Supplementary Data S1. Identification of hemp virus T (HemVT).

The hemp (*Cannabis sativa*) transcriptome data analyzed in this study are available in the Sequence Read Archive (SRA) of the National Center for Biotechnology Information (NCBI) under BioProject accession number PRJNA435671. This dataset includes 132 independent sequencing runs (SRR accessions).

Raw sequence data were processed for quality trimming using Sickle (version 1.33) with the parameters "-q 30 -l 55." High-quality reads from each run were independently assembled into contigs using SPAdes (version 3.15.5) with the "--rnaviral" parameter. The assembled contigs were compared against known viral RNA-dependent RNA polymerase (RdRp) sequences extracted from the viral RefSeq protein database using BLASTX to identify putative viral genome contigs.

Among the assembled contigs, we identified sequences showing approximately 68% amino acid sequence identity with the RdRp domain of potato virus T (PVT), the type species of the genus Tepovirus. This finding suggests the presence of a novel Tepovirus-like genome in the hemp transcriptome, which we subsequently named hemp virus T (HemVT).

All 132 sequencing runs contained HemVT contigs of variable lengths. These contigs exhibited 99%–100% nucleotide sequence identity with one another, confirming that they were derived from the same virus. A consensus genomic sequence was generated from these 132 contigs. For each sequencing run, the number of total reads (single-end reads), HemVT contig name and length, and the number of viral reads are presented in Table 1.

Table 1. Summary of sequencing runs and assembled contigs for HemVT

No	SRA run	Total reads	Viral contig	Length	Viral reads
1	SRR3996292	4948536	NODE_1_length_7241_cov_56.184897	7241	11939
2	SRR3996293	2618582	NODE_1_length_7225_cov_31.472593	7225	6668
3	SRR3996294	3204084	NODE_1_length_7230_cov_37.942305	7230	8037
4	SRR3996295	3173214	NODE_1_length_7254_cov_36.172648	7254	7735
5	SRR3996296	3425648	NODE_1_length_7227_cov_40.764951	7227	8620
6	SRR3996297	3713656	NODE_1_length_7243_cov_47.003053	7243	10064
7	SRR3996298	5689198	NODE_1_length_7272_cov_108.931030	7272	23112
8	SRR3996299	2920016	NODE_1_length_7228_cov_61.265749	7228	12917
9	SRR3996300	3313210	NODE_1_length_7226_cov_66.696898	7226	14018
10	SRR3996301	2942706	NODE_1_length_7228_cov_61.846753	7228	13009
11	SRR3996302	3329672	NODE_1_length_7177_cov_69.405182	7177	14490
12	SRR3996303	3801588	NODE_1_length_7250_cov_76.239152	7250	16109
13	SRR3996304	5968392	NODE_1_length_7249_cov_217.754437	7249	45243
14	SRR3996305	3307600	NODE_1_length_7267_cov_134.777040	7267	27988
15	SRR3996306	3474698	NODE_1_length_7229_cov_139.800056	7229	28869
16	SRR3996307	3135398	NODE_1_length_7253_cov_128.802661	7253	26686
17	SRR3996308	3484730	NODE_1_length_7242_cov_138.079389	7242	28619
18	SRR3996309	3936272	NODE_1_length_7252_cov_154.928760	7252	32102
19	SRR3996310	7108732	NODE_3_length_7242_cov_80.198057	7242	16614
20	SRR3996311	3574574	NODE_1_length_7263_cov_44.656657	7263	9215
21	SRR3996312	4000478	NODE_1_length_7225_cov_49.503061	7225	10194
22	SRR3996313	3423120	NODE_1_length_7255_cov_43.562206	7255	9000
23	SRR3996314	4011916	NODE_1_length_7252_cov_49.360638	7252	10185
24	SRR3996315	4583984	NODE_1_length_7238_cov_55.858075	7238	11516
25	SRR3996316	6611772	NODE_3_length_7230_cov_77.563743	7230	16102
26	SRR3996317	3264724	NODE_1_length_7225_cov_42.483166	7225	8749
27	SRR3996318	4005488	NODE_1_length_7229_cov_52.586485	7229	10859
28	SRR3996319	3671422	NODE_1_length_7224_cov_47.962293	7224	9845

29	SRR3996320	4157940	NODE_1_length_7242_cov_53.066343	7242	10958
30	SRR3996321	4630690	NODE_1_length_7224_cov_58.738138	7224	12111
31	SRR3996322	2543040	NODE_1_length_7227_cov_29.566620	7227	6121
32	SRR3996323	4178954	NODE_1_length_7226_cov_54.422590	7226	11161
33	SRR3996324	4558744	NODE_1_length_7224_cov_57.040907	7224	11713
34	SRR3996325	3827718	NODE_3_length_7229_cov_50.153504	7229	10269
35	SRR3996326	4540644	NODE_1_length_7224_cov_57.735216	7224	11858
36	SRR3996327	5214426	NODE_3_length_7225_cov_64.908180	7225	13373
37	SRR3996328	5945504	NODE_1_length_7266_cov_96.583345	7266	20209
38	SRR3996329	3017054	NODE_1_length_7254_cov_53.239158	7254	11116
39	SRR3996330	3374736	NODE_1_length_7227_cov_59.388873	7227	12334
40	SRR3996331	2922600	NODE_1_length_7251_cov_51.611034	7251	10821
41	SRR3996332	3383280	NODE_1_length_7275_cov_60.364742	7275	12671
42	SRR3996333	3867434	NODE_1_length_7272_cov_67.355079	7272	14090
43	SRR3996334	9371940	NODE_2_length_7242_cov_169.200416	7242	35277
44	SRR3996335	4791638	NODE_1_length_7256_cov_95.007619	7256	19705
45	SRR3996336	5295560	NODE_1_length_7254_cov_104.372592	7254	21676
46	SRR3996337	4598556	NODE_1_length_7254_cov_91.565332	7254	19048
47	SRR3996338	5291100	NODE_1_length_7228_cov_102.721457	7228	21271
48	SRR3996339	6054256	NODE_2_length_7229_cov_118.713988	7229	24578
49	SRR3996340	7327836	NODE_4_length_7240_cov_109.874774	7240	22736
50	SRR3996341	3706678	NODE_1_length_7226_cov_62.334956	7226	12762
51	SRR3996342	4606356	NODE_3_length_7227_cov_75.566481	7227	15493
52	SRR3996343	4362568	NODE_1_length_7242_cov_73.607217	7242	15172
53	SRR3996344	4985626	NODE_1_length_7241_cov_79.689200	7241	16397
54	SRR3996345	5394446	NODE_2_length_7229_cov_86.880701	7229	17844
55	SRR3996346	3547136	NODE_1_length_7225_cov_24.296745	7225	5030
56	SRR3996347	4703250	NODE_2_length_7241_cov_33.782760	7241	7003
57	SRR3996348	5288924	NODE_2_length_7222_cov_38.890466	7222	8055
58	SRR3996349	4524976	NODE_3_length_7228_cov_33.404116	7228	6936
59	SRR3996350	5308372	NODE_3_length_7253_cov_38.098808	7253	7962
60	SRR3996351	6045234	NODE_4_length_7243_cov_43.543020	7243	9051
61	SRR3996352	5673488	NODE_1_length_7254_cov_60.193986	7254	12589
62	SRR3996353	3060214	NODE_1_length_7242_cov_36.841499	7242	7699
63	SRR3996354	3262504	NODE_1_length_7227_cov_37.589291	7227	7842
64	SRR3996355	2979984	NODE_1_length_7251_cov_35.679235	7251	7457
65	SRR3996356	3369398	NODE_1_length_7242_cov_38.891048	7242	8122
66	SRR3996357	3747642	NODE_1_length_7228_cov_43.202336	7228	8996
67	SRR3996358	3891366	NODE_1_length_7171_cov_9.828567	7171	2026
68	SRR3996359	3679016	NODE_5_length_6340_cov_11.018087	6340	2104
69	SRR3996360	4438762	NODE_5_length_5625_cov_13.832319	5625	2506
70	SRR3996361	3849506	NODE_9_length_5093_cov_12.595332	5093	2166
71	SRR3996362	4464492	NODE_1_length_7224_cov_11.726172	7224	2438
72	SRR3996363	5077610	NODE_2_length_7213_cov_12.740663	7213	2633
73	SRR5209949	1681916	NODE_2_length_4547_cov_17.073392	4547	2389
74	SRR5209950	7171084	NODE_1_length_7252_cov_49.335690	7252	10096
75	SRR5209951	8286690	NODE_1_length_7252_cov_56.373943	7252	11561
76	SRR5209952	8699344	NODE_1_length_7240_cov_57.454255	7240	11864
77	SRR5209953	9187002	NODE_1_length_7244_cov_61.880117	7244	12786
78	SRR5209954	1830290	NODE_1_length_5666_cov_35.074436	5666	5985
79	SRR5209955	6262264	NODE_1_length_7256_cov_94.620308	7256	19890
80	SRR5209956	7134546	NODE_2_length_7254_cov_107.393238	7254	22522
81	SRR5209957	7555390	NODE_1_length_7240_cov_110.002499	7240	23128
82	SRR5209958	7979054	NODE_1_length_7258_cov_117.277662	7258	24839
83	SRR5209959	1994696	NODE_1_length_7195_cov_22.165828	7195	4503
84	SRR5209960	3603950	NODE_1_length_7294_cov_39.381563	7294	8145
85	SRR5209961	4075412	NODE_1_length_7259_cov_43.199806	7259	8872
86	SRR5209962	4289318	NODE_1_length_7277_cov_44.716436	7277	9253
87	SRR5209963	4496366	NODE_1_length_6319_cov_53.759153	6319	9827
88	SRR5209964	2953526	NODE_1_length_5453_cov_27.076625	5453	4411

89	SRR5209965	4196900	NODE_1_length_5491_cov_38.284928	5491	6251
90	SRR5209966	4790670	NODE_1_length_6039_cov_41.198267	6039	7259
91	SRR5209967	4898600	NODE_1_length_5641_cov_42.183797	5641	7021
92	SRR5209968	5266020	NODE_1_length_6034_cov_42.427881	6034	7540
93	SRR5209969	2699878	NODE_1_length_7045_cov_22.282962	7045	4459
94	SRR5209970	3873384	NODE_1_length_7216_cov_30.961415	7216	6322
95	SRR5209971	4457218	NODE_1_length_6321_cov_40.010821	6321	7265
96	SRR5209972	4646380	NODE_1_length_7226_cov_35.905828	7226	7370
97	SRR5209973	4991802	NODE_1_length_7227_cov_37.786370	7227	7764
98	SRR5209974	1298996	NODE_1_length_6236_cov_13.686078	6236	2449
99	SRR5209975	3814714	NODE_1_length_7255_cov_33.989471	7255	6935
100	SRR5209976	4418790	NODE_1_length_7255_cov_39.265170	7255	8012
101	SRR5209977	4576702	NODE_1_length_7164_cov_39.982180	7164	8102
102	SRR5209978	4918800	NODE_2_length_5161_cov_54.615144	5161	8632
103	SRR5209979	2448528	NODE_1_length_7224_cov_31.000974	7224	6388
104	SRR5209980	3395376	NODE_1_length_7273_cov_41.908375	7273	8692
105	SRR5209981	3912826	NODE_1_length_7224_cov_48.012523	7224	9907
106	SRR5209982	4119208	NODE_1_length_7226_cov_49.164279	7226	10118
107	SRR5209983	4370296	NODE_1_length_7255_cov_53.094347	7255	11014
108	SRR5209984	2776364	NODE_3_length_4107_cov_46.730221	4107	5690
109	SRR5209985	3948450	NODE_1_length_5546_cov_49.755854	5546	7921
110	SRR5209986	4547140	NODE_1_length_5643_cov_56.904923	5643	9175
111	SRR5209987	4644746	NODE_1_length_5490_cov_58.003851	5490	9141
112	SRR5209988	4996950	NODE_2_length_4709_cov_72.323630	4709	9996
113	SRR5209989	2004870	NODE_3_length_3950_cov_18.254792	3950	2267
114	SRR5209990	2828188	NODE_2_length_4674_cov_23.942204	4674	3413
115	SRR5209991	3256970	NODE_1_length_5907_cov_21.731857	5907	3737
116	SRR5209992	3366278	NODE_1_length_6255_cov_22.125442	6255	4007
117	SRR5209993	3595348	NODE_1_length_6315_cov_21.996018	6315	4027
118	SRR5209994	2413516	NODE_1_length_6305_cov_30.295788	6305	5491
119	SRR5209995	3338648	NODE_1_length_7155_cov_35.137117	7155	7156
120	SRR5209996	3847646	NODE_1_length_7228_cov_41.614240	7228	8517
121	SRR5209997	4054822	NODE_1_length_7220_cov_41.726855	7220	8621
122	SRR5209998	4318312	NODE_1_length_5687_cov_53.983186	5687	9129
123	SRR5209999	2479116	NODE_1_length_6914_cov_28.169405	6914	5577
124	SRR5210000	3420676	NODE_1_length_7258_cov_34.519319	7258	7134
125	SRR5210001	3906638	NODE_1_length_6022_cov_45.869674	6022	8069
126	SRR5210002	4051316	NODE_1_length_7259_cov_40.729438	7259	8444
127	SRR5210003	4370192	NODE_2_length_6295_cov_48.275807	6295	8838
128	SRR5210004	2345804	NODE_1_length_6475_cov_28.129233	6475	5224
129	SRR5210005	3369612	NODE_1_length_7209_cov_34.772309	7209	7103
130	SRR5210006	3893232	NODE_1_length_7251_cov_40.153174	7251	8229
131	SRR5210007	3991928	NODE_1_length_7242_cov_41.196391	7242	8495
132	SRR5210008	4309136	NODE_1_length_7258_cov_43.743110	7258	9065

All viral reads were mapped to the HemVT genome to calculate sequencing depth. As shown in Figure 1, a sufficiently large number of viral reads contributed to the assembly of the HemVT contig, indicating that its sequence is highly accurate.

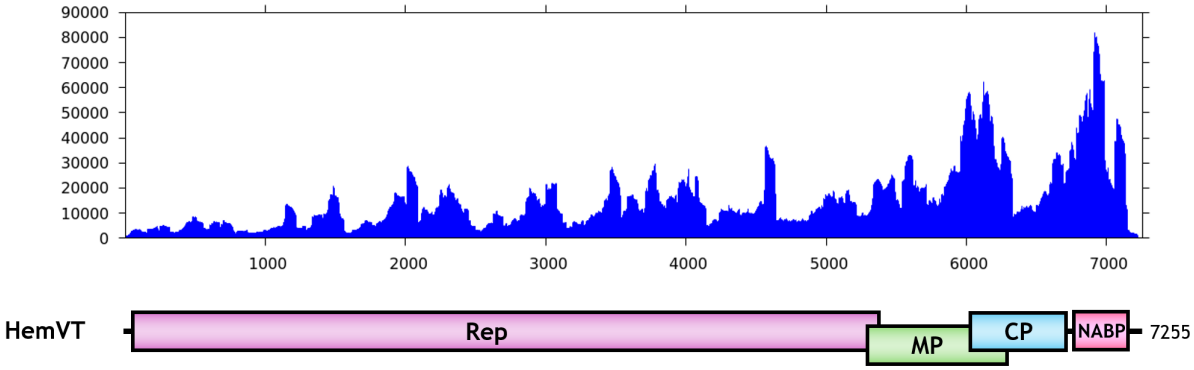

Figure 1. Sequencing depth of the HemVT genome contig. The sequencing depth (top) and genomic organization (bottom) of the HemVT genome contig are depicted.