

hir-1223	AAAAGTTTGTGGAGATAGTCCTTAAAGCAGGCAGAATACTGCACCCAAGGGAGTGACATA	60
TY50	AAAAGTTTGTGGAGATAGTCCTTAAAGCAGGCAGAATACTGCACCCAAGGGAGTGACATA	60
HC7880	AAAAGTTTGTGGAGATAGTCCTTAAAGCAGGCAGAATACTGCACCCAAGGGAGTGACATA	60
TY52	AAAAGTTTGTGGAGATAGTCCTTAAAGCAGGCAGAATACTGCACCCAAGGGAGTGACATA	60
G1h	AAAAGTTTGTGGAGATAGTCCTTAAAGCAGGCAGAATACTGCACCCAAGGGAGTGACATA	60
Consensus	aaaagtttgtggagatagtccttaaagcaggcagaataactgcaccaagggagtgacata	
hir 1223	GTTGATCAATAAAGTAGGGAAAA..CCATGAGGTCTCGGGTTATTTAAAATCTGAGTAGAG	118
TY50	GTTGATCAATAAAGTAGGGAAAA..CCATGAGGTCTCGGGTTATTTAAAATCTGAGTAGAG	118
HC7880	GTTGATCAATAAAGTAGGGAAAA..CCATGAGGTCTCGGGTTATTTAAAATCTGAGTAGAG	118
TY52	GTTGATCAATAAAGTAGGGAAAA aa CCATGAGGTCTCGGGTTATTTAAAATCTGAGTAGAG	120
G1h	GTTGATCAATAAAGTAGGGAAAA aa CCATGAGGTCTCGGGTTATTTAAAATCTGAGTAGAG	120
Consensus	gttgatcaataaagtagggaaaa ** ccatgaggtctcgggttattaaaatctgagtagag	
hir 1223	T CAAAACC ACT AGGTGATTCTCATTTGCACAAGACCCCAAACCTTGGTGGACAGATTTAC	178
TY50	aCAAAACC ACT AGGTGATTCTCATTTGCACAAGACCCCAAACCTTGGTGGACAGATTTAC	178
HC7880	aCAAAACC ACT AGGTGATTCTCATTTGCACAAGACCCCAAACCTTGGTGGACAGATTTAC	178
TY52	aCAAAACC..TAGGTGATTCTCATTTGCACAAGACCCCAAACCTTGGTGGACAGATTTAC	178
G1h	aCAAAACC..TAGGTGATTCTCATTTGCACAAGACCCCAAACCTTGGTGGACAGATTTAC	178
Consensus	*caaaacc** taggtgattctcatttgcacaagaccccaaaccttgggtggacagatttac	
hir 1223	CCGGTACCTGTGTTAGTGGGACTTGGGAGGTAGCATGTACTCGATAGAATTAGTCGAGGT	238
TY50	CCGGTACCTGTGTTAGTGGGACTTGGGAGGTAGCATGTACTCGATAGAATTAGTCGAGGT	238
HC7880	CCGGTACCTGTGTTAGTGGGACTTGGGAGGTAGCATGTACTCGATAGAATTAGTCGAGGT	238
TY52	CCGGTACCTGTGTTAGTGGGACTTGGGAGGTAGCATGTACTCGATAGAATTAGTCGAGGT	238
G1h	CCGGTACCTGTGTTAGTGGGACTTGGGAGGTAGCATGTACTCGATAGAATTAGTCGAGGT	238
Consensus	ccggtacctgtgttagtgggacttgggaggtagcatgtactcgatagaattagtcgaggt	

Figure 4. Sequence of PCR fragment with primer pair (PSNP436s/ PSNP436c) for *S. habrochaites* (*L. hirsutum*) LA1223, and HC7880, open pollinated cultivar from Cuba susceptible to begomoviruses in Guatemala; Gh1, line selected from hybrid FAVI 9 (begomovirus resistance derived from lh902); TY52, isolines with *Ty-1* gene from *S. chilense* (Zamir et al. TAG 88:141-146); TY50, isolate to TY52 without *Ty-1* gene for TYLCV resistance.