Definition

Transposable elements (TEs), also known as jumping genes, are DNA sequences that have the ability to move or transpose within a genome. They can change their position within the genome and are found in the genomes of various organisms, including bacteria, plants, and animals.

Classification

Retrotransposons: These elements transpose through an RNA intermediate.
a. Long terminal repeat (LTR) retrotransposons: Contain direct repeats and encode reverse transcriptase and integrase enzymes.
b. Non-LTR retrotransposons: Lack LTRs and use a protein called reverse transcriptase to transpose.
DNA transposons: These elements transpose directly via a DNA intermediate.
a. Class I transposons: Encode a transposase enzyme, which mediates the transposition.
b. Class II transposons: Encode a transposase enzyme, similar to Class I transposons.