

Appendix Specific EST-PCR markers for chromosome 4V of *H. villosa*

Markers	ESTs	Forward primer (5'→3')	Reverse primer (5'→3')	Location determined by Chinese Spring (CS) nulli/tetrasomic lines N4AT4B and N4DT4B
CINAU64	BE637573	CCAAAACCCTAACCCCTAGCC	GGCAAGTTCACTTCCCATGT	
CINAU65	BE405581	GCTTTGAGCGGTAGTGATCC	GTAAGAAGCGCCGTCTCAAC	4A, 4D
CINAU66	BE500311	GCTGAAACAAGAGATTGGCTTA	GCCTTATGCCGCGTAATAGAT	4A
CINAU67	BF291316	CTCGATGCCAAGTCTTCCTC	TTGCGGGAACTTTAATCGTC	4A, 4D
CINAU68	BE497184	TGGCTGATCACCAACTTCAG	CATGACGCATCTGTTCTGGT	4A,4D
CINAU69	BG314411	CGTCAAAGGACAAGAAAAC	AAGCTGAGAAATTCACTGGA	4A, 4D
CINAU70	BG274115	GCCATTGTTGAAGAAGAAAGC	ATGACCAAACCCATAGTGAAAC	4A, 4D
CINAU72	BG275006	CCTTCTACATCGTCAAGGAC	CCAATTTCAACCTCGTTAAG	4A, 4D
CINAU74	BG607174	AGTCGATGGCACCTACTTTA	CAAGAACCTCCATAGACGAG	4A
CINAU75	BM135436	CCCAGATCATCTTTCTTCTG	ACAACCTCGATGCTTGTCTTT	4A, 4D
CINAU76	BG606837	AGCTCTTTGCTGAAACTGAG	ACCAGAACATTGCAACTAGG	
CINAU77	BE443868	AGTATCTGTCAGGTGCTCGT	TCTTTAGCTCCTCAACTTGG	4D
CINAU78	BE488233	GATTGCTCAAAGGAACTTG	TCATTTGGTTGCTAACCTCT	4A, 4D
CINAU79	BE489218	ATCGAGAAGCTCATGGAGTA	TACAATTGGGTTACCTGTGC	4A, 4D

CINAU290	BE405218	ATGGTTGTGAATGGAGGATA	TGATGTCATGTGGATCAGAG	4A, 4D
CINAU291	BE446304	CTACAAAAATGGCCCTGTAG	CACCAAGCATATGAGCTGTA	4A
CINAU292	BE446344	AGACAGGATCAATTTTGGTG	GGTTCAGCAGAGAAACAAAC	4A
CINAU293	BE494281	CTACTGTGTTTCAGCCACTCA	TCGGGCTAGATACCAAATTA	4A, 4D
CINAU294	BE497402	CATTCCACCAAATCGACATA	TTAAGGAATTCTACGGTGGT	
CINAU295	BE637507	GGATGATCTGATTGCACTTT	GCATCTTTAACCTGTTGCTT	
CINAU296	BE637722	GTGGTGAGAAGAGCAAGTTC	TGTACACAGAGGTCATTTGG	4A
CINAU297	BE637729	TTGAACAAGAATTTGGGTTT	CACCACGATTACAAGTACCA	4A, 4D
CINAU298	BF201717	GCTCCCTCCGTAGCATCT	AGCGAAGTCCTGTCTCATCT	
CINAU299	BF202969	ACCCGAATGCTTCCTATCT	GAAGTCCCATCAACCTCA	4D
CINAU300	BF428648	CACAGAATGTTGTTGGGTCA	GCACATCGTCCGTTTAGC	4A, 4D
CINAU301	BG263601	TTTATACGGCATGTTTCATCA	TCAGTGATGTGCTTTAGTGC	4D
CINAU302	BG312572	CTGCAACTTTATTGCTCAACT	GGCAGATATATCCACGCTTA	4A, 4D
CINAU303	BG313633	GGTTCAAGAATCAAGTGGAA	TTACTGGCAGAGATTGGTCT	4D
CINAU304	BG314071	AGGAATAAGACTCCGGTAGG	GAGTTAGCGCCAAGATTCTA	4A, 4D
CINAU305	BG604678	ATGACCCTGTGTTCAAAAAG	TGGTAATTGTTGCATCTTCA	4A, 4D
CINAU82	BF483245	CAAGCTCAAGTCCCTTCTC	ACTGCTTCCTTTACCTCCTC	4A, 4D

CINAU83	BF484142	TGTGTCATATGGATCACAGG	TACCAGCATCTGCAAAAAG	4A, 4D
CINAU84	BE499509	CTGGTTTTGGTGAAAGTGAT	CTTGGTCATCTTGGAGTCAT	4D
CINAU85	BF474374	AACTTCAGGGCCTAAACAGT	AAAAGATGGGACATGAAGTG	4A, 4D
CINAU86	BE443253	CGCAGGTAAGACAACGATAC	CTCTTCTCTGAGGATCAACG	4A, 4D
CINAU308	BE404553	GAACATACAGGGAAGTGGAA	ACCCATAATGAAAATTGTGC	4D
CINAU309	BE406512	ACAAATTGAACAGAGCATCC	TCAACCAGCTCCATCATATC	4A, 4D
CINAU310	BE424493	TCCTTTTCCATCGTAGTGTT	GGACTGCCTGGTTAAGTATG	4A, 4D
CINAU311	BE426410	GTTCTTTTCATGACCCTTCA	ATGATGTGCGGTATGATGTA	
CINAU312	BE443291	AGGGTATCCTGAACCTCATT	CATCTTGATACAGGCTAGGG	4A, 4D
CINAU313	BE446505	GTTTAACCTGAGCGAAGCTA	ACTTGAGTGCAAGGACAGTT	
CINAU314	BE494030	GCCGTCGTGTCCGTAGAG	CGTGATGTCCGGGAACTT	4A, 4D
CINAU315	BE496889	TGCGTGTATGCTGAGGTTC	CAGAAGAAGTGTCTCGTCCATA	4A
CINAU316	BE497134	CGTCTGGAACACTACGAGGAC	GAGGAGCTGGTGATGAACT	4A, 4D
CINAU317	BE497989	TCCTGAAGACGCAGTTGAT	TAGCCTTTGCCAGTAGAGC	4A, 4D
CINAU318	BE498331	AACTTCGGAGCACAAGACTA	TGGCTATCTACCAGCTATGC	4A, 4D
CINAU319	BE498573	CGTGTTGCTGAGTATCTGAA	GTTTCAAGCTGTTCTCTGT	4A,
CINAU320	BE591000	GGATTGGTCTTCATTTACCA	CTCCAGGAACACTTTGATGT	4A, 4D

CINAU321	BE637255	TGTTGATGACATTCTGCACT	GCTGACGTATTTGTCTTTCC	4A, 4D
CINAU322	BF429115	GTCGGTCTATTGAAATGCTAAG	GCTCTTAGAACAGGTCCCCT	4A, 4D
CINAU323	BF485396	GACTGGAGGATGACACAGTT	CCAAATGCTTTACCACTCTC	4D,
CINAU324	BG262193	CAGCAGTGACAAGTCCATTT	GAAGATTCCTCCTGGTTGTT	4A,
CINAU325	BG313346	ACTCTGGGGATTCATATCCT	TCGATCTTCCTTCTTCTCAA	
CINAU326	BG605236	GTCTAGCATTGGCAGAGAAC	CTCCGAATTTCCAGTAACAG	4A, 4D
CINAU327	BM134276	CTTGTCGGAATGAAGAAGAC	AAGCCGAAGGAGCTGACT	4A, 4D
CINAU328	BQ280457	TTCAATTGCTTTGTGTTCTG	GCAAATTAGTTGTCGTCTCC	4A, 4D
