



Expressed sequence tag-PCR markers for identification of alien barley chromosome 2H in wheat

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Genet. Mol. Res. 11 (3): 3452-3463 (2012)

Received March 12, 2012

Accepted April 5, 2012

Published September 25, 2012

DOI <http://dx.doi.org/10.4238/2012.September.25.13>

ABSTRACT. We developed EST-PCR markers specific to barley chromosome 2H, for the purpose of effectively tracing alien chromosomes or chromosome parts in the wheat genetic background. The target alien chromosome 2H confers high resistance to pre-harvest sprouting, which is a worldwide natural disaster in wheat. A total of 120 primer pairs were selected by combining the wheat group 2 chromosomes of the EST database and the genome sequences of the new model plant *Brachypodium distachyon*. Seventy-seven of 120 primer pairs were polymorphic and 31 of 120 primer pairs were monomorphic between a set of wheat-barley chromosome 2H disomic addition/substitution lines and their parents by agarose gel electrophoresis and polyacrylamide gel electrophoresis. Thirty of 77 polymorphic primer pairs including primer pair P120 derived from the *basi* gene were chromosome 2H-specific. These markers are expected to be valuable in screening of wheat-barley

chromosome 2H recombination lines and pre-harvest sprouting resistant varieties.

Key words: Wheat; Barley; Chromosome 2H; EST-PCR marker