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**Half-life:** Time in which the concentration of a substance will be reduced by half, assuming a first order elimination process.

**Hazard:** Set of inherent properties of a substance, mixture of substances or a process involving substances that make it capable of causing adverse effects to organisms or the environment.

**Health based guidance value (HBGV):** A value indicating the amount of chemical in food that a person can consume on a regular basis usually over a lifetime without any significant risk to health.

**Hepatic:** Pertaining to the liver.

**Hepatocyte:** The principal cell type in the liver, possessing many metabolising enzymes (see 'metabolic activation').

**Hepatotoxic:** Causing toxicity to the liver.

**Heterozygous:** having two different forms (alleles) of a gene that controls a particular characteristic, one inherited from each parent, and therefore able to pass on either form

**Histone methylation:** The modification of certain amino acids in a histone protein by the addition of methyl groups.

**Histone modification:** Covalent post-translational modifications to histone proteins including methylation, phosphorylation, acetylation, ubiquitylation, and sumoylation, which regulate gene expression. The modifications made to histones can impact gene expression by altering chromatin structure.

**Histone tails:** A structural aspect of histones that are major targets for post-translational modifications of histones (see Histone modifications).

**Hodgkin's lymphoma:** Cancer of the lymphatic system.

**Homeostatic:** Any self-regulation process by which biological systems tend to maintain stability while adjusting to conditions that are optimal for survival.

**Horizon Scanning:** The systematic examination of potential threats, opportunities and likely future developments, which are at the margins of current thinking and planning. Horizon scanning may explore novel and unexpected issues, as well as persistent problems and trends. Overall, horizon scanning is intended to improve the robustness of policies and the evidence base

**Hypoxanthine-guanine phosphoribosyltransferase (HPRT) assay:** This assay uses cultured mammalian somatic cells to detect mutagenic agents. The principle of the method relies on the fact that mutations (caused by mutagens) destroy the functionality of the HPRT gene or protein, which is detected by using a toxic analogue. The HPRT-mutants are viable colonies that can be scored.

**Hypoxanthine-guanine phosphoribosyltransferase (HPRT) gene:** A protein coding gene. This transferase allows cells to recycle purines, a building block of DNA and RNA.

**Hypermethylation:** Increase in the methylation of cytosine-guanosine base pairs in regulatory regions of DNA.

**Hyperplasia:** An increase in the size of an organ or tissue due to an increase in the number of cells through cell division.

**Hypertrophy:** An increase in the size of an organ or tissue due to an increase in the volume of individual cells within it.

**Hypomethylation:** The loss of the methyl group in 5-methylcytosine nucleotides in DNA. Hypomethylation can be used to describe the unmethylated state of specific nucleotides or as a general phenomenon affecting large parts of the genome.

**Human Genome Project:** An international research effort aimed at discovering the full sequence of bases in the human genome, led in the UK by the Wellcome Trust and Medical Research Council.