

Standard Abbreviations

2D, two-dimensional	g, gram	PBS, phosphate-buffered saline
3D, three-dimensional	g, unit of gravity	PCA, perchloric acid
A, ampere	GAPDH, glyceraldehyde 3-phosphate dehydrogenase	PCR, polymerase chain reaction
μA, microampere(s)	GDP, guanosine diphosphate	PDGF, platelet-derived growth factor
mA, milliamper(s)	GFP, green fluorescent protein	PFA, paraformaldehyde
Å, angstrom (10 ⁻¹⁰ m)	GST, glutathione S-transferase	P _i , inorganic orthophosphate
aa, amino acid(s)	GTP, guanosine triphosphate	Pipes, [1,4-piperazinebis(ethane sulfonic acid)]
ADP, adenosine diphosphate	GTPase, guanosine triphosphatase	PKC, protein kinase C
AMP, adenosine monophosphate		PLC, phospholipase C
cAMP, cyclic AMP		PMA, phorbol myristate acetate
ANOVA, analysis of variance	h, hour	PMSF, phenylmethylsulfonyl fluoride
AP, alkaline phosphatase	HA, hemagglutinin	
ATP, adenosine triphosphate	HBSS, Hanks' balanced salt solution	r, correlation coefficient
ATPase, adenosine triphosphatase	Hepes, N-2-hydroxyethylpiperazine-N'-2-ethane sulfonic acid	RBC, red blood cell
a.u., arbitrary units	HPLC, high performance liquid chromatography	RER, rough endoplasmic reticulum
	HRP, horseradish peroxidase	RIA, radioimmunoassay
bp, base pair		RNA, ribonucleic acid
BrdU, bromodeoxyuridine	IFN, interferon	gRNA, guide RNA
BSA, bovine serum albumin	Ig, immunoglobulin	mRNA, messenger RNA
	i.l., intraluminal(ly)	miRNA, microRNA
°C, degree Celsius	i.m., intramuscular(ly)	shRNA, short hairpin RNA
CaM, calmodulin	i.p., intraperitoneal(ly)	siRNA, small interfering RNA
Cdk, cyclin-dependent kinase	IPTG, isopropyl-β-D-thiogalactoside	tRNA, transfer RNA
CFP, cyan fluorescent protein	IU, international unit(s)	RNAi, RNA interference
CHAPS, 3-(3-cholamidopropyl)diethylammonio-1 propanesulfonate	i.v., intravenous(ly)	RNase, ribonuclease
CHO, Chinese hamster ovary		RNP, ribonucleoprotein
Ci, curie(s)	JNK, c-Jun NH ₂ -terminal kinase	rpm, revolutions per minute
μCi, microcurie(s)		RT, room temperature
mCi, millicurie(s)	kb, kilobase(s)	RT-PCR, reverse transcription PCR
Con A, concanavalin A	kbp, kilobase pair(s)	
cpm, counts per minute	kD, kilodalton(s)	s, seconds(s)
cps, counts per second		s, sedimentation coefficient
CRISPR, clustered regularly interspaced short palindromic repeats	liter(s), liter(s)	S, Svedberg unit of sedimentation coefficient
CTP, cytidine triphosphate	μl, microliter(s)	SD, standard deviation
	ml, milliliter(s)	SDS, sodium dodecyl sulfate
		SEM, standard error of the mean
D, dalton	m, meter	SNAP, soluble NSF attachment protein
d, day	μm, micrometer(s)	SNARE, SNAP receptor
d, density	M, molar	SSC, standard saline citrate
DAB, diaminobenzidine	mAb, monoclonal antibody	SV40, simian virus 40
DAG, diacylglycerol	MAPK, mitogen-activated protein kinase	
DAPI, 6'-diamidino-2-phenylindole	MDCK, Madin-Darby canine kidney	t test, Student's t test
DEAE, diethylaminoethyl	MEM, Eagle's minimum essential medium	t _{1/2} , half-life, half-time
diam, diameter	MES, 2-(N-morpholino)ethane sulfonic acid	TBS, Tris-buffered saline
DMEM, Dulbecco's modified Eagle's medium	min, minute	TCA, trichloroacetic acid
DMSO, dimethyl sulfoxide	mo, month	TdR, thymidine deoxyribose
DNA, deoxyribonucleic acid	MOI, multiplicity of infection	TGF, transforming growth factor
cDNA, complementary DNA	mol, mole(s)	TGN, trans-Golgi network
DNase, deoxyribonuclease	mol wt, molecular weight	TLC, thin layer chromatography
DNP, dinitrophenyl	MOPS, morpholino propane sulfonic acid	TNF, tumor necrosis factor (α)
dpm, disintegrations per minute	M _r , relative molecular mass	TRITC, tetramethylrhodamine isothiocyanate
dps, disintegrations per second	mRFP, monomeric RFP	Tris, tris(hydroxymethyl)aminomethane
DTT, dithiothreitol		t-SNARE, target membrane SNARE
	N, normal (concentration of ionizable groups)	TUNEL, Tdt-mediated dUTP-biotin nick end labeling
ECL, enhanced chemiluminescence	n, number in a study or group	
ECM, extracellular matrix	NA, numerical aperture	U, unit
EDTA, ethylenediaminetetraacetic acid	NAD ⁺ , nicotinamide adenine dinucleotide	UDP, uridine diphosphate
EGF, epidermal growth factor	NADH, NAD ⁺ reduced	UTP, uridine triphosphate
EGFP, enhanced GFP	NADP, NAD ⁺ phosphate	UTR, untranslated region
EGTA, ethyleneglycol-bis(β-aminoethyl ether)-N,N'-tetraacetic acid	NADPH, NADP reduced	UV, ultraviolet
ELISA, enzyme-linked immunosorbent assay	NBD, nitrobenzoxadiazole	
EM, electron microscopy	ND, not determined	V, volt
ER, endoplasmic reticulum	NEPHGE, nonequilibrium pH gradient electrophoresis	VEGF, vascular endothelial growth factor
EST, expressed sequence tag	NGF, nerve growth factor	vol, volume
	NLS, nuclear localization signal	v-SNARE, vesicle membrane SNARE
°F, degree Fahrenheit	No., number	
FACS, BD fluorescence-activated cell sorter	NP-40, Nonidet P-40	W, watt
F-actin, filamentous actin	NS/ns, not significant	WGA, wheat germ agglutinin
FAK, focal adhesion kinase	NSF, N-ethyl-maleimide sensitive fusion protein	wk, week
FBS, fetal bovine serum	nt, nucleotide	wt, weight
FCS, fetal calf serum		WT, wild type
FGF, fibroblast growth factor	OD, optical density	
FISH, fluorescent in situ hybridization	ORF, open reading frame	YFP, yellow fluorescent protein
FITC, fluorescein isothiocyanate	osM, osmolar	yr, year
FRAP, fluorescence recovery after photobleaching	PAGE, polyacrylamide gel electrophoresis	