

Sequencing of Megabase-sized BAC contigs from Wheat Chromosome 3BS

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Summary of Proposed Project

A better understanding of the molecular mechanisms underlying quantitative and qualitative traits (such as disease and pest resistant genes) is needed for the development of new wheat genotypes. In this project, our aim is to participate to an international project with the sequencing of a region of 12 cM on the short arm of wheat chromosome 3B that contains a number of resistance genes. High throughput Shotgun Genome Sequencing will be used in this proposal. A sublibrary will be constructed from the BACs and sequencing will be carried out in our MegaBase (Amersham) sequencer. The BACs will be provided by the INRA Clermont-Ferrand (France) that is currently constructing a physical map of chromosome 3B and establishing a MTP in the target region on 3BS. In the frame of International Wheat Genome Sequencing Consortium (IWGSC), a project has been funded by the USDA to establish a physical map of chromosome 3A and sequence regions orthologous to those that are currently sequenced on 3B. Comparison of megabase-sized contigs on 3A and 3B will provide new insight into the structure and evolution of the wheat genome, to support the isolation of resistance genes present in this region and study the impact of polyploidization on the genome structure.