**GLOSSARY OF SCIENTIFIC TERMS IN LAY LANGUAGE**

This glossary is the AEC’s interpretation only. Suggestions are welcome for inclusions please contact the NSLHD Research Office.

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| **Allele** | One particular version of a gene |
| **Androgen** | General term for any male sex hormone |
| **Angiogenesis** | The formation of blood vessels |
| **ANOVA** | Analysis of variance |
| **Antibody** | A protein of the immune system which specifically recognises and binds to foreign molecules (antigens) |
| **Antigen** | A molecule that causes an immune response which is recognised and bound by antibody |
| **Apnea** | Cessation of breathing |
| **Bioassay** | The determination of the active power of a particular compound in a sample by noting it effect compared with a standard preparation. |
| **Blastocyst** | Early embryo (before implantation into the uterine wall) which consists of outer cells which have the potential to form the placenta and an inner cell mass which has the potential to form an embryo |
| **Blastomere** | Cells within the early embryo before implantation. |
| **Cannulation** | Inserting an object into a blood vessel |
| **Capillary** | smallest blood vessels |
| **Chemoreceptors** | Senses which detect chemical changes, eg. oxygen and carbon dioxide in the blood |
| **Chimera** | An individual organism which contains cell populations mixed from different genetic backgrounds; can occur spontaneously (certain type of twins) or artificially (where the organism is derived from combined embryos; or embryos with introduced cells) |
| **Chromosome** | DNA Structure containing all the genes of an organism. (46 in each cell in man; halved in germ cells) |
| **Clone** | A precise genetic copy of a molecule, cell, plant or organism |
| **Cryopreservation** | Maintaining viability (eg. tissues, cells, embryos) by storing at very low temperatures |
| **Cytotoxic** | Toxic to cells |
| **Differentiation** | Process of acquiring cell specific characteristics as cells and tissues progressively diversify. |

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| **Diploid** | Possessing two copies of each gene |
| **DNA** | Deoxyribonucleic acid. Polymer of nucleic acids of which genes are made (the molecular basis of genes) |
| **Embolization** | A treatment that clogs small blood vessels and blocks the flow of blood  |
| **Enucleation** | Removal of the nuclei from a cell |
| **Endometrium** | The inner lining of the uterus. The thickness and structure varies with the phase of the menstrual cycle. |
| **Epididymis** | A duct between the tubules of the testis to the vas deferens which provides maturation and storage of sperm |
| **Estrogen/Oestrogen** | A generic term for oestrus producing steroid compounds, the female sex hormones |
| **Fibroblast** | A common connective tissue cell type |
| **Foetus/Fetus** | Alternate term for a developing embryo after formation of organs. |
| **Founder Mice** | Original genetically engineered mouse that are bred to found a line of transgenic mice |
| **Gamete** | A haploid reproductive cell (ovum or spermatozoan; maternally or paternally derived respectively) whose union is necessary (conception) to initiate the development of a new individual |
| **Gene** | A unit of genetic information |
| **Genetic Engineering** | Alteration of an organism by deliberately manipulating its DNA |
| **Genome** | The full set of genes of an individual (either haploid or diploid) |
| **Genotype** | The genetic constitution of an organism |
| **Haploid** | Possessing only a single copy of each gene |
| **Hepatocyte** | Liver cell |
| **Heterozygous** | Possessing two different copies (or alleles) of the same gene |
| **Histology** | Analysis of a slice of tissue under a microscope |
| **Homozygous** | Possessing two identical copies (or alleles) of the same gene |
| **Hypertrophy** | Enlargement or increased growth of an organ |
| **Hypoxia** | Lack of oxygen |
| **Immunocompromised** | Having an attenuated immune response. Can occur as the result of drugs, irradiation, malnutrition, disease or genetic manipulation |
| **Immunohistochemistry** | Binding of specific antibodies to molecules in tissue sections (which may identify cell types). |
| **Incision** | Cut into tissue |
| **Involution** | Reversion of a tissue to a previous state eg. A mammary gland after lactation is complete.  |
| **Ischemia** | Deficiency of blood to an area of tissue, usually due to obstruction of a blood vessel. |
| **IVF** | In vitro fertilization |
| **Kinase** | An enzyme which modifies proteins by adding a phosphate |
| **Knockout Mice** | Mice containing one or two copies of a gene which have been inactivated by genetic engineering |
| **Macrophage** | An immune cell that ingests and destroys foreign material |
| **Mitochondria** | Component of a cell (organelle) which provide energy. Have their own maternally derived DNA |
| **Monoclonal Antibody** | An antibody that is clonal ie. a unique antibody which usually recognizes a unique molecule, often made by a cell line derived from a single B-cell |
| **MSDS** | Material Safety and Data Sheet |
| **Mutant** | Organism carrying a mutant gene |
| **Myocyte** | A muscle cell |
| **Necrosis** | Area of tissue cell death (often at site of injury or lack of nutrients) |
| **Neurotransmitter** | A chemical that is released from one neuron and acts on itself or another |
| **NSAIDs** | Non-steroidal anti-inflammatories |
| **Nociceptors** | Receptor for pain. Most nociceptors are either in the skin or the large organs |
| **Nuclear Transfer** | The transfer of a nucleus from one cell to another |
| **Oocyte** | a developing egg cell |
| **Ooplast** | Oocyte with nucleus removed |
| **Osteoblast** | Cell which is associated with the production of bone. |
| **Ovariectomy** | Surgical removal of the ovaries |
| **Oviduct** | [Fallopian tube in humans] Duct between ovary and uterus |
| **Patch Clamp Technique**  | Electrophysiological measurement technique |
| **Phenotype** | The entire physical, biochemical and physiological makeup of an individual as determined both genetically and environmentally |
| **Proteinuria** | Protein content in urine |
| **Radioimmunoassay** | Analysis kit using radioactive isotope |
| **Recombinant** | A cell or organism which has a new combination of genetic information. |
| **Recombination** | Event where a new DNA strand is generated by breakage and reunion of DNA molecules. Can happen spontaneously (ie. When maternal and paternal genomes mix) or be induced in vitro. |
| **Somatic Cell Genetic Transfer (SCGT) or Nuclear Somatic Transfer (NST)**  | Transfer of an adult cell nucleus into an enucleated egg to a sexually create an embryonic clone. |
| **Somatic Cells** | Cells of an individual which are not part of the germline (ie not germ cells or precursors) **Sperm** A mature reproductive cell of male animals |
| **Standard Operating Procedures** | For example, “Standard Fashion” for “surgical wound closure” |
| **Stem Cell** | A cell progenitor, having the capacity for both replication and differentiation into many daughter cell types |
| **Thoracotomy** | Cut into the chest cavity |
| **Transcription Factors** | Small proteins which turn genes on and off |
| **Transgenic Animal** | Insertion of a gene (or segment of DNA) into the genome of an animal |
| **Tumour Suppressors** | Genes that repress cancer ie. when this gene is absent cancer occurs |
| **Urinalysis** | A chemical analysis of urine |
| **Vector** | Means to replicate/clone genes or DNA fragments in vitro |
| **Wild-type** | The original or natural version of a gene or organism |
| **Xenograft** | Tissue transplanted between different species |
| **Zona Pellucida** | A translucent, elastic, noncellular layer surrounding the ovum of many mammals |
| **Zygote** | A single diploid cell resulting from the fusion of male and femalegametes at fertilization (sperm and ovum) |