

Abbreviations

- **A/J** Albino inbred mice strain (The Jackson laboratory)
- **ABR** Auditory brain response
- **AKT** v-Akt murine thymoma viral oncogene homologue
- **ATOH1** Atonal homologue 1
- **B27** Brewer neurobasal serum-free supplement
- **BCA** Bicinchoninic acid
- **BDNF** Brain derived neurotrophic factor
- **bFGF** Basic Fibroblast growth factor
- **BglIII** *Bacillus globigii* restriction enzyme II
- **BMP** Bone morphogenetic protein
- **Brn3a** Brain 3-A
- **BSA** Bovine serum albumin
- **CAG** Cytomegalovirus, chicken β -actin and rabbit β -globin promoter
- **CD133** Cluster of differentiation 133 (Prominin1)
- **cDNA** Complementary DNA
- **CMV** Cytomegalovirus
- **CSCB** Centre for Stem Cell Biology
- **Ct** Cycle threshold
- **DFNB** DMEM, F12, N2 and B27 media formulation
- **DLX** Distal less homeobox family
- **DMEM** Dulbecco's modified eagle's medium
- **DMSO** Dimethyl sulfoxide
- **DNA** Deoxyribonucleic acid
- **DNR** Dominant negative receptor
- **dNTPs** Dinucleotide triphosphates
- **Dox** Doxycycline
- **dsRNA** Double stranded RNA
- **DTT** Dithiothreitol
- **ECL** Enhanced Chemiluminescence
- **EDTA** Ethylenediaminetetraacetic acid
- **EPHA** Ephrin type-A receptor
- **EpiSCs** Epiblast Stem Cells
- **ERK** Extracellular regulated kinase
- **ESCs** Embryonic Stem Cells
- **EYA** Eyes absent homologue family
- **F12** Ham's nutrient mixture F12
- **FBS** Foetal bovine serum
- **FGF** Fibroblast growth factor family
- **FGFR** Fibroblast growth factor receptor family
- **FGFR1IIIb** FGFR1 isoform IIIb
- **FGFR2IIIb** FGFR2 isoform IIIb
- **FITC** Fluorescein isothiocyanate
- **FOXP1** Forkhead box G1
- **Foxi1** Forkhead box I1
- **G418** Geneticin
- **GAPDH** Glyceraldehyde-3-phosphate dehydrogenase

- **GATA3** GATA binding protein 3
- **GBX2** Gastrulation brain homeobox 2
- **GFP** Green fluorescent protein
- **GSK3 β** Glycogen synthase kinase 3 beta
- **HEK293** Human embryonic kidney 293 cell line
- **hESCs** Human embryonic stem cells
- **hiPSCs** Human induced pluripotent stem cells
- **hMSCs** Human mesenchymal stem cells
- **HNK1** Human natural killer 1
- **HPRT** Hypoxanthine phosphoribosyltransferase 1
- **HSCs** Hematopoietic stem cells
- **HSPG** Heparan sulphate proteoglycans
- **IGF-1** Insulin-like growth factor 1
- **Ig-III** Third immunoglobulin-like domain
- **IIIb** Isoform “b” of Ig-III in FGFR
- **Iliac** Isoform “C” of Ig-III in FGFR
- **KO** Knockout
- **LEF** Lymphoid enhancing binding factor
- **LFNG** beta-1,3-N-acetylglucosaminyltransferase lunatic fringe
- **LIF** Leukaemia inhibitory factor
- **LTR** Long terminal repeat
- **MEFs** Mouse embryonic fibroblasts
- **mESCs** Mouse embryonic stem cells
- **mMSCs** Mouse mesenchymal stem cells
- **MMTV** Murine mammary tumour virus
- **mRNA** messenger RNA
- **MSX1** Msh homeobox homologue 1
- **NCBI** National Center for Biotechnology Information
- **neo** Aminoglycoside 3'-phosphotransferase
- **NeuroD** Neuronal differentiation
- **Ngn1** Neurogenin 1
- **NIH-3T3** NIH/Swiss embryonic fibroblast “3 day transfer 3x10⁵”
- **NotI** *Nocardia otitidis-cavarium* restriction enzyme I
- **NT3** Neurotrophin 3
- **NTERA** Human testis embryonal carcinoma cell line
- **OCT4** Octamer-binding protein 4
- **OTX2** Orthodenticle homeobox 2
- **P75** Nerve growth factor receptor
- **PAX** Paired box gene family
- **PBS** Phosphate buffered saline
- **PBS/T** Phosphate buffered saline, 0.1% Triton X-100
- **PCR** Polymerase chain reaction
- **PI3K** Phosphatidylinositide 3-kinase
- **PKR** Protein kinase RNA-activated
- **PLC γ** Phospholipase C gamma

- **PNK** Polynucleotide 5'-hydroxyl-kinase
- **PPR** Preplacodal region
- **pSUPERIOR** Suppression of endogenous RNA inducible plasmid vector
- **Q-PCR** Quantitative PCR
- **RAS** Rat sarcoma viral oncogene family
- **RIPA** Radioimmunoprecipitation assay buffer
- **RNA** Ribonucleic acid
- **ROCK** Rho-associated, coiled-coil-containing protein kinase
- **RPLP0** Ribosomal protein, large, P0
- **SAG** Statoacoustic ganglion
- **SB431542** TGF- β RI kinase inhibitor VI
- **SDS** Sodium dodecyl sulphate
- **SEM** Scanning electron microscopy
- **SHH** Sonic hedgehog
- **shRNA** Short hairpin RNA
- **siRNA** Small interfering RNA
- **SIX** Six oculis homeobox homologue
- **SMAD4** Mothers against decapentaplegic homologue 4
- **SOX2** Sex determining region Y (SRY) box 2
- **SSEA** Stage specific embryonic antigen
- **ST2** Bone marrow derived stromal cell line
- **STAT** Signal transducer and activator of transcription
- **SU5402** VEGFR and FGFR inhibitor
- **TBE 1X** Tris-HCL, boric acid and EDTA electrophoresis buffer 1X
- **TBST** Tris buffered saline with Tween
- **TCF** Transcription factor T-cell specific
- **Tet** Tetracycline
- **TetR** Tetracycline repressor
- **TGF β** Transforming growth factor β
- **TRA1-60** Human pluripotent stem cell specific antibody "Trafalgar"
- **TRKB** Tyrosine kinase receptor B
- **TRKC** Tyrosine kinase receptor C
- **WB** Washing buffer
- **WNT** Wingless-type MMTV integration site family
- **XhoI** *Xanthomonas holcicola* restriction enzyme I
- **Y27632** Inhibitor of Rho-associated kinases