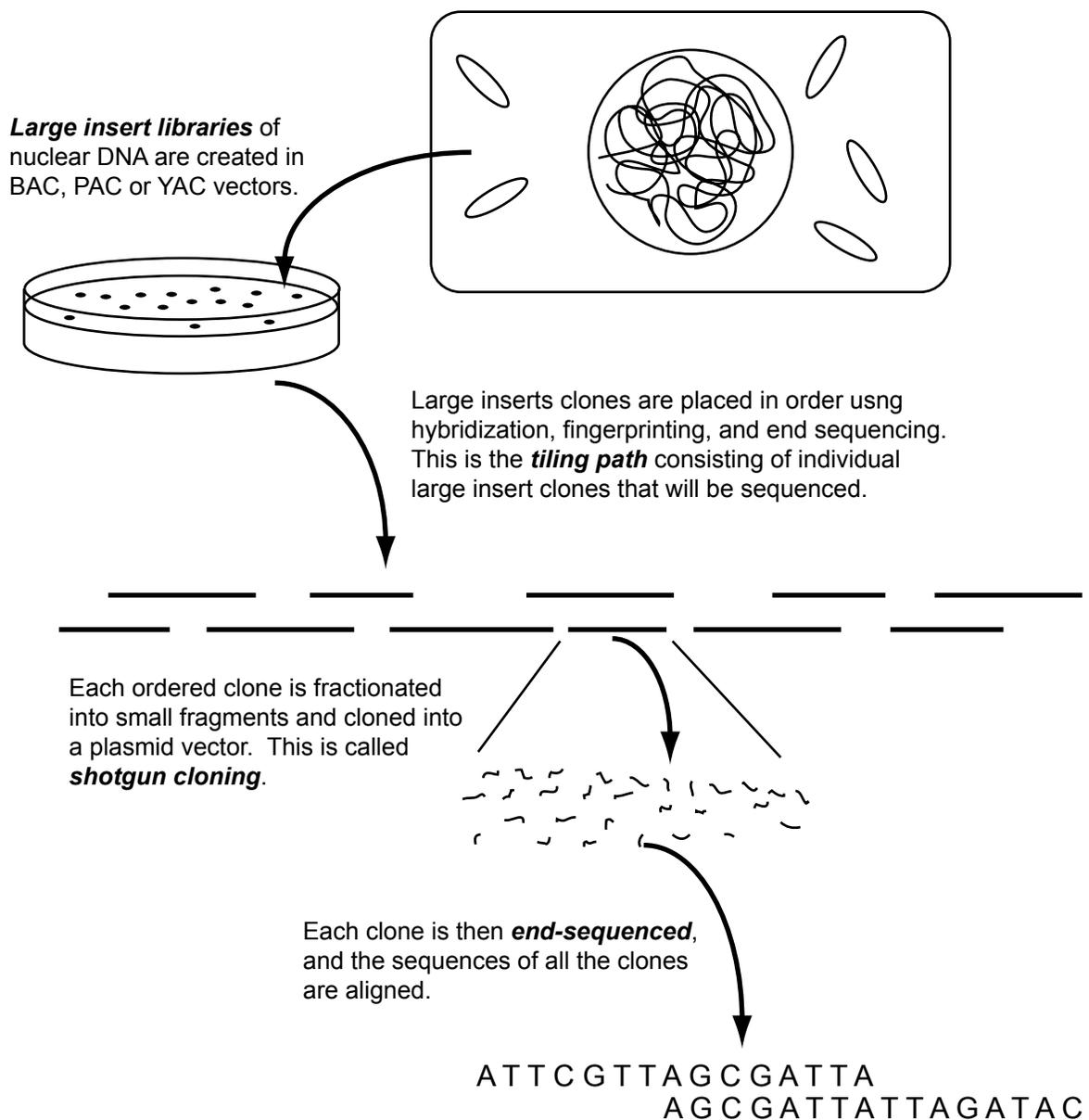


Hierarchical Shotgun Sequencing of Genomes

A. The Concept

Hierarchical shotgun sequencing requires that largest insert libraries be constructed. A series of these clones are ordered by several techniques. Once these clones are ordered, they are fractionated into small fragments and cloned into plasmid vectors. The plasmid clones are sequenced and ordered. This is the procedure used to sequence the *Arabidopsis* genome, and by the public project to sequence the human genome.



Shotgun Sequencing of Genomes

A. The Concept

Shotgun sequencing requires that random, small insert libraries are created from the nuclear DNA. The plasmid cloning vector is used for this step. These clones are then sequenced. This step is analogous to the shotgun cloning and sequencing step used for each large-insert clone used in hierarchical shotgun. The sequences of the clones are then aligned. This is the procedure used to sequence the *Drosophila* genome, and by Celera to sequence the human genome.

