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List of Abbreviations

ALL: Acute Lymphoblastic Leukemia

ANOVA: Analysis of Variance

APS: Ammonium Persulfate

ATF-MGL-FP: Amino-Terminal Fragment-Methionine Gamma-Lyase-Fusion Protein

ATCC: American Type Culture Collection

BCR-ABL: Breakpoint Cluster Region-Abelson Murine Leukemia Viral Oncogene Homolog

BLAST: Basic Local Alignment Search Tool

B.O.D.: Biochemical Oxygen Demand

BSA: Bovine Serum Albumin

BCNU: Bis-Chloroethylnitrosourea

CAGR: Compound Annual Growth Rate

CCD: Central Composite Design

CDKN2A: Cyclin-Dependent Kinase Inhibitor 2A

CV: Column Volume

DEAE: Diethylaminoethyl

DMEM: Dulbecco's Modified Eagle Medium

dNTPs: Deoxynucleotide Triphosphates

DMSO: Dimethyl Sulfoxide

DNA: Deoxyribonucleic Acid

DNMT: DNA Methyltransferase

DTT: Dithiothreitol

DTNB: 5,5'-Dithiobis-(2-nitrobenzoic acid)

EDTA: Ethylenediaminetetraacetic Acid

FBS: Fetal Bovine Serum

FDA: Food and Drug Administration

FP: Fusion Protein

FPLC: Fast Protein Liquid Chromatography

5-FU: 5-Fluorouracil

GEMM: Genetically Engineered Mouse Model

GLOBOCAN: Global Cancer Observatory

HCC: Hepatocellular Carcinoma

Hcy: Homocysteine

HCT-116: Human Colon Tumor-116 (Colon Cancer Cell Line)

HepG2: Hepatoma G2 (Liver Cancer Cell Line)

HIV: Human Immunodeficiency Virus

IC_{50}: Half-Maximal Inhibitory Concentration

IGF2: Insulin-Like Growth Factor 2

ITS: Internal Transcribed Spacer

LPCB: Lactophenol Cotton Blue

MBP: Methyl-Binding Protein

MBTH: 3-Methyl-2-benzothiazolonehydrazone

MCF-7: Michigan Cancer Foundation-7 (Breast Cancer Cell Line)

$MgCl_2$: Magnesium Chloride

MGL: Methionine Gamma-Lyase

miRNA: MicroRNA

MMP: Matrix Metalloproteinase

MRI: Magnetic Resonance Imaging

MTT: 3-(4,5-Dimethylthiazol-2-yl)-2,5-Diphenyltetrazolium Bromide

NADH: Nicotinamide Adenine Dinucleotide

NaCl: Sodium Chloride

NaOH: Sodium Hydroxide

NCCS: National Centre for Cell Science

NHL: Non-Hodgkin Lymphoma

OFAT: One-Factor-At-a-Time

PBD: Plackett-Burman Design

PBS: Phosphate-Buffered Saline

PCR: Polymerase Chain Reaction

PDA: Potato Dextrose Agar

PDX: Patient-Derived Xenograft

PEGylation: Polyethylene Glycol Conjugation

PET: Positron Emission Tomography

PI: Propidium Iodide

PLP: Pyridoxal 5'-Phosphate

PMSF: Phenylmethylsulfonyl Fluoride

PpLM: Pseudomonas putida L-Methionase

PS: Phosphatidylserine

PSA: Prostate-Specific Antigen

qPCR: Quantitative Polymerase Chain Reaction

RASSF1: Ras Association Domain Family Member 1

RB1: Retinoblastoma 1

RLGS: Restriction Landmark Genomic Scanning

ROS: Reactive Oxygen Species

RPMI-1640: Roswell Park Memorial Institute-1640

rMETase: Recombinant Methioninase

RSM: Response Surface Methodology

SAM: S-Adenosylmethionine

SD: Standard Deviation

SDS: Sodium Dodecyl Sulfate

SDS-PAGE: Sodium Dodecyl Sulfate-Polyacrylamide Gel Electrophoresis

SEC: Size-Exclusion Chromatography

SeMet: Selenomethionine

SGLT: Sodium-Glucose Linked Transporter

SRB: Sulforhodamine B

TEMED: N,N,N',N'-Tetramethylethylenediamine

tHCY: Total Homocysteine

TIMP: Tissue Inhibitor of Metalloproteinase

TNB: 2-Nitro-5-Thiobenzoate

Tris-HCl: Tris-Hydrochloride

TUNEL: Terminal deoxynucleotidyl transferase dUTP Nick End Labeling

U/mL: Units per Milliliter

UHRF1: Ubiquitin-like with PHD and RING Finger Domains 1

uPA: Urokinase Plasminogen Activator

Vmax: Maximum Velocity

v/v: Volume per Volume

WHO: World Health Organization

µg/mL: Micrograms per Milliliter

µL: Microliter

µm: Micrometer

Mm: Millimolar