Nucleotide sequences of the two high-molecular-weight glutenin genes from the D-genome of a hexaploid bread wheat, *Triticum aestivum* L. cv Cheyenne

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The high-molecular-weight (HMW) glutenins are one of several families of storage proteins found in wheat flour (1). They comprise about 10% of the total protein, and are a critical component contributing to the visco-elastic properties of dough unique to wheat (2-4). Here we report the nucleotide sequence of the two HMW genes from the D-genome of the hexaploid bread wheat Triticum aestivum L. cv Cheyenne. These are the Glu-D1-1b and Glu-D1-2b genes coding for the Dx5 and Dy10 HMW subunits, respectively, and have been associated with superior dough quality (3,4). The central, repetitive domain of the genes is indicated by half-brackets, and the TATA and polyadenylation signals are underlined.

Glu-1D-1b Accession No. X12928

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AAAGCTCCAATTGCTCCTTGCTTATCCAGCTTCTTTTGTGTTGGCAAACTGCGCTTTTCCAACCGATTTTGTTCTTCTCGCGCTTTCTTCTTAGGCTAAACAAACCTCACCGTGCACGCA   360
GCCATGGTCCTGAACCTTCACCTCGTCCCTATAAAAGCCTAGCCAACCTTCACAATCTTATCATCACCCACAACACCGAGCACCACAAACTAGAGATCAATTCACTGATAGTCCACCGAG   480

ATGGCTAAGCGGTTAGTCCTCTTTGTGGCGGTAGTCGTCGCCCTCGTGGCTCTCACCGTCGCTGAAGGTGAGGCCTCTGAGCAACTACAGTGTGAGCGCGAGCTCCAGGAGCTCCAGGAG   600
M A K R L V L F V A Y V V A L V A L T Y A E G E A S E Q L Q C E R E L Q E L Q E

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R E L K A C Q Q V M D Q Q L R D I S P E C M P V V V S P V A G Q Y E Q Q I V V P

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P K G G S F Y P G E T T P P Q Q L Q Q R I F W G I P A L L K R Y Y P S V T C P Q

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Q V S Y Y P G Q A S P Q R P G Q G Q Q P G Q G Q Q G Y Y P T S P Q Q P G Q W Q Q

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G D A L S A S Q * *

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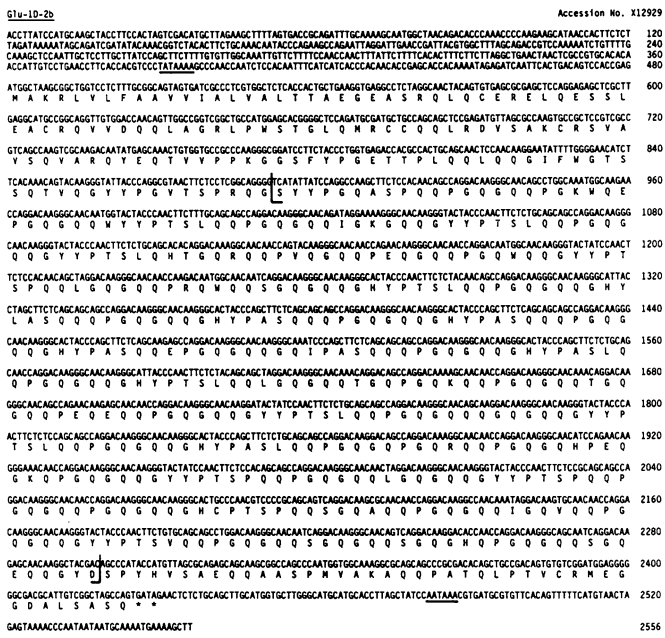

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