

Nucleotide sequence of the maize *Mutator* element, *Mu8*

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Molecular analysis of a mutant *waxy* allele, *wx-mum5* (Don Robertson, unpublished), revealed the presence of a previously unidentified maize *Mutator* element (*Mu8*) within the tenth exon of the *waxy* gene. The element is 1410 base pairs (bp) long and is flanked by a nine bp direct repeat of insertion site DNA. The element has inverted terminal repeats of 185 bp which are 96.8% homologous (179/185). These terminal repeats are 89.2% and 85.9% homologous to their counterparts from the *Mu1* element (1). The average G/C content of *Mu8* is 63.7%; comparable to

that of *Mu1* (67%), but significantly higher than the G/C content of the entire maize genome, estimated to be 49.5% G/C (2).

REFERENCES

1. Barker, R.F., Thompson, D.V., Talbot, D.R., Swanson, J. and Bennetzen, J.L. (1984) *Nucl. Acids Res.* **12**, 5955–5967.
2. Hake, S. and Walbot, V. (1980) *Chromosoma* **79**, 251–270.

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TCGGCAGGCGAGATAATTGTCATTATAGACGAAGAGCGGACGGGATTCGACGAAATGGAGGCGATGGCGTTGGCTTCTCT 80
GTTCTGGAACGCAGACGACAGCCAAACGCCAAAACGGAAAGGAGACAGCGCTTGGAGCTGTGTAAACAGGTATTAGTCT 160
CCTGTCCCCTTTACCGTTCGCTGCGCAGACGCCGTCTGGCATACTCTCTACGCCGTCTTCTTGGCGGCTGCTCT 240
CGGGGTGCGCCTGCTCGCAATACCTGTTTTGACACAAGCAGCGCCGGAGCGGGCCGCGCAGGTTGGCCTCGAACAGCCCC 320
GTGATCTTGCCTCGCGTTGAACCGCCACGGTGCAGGTTGGCCACGGCTCGCCCGCATCTGCGTGGCCCTGGCGTG 400
CGCGGCCCTCCAGGTCCCCGAGAAGCCCTTCATGAACATCTTCTGCAGCACGGTGGCGCCACGACGAGCGGGAACACGG 480
CGAGGAGCACGAGCGCGAGGCGCACTGGAGGACGAACCCCGCGGTGTAGGCCACCGATCAGCGCCGAGTTCTGGACG 560
ATGACGGAGATGCGGTCCCCGATGGCGGACGGCACGTTCTGGGCGTCCAGCGCGAGCCTGGCGCCACGCGCGCGCTGGCG 640
TTCTCGTCCGTGTGCAACAGGCGATCTCGTTGCGGAGCACGGCGTGAACATCTTCTCGCGCACCCGCTTGGTCAGGTT 720
CTCGCCACCGTGTCCCAGAACACCTGCTGCACCGTGTGAAACAGCAGCGCGGAGGACATGCCGATGAGCAGGTAGCAG 800
TATTTGGCGATCTCGCGCTTCATGTACCGCGGTCCGGCGCGTAGTACACGCTGAGCACGGCGCTGAGGATGTAGGCGAA 880
GATGGCGCTGAAGGAGCCGCGGACCATGGAGCCGGCGAGCGCTAGGCCACTCGGGCGAGTTCATCCTGGCGAGGCGCA 960
GGAAGGAGCTGGCGCCGGCGCGGAACGCCAGCTGCTTGTGCGCCATGGTCCGGTGGTGGTGGTGGCGGGTCTGGATGGAG 1040
AGGGTGAAGTCGGAGGTGGAGAAGTCGGAGAGGCGCGGGAGTAGGGGGAGCGGCCGTAGAGGAGTTGCGCGTCATGATG 1120
GGCGAGCTGACGGAGTTGCGGGCGCTGGAGGGCTGGCGCTGCGCCGTGCTGGTGAATGTCGACCCCGAGAGCATGAAC 1200
ACGAGAGCATGAACACGAAACGGCGGCTAGGGCAGCGTCTGCGCAGACGAACGGTAAACGGGGACAGGAGACTAATACCT 1280
GTTTACGCAGCTCCAAGCGCTGCTTCTTTCCGTTTTGGCGTTGGCTGTCCGCTGCCGCTCCAGAACAGAGAAGCCAAC 1360
GCCATCGCCTCCATTTGCTCGAATCCCGTCCGCTCTTCGCTATAATGGCAATTATCTCTCGGCAGGC 1428

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Figure 1. The complete nucleotide sequence of *Mu8*. The solid line beneath the sequence shows the extent of the inverted terminal repeats which are flanked by the 9 base pair direct repeat of insertion site DNA.