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Homologous Recombination

National Cancer Institute

Source

National Cancer Institute. *Homologous Recombination*. NCI Thesaurus. Code C18144.

The process of exchange of genetic material between autonomous replicons, which depends on regions of extensive sequence homology between the participating DNA strands. This process involves double-strand breakage of one participant, resection of the break, and strand invasion, followed by formation, displacement and resolution of the Holliday junction. This process is involved in repairing broken DNA and creating combinations of genes that may be unique from the parent duplexes. Disruptions in this process can result in inviability, premature aging and predisposition to cancers and degenerative diseases.