

Homologous DNA Recombination

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Technology description

Summary

The inventions described in these patents are generally applicable to the process of homologous DNA recombination. The inventions may be used in conjunction with each other, to efficiently carry out the process of homologous recombination, or they may be used separately.

The inventions may be exploited generally in processes associated with therapeutic purposes such as gene inactivation, correction of gene mutations and the control of gene expression. For example, these inventions may be used to inhibit the transcription of a DNA sequence such as that encoding an oncogene or a virus. In addition, these inventions may be exploited in research applications such as sequence-specific mapping, cloning, and manipulation of complex genomes including the generation of transgenic animals.

Specific examples of the use of these inventions include (a) protecting a DNA sequence from modification by an enzyme such as methylase or cleavage by a restriction enzyme, (b) effecting site-specific cleavage by introducing a chemical cleavage moiety to the oligonucleotide, (c) cloning a genomic DNA fragment containing a predetermined sequence, (d) identifying a genetic mutation, e.g., point mutations, insertions and deletions, and (e) increasing the stringency thereby improving the specificity of DNA-DNA, DNA-RNA or RNA-RNA interactions at high temperatures.

Institution

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