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CONSTRUCTION OF A DURUM WHEAT (*TRITICUM TURGIDUM L. SSP DURUM)* BACTERIAL ARTIFICIAL CHROMOSOME (BAC) LIBRARY

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Libraries of large-inserts DNA are essential for physical mapping, map-based cloning, identification of molecular markers closely linked to quality traits loci (QTL) and gene structure and function analyses in complex genomes.

We are actively working on the construction of a bacterial artificial chromosome (BAC) library (1) of the tetraploid wheat *Triticum turgidum L. ssp durum* (2n=4x=28) whose genome size has been estimated of 11.200 Mb.

Therefore, about 300.000 clones with an average insert size of 120 Kb would be required to achieve a genome coverage of 95%.

The megabases-size DNA has been prepared from nuclei (2) by using as a source wheat seedlings (cv.Ofanto) grown under dark condition. DNA was partially digested with BamHI restriction enzyme then subjected to double size selection by Pulsed Field Electrophoresis (PFGE) and electroeluted and cloned into *pINDINGO BAC5* ™ vector.

BAC clones, derived from each ligation reaction, were collected in 384 wells microtiter plates by using a robotic system and stored at -80°C.

At present, 200.000 BAC clones have been produced. Some clones randomly picked have been analysed for their DNA insert size that resulted to be in the range of 80-150 Kb.

References

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