



# Intergenomic SNPs reveal putative spontaneous chromosomal interchanges between chromosomes 7A and 7D of wheat

By

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## **Abstract**

Langdon 7D(7A) and 7D(7B) durum substitution lines were crossed with DBA-Aurora durum wheat to introgress a lutein esterification gene, *TaGelp1*, from chromosome 7D onto its homoeologues 7A and 7B. Genotyping-by-sequencing based on DNA samples from durum wheat and bread wheat revealed single nucleotide polymorphism (SNPs) among the group-7 chromosomes. Sixteen KASP markers were developed and to be able to differentiate among these chromosomes. Nine 7A-7D markers were used to characterise progeny populations to search for dissociation of molecular markers which may indicate chromosomal recombination. Evidence of possible 7A-7D recombination was found in a small number of progeny (less than 4%). Most of the putative marker dissociations were in the centromeric region but one plant was found to carry only a small distal fragment of 7DS including *TaGelp1*. The findings suggest crossing normal durum with Langdon 7D(7A) combined with KASP marker assistance can be applied as a method to introgress and assess genes from chromosome 7D onto its homoeologues without resorting to use of wheat with the *Ph1* deletion.

## **Keywords**

*Triticum turgidum* subsp. *durum*, lutein esterification, genotyping-by-sequencing, KASP marker, homoeologous recombination