

足迹法

High Resolution Genetic Footprinting (Stanford)

Genetic footprinting is a technique for high-resolution mapping of the functional organization of a cloned gene. An *in vitro* transposition reaction with purified retroviral integrase is used to generate a large library of mutants, each of which bears an insertion or block substitution mutation of defined sequence at some position within the gene. The library of mutants is simultaneously subjected to one or more genetic selections, and DNA is made from the library of mutants before and after selection. The presence or absence of individual mutants within each population is determined by PCR analysis, in which each mutant within the library gives rise to a PCR product of unique electrophoretic mobility. Comparison of PCR product bands before and after selection allows reconstruction of the features of the gene that are essential for the function that has been selected.