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Nota di contenuto	Foreign DNA in Mammalian Systems; Preface; Contents; 1 Introduction; 1.1 Further reading; 2 ForeignDNA; 2.1 Foreign DNA in the environment; 2.2 Uptake and modes of persistence of foreign DNA in mammalian cells; 2.3 Further reading; 3 Methods to detect integrated foreign DNA; 3.1 Parameters of foreign DNA integration; 3.2 The fluorescent in situ hybridization method; 3.3 Detection of foreign DNA by Southern DNA to DNA hybridization; 3.4 Detection of foreign DNA sequences by the pol reaction (PCR); 3.5 Recombining of junction fragments and the determined nucleotide sequences 3.6 Equilibrium sedimentation in alkaline CsCl total DNA hybridization 3.7 Further reading; 4 The adenovirus paradigm; 4.1 An introduction to the adenovirus system; 4.1.1 Clinical background; 4.1.2 Virion

structure; 4.1.3 Classification; 4.1.4 Multiplication during productive infection; 4.1.5 Abortive infection; 4.2 An example: Ad12 DNA integration in the Ad12 hamster cell line T637; 4.3 The state of the viral DNA in different cell systems; 4.3.1 Productive infection; 4.3.2 Abortive infection; 4.3.3 Transformation of cells in culture; 4.3.4 Tumor induction by Ad12 in newborn hamsters  
4.3.5 Tumor cells in culture4.3.6 Loss of previously integrated Ad12 DNA sequences; 4.4 Adenovirus infection, DNA transfection or DNA microinjection; 4.5 Integration of adenovirus DNA in human cells - significance human somatic gene therapy; 4.6 Studies on integrative recombination of adenovirus DNA in a cell-free system; 4.7 Further reading; 5 Conclusions derived from a survey of junction sites; 5.1 On the characteristics of junction sequences; 5.2 Persistence of integrated foreign DNA - a novel functional type of insertional mutagenesis  
5.3 Adenovirus DNA: chromosomal association - covalent gene integration5.4 Further reading; 6 Adenovirus-induced tumor cells and revertants; 6.1 Clonal origin of Ad12-induced tumors; 6.2 Stability - instability; 6.2.1 Hit-and-run mechanism of viral oncogenesis?; 6.2.2 General implications of a hit-and-run mechanism; 6.3 Further reading; 7 Comparisons with other viral systems; 7.1 Integration of viral DNA; 7.2 Transcription of integrated viral genomes; Color plates; 7.3 Virus-induced tumors; 7.4 Replication and integration of the retroviral genome; 7.5 Endogenous retroviral genomes  
7.6 The viral archetype: integration of bacteriophage DNA7.6.1 The most important regulatory functions in the phage genome; 7.6.2 Control of transcription at the right operator OR of phage DNA; 7.6.3 A closer look at the integration and excision of the bacteriophage genome; 7.7 Further reading; 8 Non-viral systems; 8.1 Exchange of genetic information with extracellular DNA in pneumococci; 8.2 IS elements and transposons; 8.3 Thoughts on the mechanism of foreign DNA integration; 8.4 Expression of integrated foreign DNA; 8.5 Fixation of foreign DNA in transgenic animals  
8.6 Critical evaluation of the results obtained with transgenic animals

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#### Sommario/riassunto

It is unlikely that the established genomes of present day organisms remain stable forever. It is conceivable that foreign DNA can gain entry into individual cells of an organism. Foreign DNA is defined as genetic material that derives from another organism of the same or a different species. The natural environment is heavily ""contaminated"" with such foreign DNA, and mammals, like other organisms, are frequently exposed to foreign DNA in their environment, notably by ingesting their daily food supply. By necessity, the gastrointestinal tract also of all mammalian organisms is constantly

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