosine kinase
SAR	Structure activity relationship
SCID	Severe combined immunodeficiency
SD	Standard deviation
SEM	Standard error of the mean
SK	Sphingosine kinases
SLE	Systemic lupus erythematosus
SnCl ₂	Stannous chloride
SYK	Spleen tyrosine kinase
t _{1/2}	Half life
T2D	Type 2 diabetes
TBILI	Total bilirubin
TBST	Tris-buffered saline with 0.1% Tween® 20

t-BuOK	Potassium tert-butoxide
TEA	Triethylamine
THF	Tetrahydrofuran
TK	Tyrosine kinase
TLC	Thin layer chromatography
T _{max}	Time for maximum (or peak) serum concentration of a drug
TMB	3,3',5,5'-Tetramethylbenzidine
TMD-8	Tokyo Medical and Dental university 8
TMS	Tetramethylsilane
TNF	Tumor necrosis factor
Trp	Tryptophan
UPLC	Ultra-performance liquid chromatography
UTI	Urinary tract infection
UV	Ultraviolet
Val	Valine
VEGF	Vascular endothelial growth factor
WBC	White blood cell
WHO	World Health Organization
μl	Micro litre
δ	Chemical shifts
λ _{max}	Wavelength of maximum absorbance
μM	Micro molar