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Abbreviations

 α -MEM = Alpha-minimum essential medium

 α -TCP = Alpha-tricalcium phosphate

μg = Microgram

μl = Microliter

μm = Micrometer

 μM = Micromolar

^oC = Degree celcius

3-D = Three-dimensional

ALP = Alkaline phosphatase

ANOVA = one-way analysis of variance

ATCC = American Type Culture Collection

BMP = Bone morphogenic protein

BMSCs = Bone marrow stem cells

BSP = Bone sialoprotein

Cat. No. = Catalog number

CDS = Cultured dermal substitute

Cm = Centimeter

CG = Collagen-Glycosaminoglycan

CPC = Calcium phosphate cement

CS = Chondroitin-4-sulfate

ECM = Extracellular matrix

EDAC = 1-ethyl-3-(3-dimethylaminopropyl)-carbodiimide

FBS = Fetal bovine serum

FPLC = Fibroblast-populated collagen lattice

g = Gram

g = Gravitation force
GA = Glutaraldehyde

GAGs = Glycosaminoglycans

Abbreviations (continued)

HA = Hydroxyapatite

HCI = Hydrochloric acid

HEp-2 = Human epidermoid carcinoma cells

hOB = Human trabecular bone osteoblast

HOS = Human osteosarcoma cell line

h = Hours

kD = Kilodalton

L = Liter

M = Molar

MES = 2-morpholinoethane sulfonic acid

mg = Milligram
ml = Milliliter

mM = Millimolar

mRNA = Messenger ribonucleic acid

MSCs = Mesenchymal stem cells

MW = Molecular weight

N = Normality

NaOH = Sodium hydroxide

nm = Nanometer

PBS = Phosphate buffer saline

PCL = Polycarpolactone

PDGF = Platelet derived growth factor

-PDGF-BB = Platelet-derived growth factor-BB

PGA = Polyglycolic acid

PLA = glycolic acid

PLGA = Poly(lactide-co-glycolide)

PLLA = Poly(L-lactide)

ROS = Rat osteosarcoma cell line

Abbreviations (continued)

rhBMP-2 = Recombinant human bone morphogenic protein-2

rpm = Round per minute

RT = Room temperature

Saos-2 = Human osteosarcoma cell line

SD = Standard deviation

SEM = Scanning electron microscope

SPP = Secreted phosphoprotein 1

TCP = Tricalcium phosphate

TetCP = Tetracalcium phosphate

TGF- β 1 = Transforming growth factor- β 1

UMR-106 = Rat osteosarcoma cell line

W/V = Weight per volume