	156	5'-AGGCTTTTTAGATGCCTCAGCAGCA-3'	
29	188 195	5'-YAACACTGGGAGTWCTCGTGCCACA-3' 5'-YTAGTCCTACCTCCCTTGCGGAGTC-3'	860
30	190 195	5'-AYAACACTGGGAGTWCTCGTGCCAC-3' 5'-YTAGTCCTACCTCCCTTGCGGAGTC-3'	860
31	178 187	5'-AYACWACYAGCTATCGTGAAGCAGC-3' 5'-CCTRTCACCATTRATAACAGCAGCA-3'	730
32	198 197	5'-GAAGAGAGGTGTYTACTGCTGCCGT-3' 5'-AAATTGATCTRATAACACCAGCAGC-3'	930
33	198 195	5'-GAAGAGAGGTGTYTACTGCTGCCGT-3' 5'-YTAGTCCTACCTCCCTTGCGGAGTC-3'	490

表 10　HIV1 第 1 二次グループ内共通　degenerate プライマー

Primer Set ID	Forward Primer ID	Forward Primer Position	Forward Primer Sequence	Reverse Primer ID	Reverse Primer Position	Reverse Primer Sequence	PCR fragment size	Count of target templates
68	13	4274	ACAATTWTAHRAGAAAAGGGG	160	4536	AYACWAHSANBRCCTGCCATC	260	91
63	13	4274	ACAATTTTAWRAGAAAAGGGG	16	4538	CCAYACWAHYANCACCTGCCA	260	88
75	4	7201	DCGYKRMCRGYACAGGCCAGA	27	7615	TAWYYTKVTRTACCACAGCCA	410	72
59	13	4279	ACAATTWTAHRAGAAAAGGGG	299	4388	YTGTCYCTGWAATAAACCCGA	100	69
76	4	7201	DCGYTRMCRGYACAGGCCAGA	104	7765	TYYKRTTYYKYCGGGCCTGTC	560	65
59	13	4217	ACAATTWTAHRAGAAAAGGGG	199	4325	TGTCYCTGWAATAAACCCGAA	100	64
67	13	4203	ACAATTWTAHRAGAAAAGGGG	116	4660	TCYCCTGKVWKYAGACCCCAA	450	57
80	4	672	GRCCHRYYSCRCCAGGCCAGA	52	1310	YCYYBYBTYKBDGGAAGGCCA	630	51

表 11　HIV1 第 2 二次グループ内共通　degenerate プライマー

Primer Set ID	Forward Primer ID	Forward Primer Position	Forward Primer Sequence	Reverse Primer ID	Reverse Primer Position	Reverse Primer Sequence	PCR fragment size	Count of target templates
62	219	4855	RARAGGGGGGATTGGGGGGTA	130	5104	AYACWAYCRKYVCCTGCCATC	240	33
73	5	4262	CMAYWWTWWWAVAAAAGGGGG	130	4523	AYACWAYYRKYVCCTGCCATC	260	32
72	394	226	RGGARRRAGATRGGTGCGAGA	48	628	YTGRTGTRYYATTTGCCCTTG	400	30
64	3	4261	ACAATTWTAAAAGAAAAGGGG	130	4523	AYACWAYYRKYVCCTGCCATC	260	30
56	349	4138	TTGGGGGRTACAGTGCAGGGG	130	4376	AYACAAYCRKCMCCTGCCATC	230	29
64	219	4244	RARAGGGGGGATTGGGGGGTA	258	4787	HRTGDATTAGYTGGTCTGCCA	540	28
63	394	141	AGGARAGAGATRGGTGCGAGA	84	665	TYADATCTBVKGGGGTGGCTC	520	28
66	219	4244	RARAGGGGGGATTGGGGGGTA	132	4966	YTTNYBMAYACTAGGCAGAGG	720	28
61	219	4206	RAAAGGGGGGATTGGGGGGTA	21	4457	CCAYACWAYYRKCACCTGCCA	250	27
63	158	229	ARAGAGATRGGTGCGAGAGCG	18	884	GBTCYCTYAWYTGGCCTGGTG	650	27
69	531	154	AGYGCRCWCRGCAAGAGGCGA	48	628	YTGRTGTRCYATTTGCCCTTG	470	27
60	117	1717	CYSTTTGGCRRCGACCCCTTG	283	2435	CYYTTCYAYCCYTGTGGAAGC	710	27

表 12　HIV1 第 3 二次グループ内共通　degenerate プライマー

Primer Set ID	Forward Primer ID	Forward Primer Position	Forward Primer Sequence	Reverse Primer ID	Reverse Primer Position	Reverse Primer Sequence	PCR fragment size	Count of target templates
82	25	3683	ADRKKYMVDNTRAAAGGGGAA	108	4369	AYACWDYCABYVCCTGCCATC	680	44
72	163	3937	DARRGCNGCHTGTTGGTGGGC	108	4369	ACACADTCABCVCCTGCCATC	430	44
81	208	3682	HADRKKYMVDNTAAAAGGGGA	108	4369	AYACWDYCABYVCCTGCCATC	680	43
70	163	3937	DARRGCHGCHTGTTGGTGGGC	46	4371	CMACACADTCABCACCTGCCA	430	43
80	16	3684	DRKKYMRDNTRAAAGGGGAAG	108	4369	AYACWDYCABYVCCTGCCATC	680	43
80	163	3823	DARRGCNGCHTGTTGGTGGGC	29	4451	TYYCCYRNNTKYAGACCCCAA	620	42
69	163	4560	DAARGCDGCHTGTTGGTGGGC	126	4838	TGTCYCTGWAAYAAACCCGAA	270	42
68	163	3826	DAARGCDGCHTGTTGGTGGGC	183	4105	YTGTCYCTGWAATAAACCCGA	270	41
65	113	3977	GGDRWYYCCTAYAATCCCCAA	46	4371	CMACACADYCAYCACCTGCCA	390	40
66	113	3866	GGDRWYYCCTAYAATCCCCAA	108	4258	ACACADYCAYCVCCTGCCATC	390	40
61	139	3813	ARGCAGAAGTBATCCCAGCAG	108	4369	ACACADYCAYCVCCTGCCATC	550	40
72	25	3860	ADRKKYMVRBTRAAAGGGGAA	126	4392	TGTCYCTGWAAYAAACCCGAA	530	40

表 13　GenBank から入手した HCV ウイルス塩基配列の一次グループ化(黄色で HCV ゲノム相当データを示す)

一次グループ番号	塩基配列件数	標準サイズ	GenBank 上の Annotation の例
113	7998	542	Hepatitis C virus subtype 1a isolate 44238-Lqz nonfunctional polyprotein gene partial sequence
32	1788	1518	Sequence 63 from Patent WO2005087813
66	1731	850	SID nucleic acids and polypeptides selected from a pathogenic strain of the hepatitis C virus and applications
83	1703	670	Hepatitis C virus strain D78 core protein gene partial cds
102	1350	594	Identification of amino acids in hepatitis C virus nonstructural protein NS3 involved in interaction with the p53 tumor suppressor and its use for medical development
70	1061	802	HCV non-structural region 4
84	922	652	cDNA encoding genes derived from hepatitis C virus
108	809	573	Hepatitis C virus clone TVC73D21 envelope glycoprotein (E2) gene partial cds
177	647	377	Hepatitis C virus isolate UDH253 NS5B gene partial cds
129	442	468	Hepatitis C virus core-E1 RNA for polyprotein partial cds clone: KK20203-14
227	428	278	Hepatitis C virus clone P6LBLc19 E2 protein gene partial cds
116	410	529	Hepatitis C virus isolate P1 clone A5887 polyprotein precursor gene partial cds
164	367	409	Hepatitis C virus subtype 1b clone Cu44 polyprotein gene partial cds
190	358	347	Hepatitis C virus isolate N47 from India core protein gene partial cds
103	332	581	Hepatitis C virus clone 5 polyprotein gene partial cds
182	317	372	Hepatitis C virus isolate 20024L9 E1 glycoprptein gene partial cds
216	311	289	Hepatitis C virus isolate SRB21 5 UTR
78	309	756	Sequence 67 from Patent WO2005087813
121	299	498	Hepatitis C virus isolate C clone 204 serine protease (NS3) gene partial cds
46	256	1179	Hepatitis C virus gene for NS5 partial cds isolate: SR037
2	235	9711	**Hepatitis C virus genotype 2 complete genome**
142	220	430	Hepatitis C virus isolate QC272 polyprotein gene partial cds
208	213	320	Hepatitis C virus isolate 0558-03 NS5B gene partial cds
207	183	321	Hepatitis C virus isolate 934-00 NS5B gene partial cds
21	173	2055	Hepatitis C virus partial mRNA for NS3/4A protein clone FR_HCVNS3/4A_3a-4NS_32
117	172	528	Hepatitis C virus isolate P2 clone E7800 polyprotein precursor gene partial cds
214	169	294	Hepatitis C virus isolate G2MP083 E2 gene partial cds
199	168	340	Hepatitis C virus isolate QC308 non-structural NS5B gene partial cds
201	162	340	Hepatitis C virus subtype 2a gene 5 noncoding region isolate: K-0041
90	160	642	Sequence 3 from Patent EP1845108
80	159	743	Hepatitis C virus genotype 1 partial gene for polyprotein genomic RNA isolate NG28T1 clone cn
39	157	1356	Hepatitis C virus partial gene for polyprotein (NS5A) genomic RNA isolate patient 3a-4NS_24
101	157	600	Hepatitis C virus non-structural protein 5 domain mRNA partial cds
60	154	946	Hepatitis C virus subtype 1b isolate PatS17-w12 non-structural 5b protein gene partial cds
133	148	447	Hepatitis C virus isolate MAD-O22698 nonstructural protein 5b (NS5B) gene partial cds
172	138	397	Hepatitis C virus isolate CC654C8 envelope protein gene partial cds
173	127	383	Hepatitis C virus isolate N104 from India RNA-dependent RNA polymerase gene partial cds
179	125	375	Hepatitis C virus isolate sy1 NS5b protein gene partial cds
131	122	461	Hepatitis C virus subtype 1a gene for polyprotein (NS5B region) partial cds isolate: tv134

218	122	289	Hepatitis C virus isolate AV3 polyprotein gene partial cds
1	121	11062	HCV VARIANTS
128	119	473	Hepatitis C virus subtype 3a isolate 51775 polyprotein gene partial cds
114	118	533	Hepatitis C virus gene for envelope protein E 1
160	116	419	Hepatitis C virus isolate DON39 NS5B protein (NS5B) gene partial cds
104	104	580	Hepatitis C virus isolate BE02-14-1860 nonfunctional non-structural protein 4b (NS4b) gene partial sequence
110	103	543	Hepatitis C virus subtype 1b gene for polyprotein (NS5B region) partial cds isolate: TV112
3	100	9456	Hepatitis C virus genotype 3 genome
107	97	575	Hepatitis C virus isolate RSA04-55 nonfunctional polyprotein due to mutation genomic sequence
24	93	1899	Vaccine against HCV
109	89	568	Hepatitis C virus subtype 6e gene for polyprotein partial cds isolate: TV366
4	87	9450	Hepatitis C virus subtype 6m isolate C-0208 complete genome
125	86	477	Primer set for detection of HCV
178	85	377	Hepatitis C virus isolate CRM092 NS5B gene partial cds
19	84	2304	cDNA encoding genes derived from hepatitis C virus
169	76	402	Hepatitis C virus isolate G2MP143 NS5B (NS5B) gene partial cds
8	75	7855	Hepatitis C virus isolate TN168-1del polyprotein gene partial cds
126	73	474	Hepatitis C virus strain SZ206 polyprotein gene partial cds
137	72	438	Hepatitis C virus subtype 1b gene for polyprotein (Core/E1 region) partial cs isolate: TAJ81
22	69	2055	Hepatitis C virus subtype 2b isolate cs8 NS3/4a protease gene partial cds
180	68	375	Hepatitis C virus isolate gb9 NS5b protein gene partial cds
167	64	403	Hepatitis C virus isolate RSA-20-94 NS5B (NS5B) gene partial cds
123	54	495	Hepatitis C virus subtype 1b strain 1b57 nonstructural protein 5A (NS5A) gene partial cds
143	54	428	Hepatitis C virus isolate C-0185 clone 20 polyprotein gene partial cds
132	53	460	Hepatitis C virus subtype 6o gene for polyprotein (NS5B region) partial cds isolate: TV48
146	51	424	Hepatitis C virus isolate QC334 polyprotein gene partial cds
151	50	424	Hepatitis C virus isolate QC308 polyprotein gene partial cds
174	49	380	Hepatitis C virus isolate 18 envelope mRNA partial cds
88	47	648	Hepatitis C virus isolate N-IT19-SR NS5A gene partial cds
68	46	818	cDNA encoding genes derived from hepatitis C virus
112	46	543	Hepatitis C virus clone 19_1166 NS3 protease gene partial cds
120	46	500	Hepatitis C virus subtype 2a gene for polyprotein (NS5B region) partial cds isolate: TV63
111	45	543	Hepatitis C virus clone 22_1156 NS3 protease gene partial cds
171	45	400	Hepatitis C virus isolate HCV5UTRMG10 polyprotein gene partial cds
5	44	9400	Hepatitis C virus subtype 1b complete genome
11	42	5955	Hepatitis C virus partial gene for polyprotein genomic RNA isolate Taiwanese
62	42	932	polyprotein [hepatitis C virus HCV Genomic RNA 932 nt]
130	42	465	Hepatitis C virus subtype 6a isolate 51048 polyprotein gene partial cds
170	41	401	Hepatitis C virus isolate C-0046 clone 21 polyprotein gene partial cds
25	38	1830	Hepatitis C virus polyprotein mRNA partial cds
30	36	1611	Hepatitis C virus isolate JV115 nonfunctional polyprotein gene partial sequence
82	36	673	DNA encoding hepatitis C virus antigenic peptide
187	36	356	Hepatitis C virus envelope and non-structural protein hypervariable region (E1-E2/NS1) gene partial cds
192	34	346	Hepatitis C virus isolate 23 envelope mRNA partial cds
196	33	342	Hepatitis C virus partial NS5A gene for non structural protein 5A isolate NR11
206	31	324	Hepatitis C virus gene for polyprotein partial cds strain: KM95_E2_12

23	29	1950	Hepatitis C virus subtype 1b clone Cu-1 polyprotein gene partial cds
26	29	1818	cDNA encoding genes derived from hepatitis C virus
158	27	420	DNA encoding hepatitis C virus antigenic peptide
51	25	1110	Sequence 29 from Patent EP1555270
36	24	1404	Hepatitis C virus isolate Pt20 polyprotein gene partial cds
7	22	8024	Hepatitis C virus replicon pSGR-JFH1 gene for neomysin resistance gene product hepatitis C virus nonstructural protein complete cds
81	22	715	Hepatitis C virus subtype 5a partial gene for polyprotein genomic RNA isolate FrCF123
181	22	372	Hepatitis C virus isolate 20024P7 E1 glycoprptein gene partial cds
118	21	513	Hepatitis C virus subtype 6a strain 6a45 NS5A protein (NS5A) gene partial cds
220	21	288	Hepatitis C virus isolate G2MP140 E2 gene partial cds
138	20	438	Hepatitis C virus subtype 2c gene for polyprotein (Core/E1 region) partial cs isolate: TAJ74
224	20	282	Hepatitis C virus 11/40 polyprotein gene partial cds
135	19	441	E2/NS1=large envelope glycoprotein {patient D} [hepatitis C virus HCV mRNA Partial 441 nt]
99	17	618	Sequence 22 from Patent WO2006134280
203	17	340	Hepatitis C virus isolate RSA02-12 non-structural protein 5b (NS5b) gene partial cds
159	16	419	Hepatitis C virus isolate DON51 NS5B protein (NS5B) gene partial cds
33	15	1504	HCV truncated genome RNA
63	15	921	cDNA encoding genes derived from hepatitis C virus
195	15	342	Hepatitis C virus strain D82 NS5b protein gene partial cds
209	15	318	Hepatitis C virus isolate G2MP041 NS5B (NS5B) gene partial cds
57	14	974	cDNA encoding genes derived from hepatitis C virus
94	14	630	cDNA sequence derived from hepatitis virus
231	14	272	Hepatitis C virus strain 1870-04 NS5B gene partial cds
17	13	2552	Hepatitis C virus gene for structural protein partial cds isolate: HC-J7
31	12	1588	Hepatitis C virus strain D54 deletion mutant polyprotein gene partial cds
67	12	849	cDNA encoding genes derived from hepatitis C virus
69	11	807	cDNA sequence derived from hepatitis C virus
13	10	4129	Hepatitis C virus genotype 2 gene for polyprotein partial cds
43	10	1230	Purified Active HCV NS2/3 Protease
53	10	1084	METHODS FOR THE SIMULTANEOUS DETECTION OF HCV ANTIGENS AND HCV ANTIBODIES
58	10	963	Hepatitis C virus strain QC125 polyprotein gene partial cds
134	10	441	E2/NS1=envelope glycoprotein [hepatitis C virus HCV agammaglobulinemic patient isolate Genomic RNA 441 nt]
20	9	2302	HCV truncated genome RNA
28	9	1683	Hepatitis C virus partial gene for polyprotein (E1/E2) genomic RNA isolate patient 3a-4NS
45	9	1197	Hepatitis C virus strain QC260 5 UTR; and polyprotein gene partial cds
232	9	271	Hepatitis C virus strain 239-01 NS5B gene partial cds
34	8	1431	cDNA encoding genes derived from hepatitis C virus
38	8	1398	DNA encoding the peptide that has HCV antigenic activity
41	8	1293	METHODS FOR THE SIMULTANEOUS DETECTION OF HCV ANTIGENS AND HCV ANTIBODIES
44	8	1227	Hepatitis C virus gene for NS5 protein partial cds isolate: HC-J7
48	8	1154	Hepatitis C virus gene for NS5 partial cds isolate: NE125
77	8	763	cDNA sequence derived from hepatitis virus
85	8	651	Hepatitis C virus partial gene for polyprotein (NS2) genomic RNA isolate patient 3a-4NS
140	8	436	Hepatitis C virus isolate QC310 polyprotein gene partial cds
145	8	424	Hepatitis C virus isolate 2213 polyprotein gene partial cds

86	7	651	Hepatitis C virus partial gene for polyprotein (NS2) genomic RNA isolate patient 1b-4
93	7	630	Sequence 29 from Patent EP1845108
95	7	629	cDNA encoding genes derived from hepatitis C virus
100	7	600	SID nucleic acids and polypeptides selected from a pathogenic strain of the hepatitis C virus and applications
139	7	436	Hepatitis C virus isolate P10-ACS-1985 NS5B protein gene partial cds
185	7	366	Hepatitis C virus isolate S1 non-structural protein 5A gene partial cds
188	7	351	Hepatitis C virus isolate MAD-G20206 from Madagascar envelope polyprotein E1/E2 gene partial cds
200	7	340	Hepatitis C virus strain QC69 non-structural protein NS5B gene partial cds
228	7	277	Hepatitis C virus clone P2PW72c3 E2 protein gene partial cds
61	6	945	Hepatitis C virus partial gene for polyprotein (NS4) genomic RNA isolate patient 3a-3NS
147	6	424	Hepatitis C virus isolate QC327 polyprotein gene partial cds
148	6	424	Hepatitis C virus isolate QC292 polyprotein gene partial cds
191	6	346	Hepatitis C virus isolate HCVNS2-HC9A99966 NS2 (NS2) gene partial cds
16	5	2591	cDNA encoding genes derived from hepatitis C virus
18	5	2433	Hepatitis C virus subtype 3a isolate Ch7 polyprotein gene partial cds
52	5	1084	cDNA encoding genes derived from hepatitis C virus
55	5	1011	Purified Active HCV NS2/3 Protease
91	5	641	cDNA sequence derived from hepatitis virus
97	5	623	cDNA to Hepatitis C virus genomic RNA
183	5	371	An Oligoribonucleotide and an Peptide Nucleic Acid Inhibiting the Action of Hepatitis C Virus
56	4	981	Improved Immunodiagnostic assays using reducing agents
124	4	489	cDNA sequence derived from hepatitis virus
156	4	424	Hepatitis C virus isolate QC78 polyprotein gene partial cds
193	4	345	Optimized Multi-epitope Constructs and Uses Thereof
197	4	340	Hepatitis C virus isolate QC287 non-structural NS5B gene partial cds
215	4	291	Hepatitis C virus isolate G2MP002 E2 gene partial cds
221	4	285	Hepatitis C virus subtype 1a gene for polyprotein (NS5B region) partial cds isolate: TV147
237	4	262	Hepatitis C virus isolate E2-2ac.156#2 polyprotein gene partial cds
10	3	6264	Nucleic acid and gene derived from new HCV strain and replicon-replicating cell using said gene
14	3	3610	Hepatitis C virus strain D88 polyprotein gene partial cds
27	3	1773	Hepatitis C virus genomic RNA modified to be self-replicable
37	3	1398	Hepatitis C virus strain HCVQ4 NS5A (NS5A) gene partial cds
42	3	1290	A nucleic acid construct comprising a full-length genome of human Hepatitis C virus a recombinant cell transfected with the same replicating the full-length virus genome and a process for producing human Hepatitis C virus particles
75	3	781	SID nucleic acids and polypeptides selected from a pathogenic strain of the hepatitis C virus and applications
89	3	645	Vaccine against HCV
136	3	439	An Oligoribonucleotide and an Peptide Nucleic Acid Inhibiting the Action of Hepatitis C Virus
149	3	424	Hepatitis C virus isolate QC269 polyprotein gene partial cds
165	3	408	Hepatitis C virus isolate 57 non-structural protein 5A gene partial cds
198	3	340	Hepatitis C virus isolate QC266 non-structural NS5B gene partial cds
213	3	296	Hepatitis C virus isolate 934 genotype 5 NS5B protein (NS5B) gene partial cds
226	3	279	Hepatitis C virus subtype 6n mRNA for core protein partial cds isolate: MYAN-C68
12	2	4296	cDNA encoding genes derived from hepatitis C virus
49	2	1143	DNA encoding Hepatitis C virus antigen
59	2	948	Optimized Multi-epitope Constructs and Uses Thereof

73	2	783	Hepatitis C virus type 3a partial polyprotein NS4B protein genomic RNA
74	2	783	Hepatitis C virus type 2b partial polyprotein NS4B protein genomic RNA
76	2	771	cDNA sequence derived from hepatitis virus
92	2	638	Hepatitis C virus isolate 16 NS5B gene partial cds
96	2	625	SID nucleic acids and polypeptides selected from a pathogenic strain of the hepatitis C virus and applications
98	2	621	Hepatitis C virus isolate ETR4 NS5A protein gene partial cds
119	2	503	cDNA encoding genes derived from hepatitis C virus
122	2	496	SID nucleic acids and polypeptides selected from a pathogenic strain of the hepatitis C virus and applications
127	2	474	Hepatitis C virus subtype 5a partial gene for polyprotein genomic RNA isolate FrCF085
144	2	427	Hepatitis C virus isolate QC153 polyprotein gene partial cds
153	2	424	Hepatitis C virus isolate QC200 polyprotein gene partial cds
155	2	424	Hepatitis C virus isolate QC275 polyprotein gene partial cds
166	2	407	{nonstructural region NS3} [hepatitis C virus HCV F1a isolate Genomic RNA 407 nt]
184	2	366	Hepatitis C virus NS5A gene partial cds strain: JaIFN1
189	2	348	Hepatitis C virus isolate UG-6 polyprotein gene core-E1 junction partial cds
194	2	344	Hepatitis C virus subtype 1a gene for polyprotein (NS5B region) partial cds isolate: VT387
205	2	337	SID nucleic acids and polypeptides selected from a pathogenic strain of the hepatitis C virus and applications
210	2	311	An Oligoribonucleotide and an Peptide Nucleic Acid Inhibiting the Action of Hepatitis C Virus
222	2	285	SID nucleic acids and polypeptides selected from a pathogenic strain of the hepatitis C virus and applications
230	2	273	NS3f3=immunodominant domain [hepatitis C virus HCV host=human mRNA Partial 273 nt]
241	2	255	Hepatitis C virus clone 20 5 UTR
6	1	9357	Hepatitis C virus isolate QC69 polyprotein gene complete cds
9	1	6710	Sequence 28 from Patent EP1555270
15	1	2748	DNA encoding novel proteinase that cleaves between the amino acids 1657 and 1658 of HCV protein
29	1	1664	DNA encoding Hepatitis C virus antigen
35	1	1426	cDNA sequence derived from hepatitis virus
40	1	1353	Hepatitis C virus strain HCV64 NS5A (NS5A) gene partial cds
47	1	1174	DNA encoding Hepatitis C virus antigen
50	1	1120	DNA encoding Hepatitis C virus antigen
54	1	1021	Hepatitis C virus genotype 3a NS5A gene partial cds
64	1	910	DNA encoding Hepatitis C virus antigen
65	1	852	DNA encoding Hepatitis C virus antigen
71	1	795	DNA encoding hepatitis C virus antigenic peptide
72	1	789	Optimized Multi-epitope Constructs and Uses Thereof
79	1	747	Optimized Multi-epitope Constructs and Uses Thereof
87	1	651	A nucleic acid construct comprising a full-length genome of human Hepatitis C virus a recombinant cell transfected with the same replicating the full-length virus genome and a process for producing human Hepatitis C virus particles
105	1	577	Hepatitis C virus isolate 2005TW11003 nonfunctional NS5B gene partial sequence
106	1	576	Hepatitis C virus gene for envelope protein partial cds isolate: ThKF34
115	1	531	SID nucleic acids and polypeptides selected from a pathogenic strain of the hepatitis C virus and applications
141	1	432	cDNA sequence derived from hepatitis virus
150	1	424	Hepatitis C virus isolate QC120 polyprotein gene partial cds
152	1	424	Hepatitis C virus isolate QC136 polyprotein gene partial cds
154	1	424	Hepatitis C virus isolate QC105 polyprotein gene partial cds

157	1	424	Hepatitis C virus strain QC107 polyprotein gene partial cds
161	1	417	Hepatitis C virus isolate sera polyprotein mRNA partial cds
162	1	414	Optimized Multi-epitope Constructs and Uses Thereof
163	1	412	SID nucleic acids and polypeptides selected from a pathogenic strain of the hepatitis C virus and applications
168	1	403	Identification of eukaryotic Internal Ribosome Entry Site (IRES)-Elements
175	1	379	NS5 [hepatitis C virus HCV Chinese isolate Genomic RNA 379 nt]
176	1	377	Hepatitis C virus gene for NS4 protein partial sequence
186	1	365	Hepatitis C virus isolate NR1bNULL1 envelope glycoprotein (E2) gene partial cds
202	1	340	Hepatitis C virus subtype 6a gene for polyprotein (NS5B region) partial cds isolate: VT547
204	1	338	Hepatitis C virus isolate UG-4 polyprotein gene core-E1 junction partial cds
211	1	307	Meth1 and Meth2 Polynucleotides and Polypeptides
212	1	304	envelope protein {deletion mutant} [hepatitis C virus HCV LKM-8 isolate host=autoimmune hepatitis type 2 patient Genomic Mutant 304 nt]
217	1	289	Hepatitis C virus subtype 2i gene for polyprotein (NS5B region) partial cds isolate: VT172
219	1	289	SID nucleic acids and polypeptides selected from a pathogenic strain of the hepatitis C virus and applications
223	1	284	cDNA sequence derived from hepatitis virus
225	1	281	DNA encoding hepatitis C virus antigenic peptide
229	1	273	SID nucleic acids and polypeptides selected from a pathogenic strain of the hepatitis C virus and applications
233	1	271	Hepatitis C virus isolate P.PNB19 5 UTR
234	1	268	DNA encoding hepatitis C virus antigenic peptide
235	1	264	Hepatitis C virus partial truncated polyprotein gene E1 and E2 proteins genomic RNA isolate JB47-10
236	1	264	Optimized Multi-epitope Constructs and Uses Thereof
238	1	259	SID nucleic acids and polypeptides selected from a pathogenic strain of the hepatitis C virus and applications
239	1	258	Hepatitis C virus isolate UG-3 polyprotein gene NS5B region partial cds
240	1	255	Hepatitis C virus genotype RF1_2k/1b gene for polyprotein (NS2 region) partial cds isolate: UZ-IDU19

表14　HCVゲノム塩基配列のサブグループ間を網羅するdegenerate プライマー

PCR産物のゲノム上の位置	Forward Primer名	塩基配列	Reverse Primer名	塩基配列	Size of Products
342 - 456	hcv0802F16	TAGACCGTGCAYCATGAGCAC	hcv0802R1	ACACCCAAYCTRGGGCCCCTG	110
304 - 456	hcv0802F11	GCCTGATAGGGYGCTTGCGAG	hcv0802R1	ACACCCAAYCTRGGGCCCCTG	150
310 - 456	hcv0802F17	TAGGGYGCTTGCGAGTGCCCC	hcv0802R1	ACACCCAAYCTRGGGCCCCTG	140
314 - 456	hcv0802F15	GYGCTTGCGAGTGCCCCGGGA	hcv0802R1	ACACCCAAYCTRGGGCCCCTG	140
150 - 303	hcv0802F1	AGCCATAGTGGTCTKCGGAAC	hcv0802R2	ACCTCCCGGGGCACTCGCAAG	150
167 - 303	hcv0802F10	GAACCGGTGAGTACACCGGAA	hcv0802R2	ACCTCCCGGGGCACTCGCAAG	130
156 - 303	hcv0802F4	AGTGGTCTKCGGAACCGGTGA	hcv0802R2	ACCTCCCGGGGCACTCGCAAG	140
315 - 449	hcv0802F18	YGCTTGCGAGTGCCCCGGGAG	hcv0802R3	AYCTRGGGCCCCTGCGCGGCA	130
304 - 449	hcv0802F11	GCCTGATAGGGYGCTTGCGAG	hcv0802R3	AYCTRGGGCCCCTGCGCGGCA	140
342 - 449	hcv0802F16	TAGACCGTGCAYCATGAGCAC	hcv0802R3	AYCTRGGGCCCCTGCGCGGCA	100
316 - 449	hcv0802F12	GCTTGCGAGTGCCCCGGGAGG	hcv0802R3	AYCTRGGGCCCCTGCGCGGCA	130
314 - 449	hcv0802F15	GYGCTTGCGAGTGCCCCGGGA	hcv0802R3	AYCTRGGGCCCCTGCGCGGCA	130
131 - 262	hcv0802F13	GGMCCCCCCCTCCCGGGAGAG	hcv0802R4	CAAGGCCTTTCGCRACCCAAC	130
132 - 262	hcv0802F14	GMCCCCCCCTCCCGGGAGAGC	hcv0802R4	CAAGGCCTTTCGCRACCCAAC	130
167 - 262	hcv0802F10	GAACCGGTGAGTACACCGGAA	hcv0802R4	CAAGGCCTTTCGCRACCCAAC	90
142 - 262	hcv0802F8	CCCGGGAGAGCCATAGTGGTC	hcv0802R4	CAAGGCCTTTCGCRACCCAAC	120
128 - 262	hcv0802F7	CCAGGMCCCCCCCTCCCGGGA	hcv0802R4	CAAGGCCTTTCGCRACCCAAC	130
129 - 262	hcv0802F6	CAGGMCCCCCCCTCCCGGGAG	hcv0802R4	CAAGGCCTTTCGCRACCCAAC	130
110 - 262	hcv0802F5	ATGAGTGTYGTRCAGCCTCCA	hcv0802R4	CAAGGCCTTTCGCRACCCAAC	150
156 - 262	hcv0802F4	AGTGGTCTKCGGAACCGGTGA	hcv0802R4	CAAGGCCTTTCGCRACCCAAC	100
130 - 262	hcv0802F3	AGGMCCCCCCCTCCCGGGAGA	hcv0802R4	CAAGGCCTTTCGCRACCCAAC	130
304 - 452	hcv0802F11	GCCTGATAGGGYGCTTGCGAG	hcv0802R5	CCAAYCTRGGGCCCCTGCGCG	140
342 - 452	hcv0802F16	TAGACCGTGCAYCATGAGCAC	hcv0802R5	CCAAYCTRGGGCCCCTGCGCG	110
315 - 452	hcv0802F18	YGCTTGCGAGTGCCCCGGGAG	hcv0802R5	CCAAYCTRGGGCCCCTGCGCG	130
310 - 452	hcv0802F17	TAGGGYGCTTGCGAGTGCCCC	hcv0802R5	CCAAYCTRGGGCCCCTGCGCG	140
316 - 452	hcv0802F12	GCTTGCGAGTGCCCCGGGAGG	hcv0802R5	CCAAYCTRGGGCCCCTGCGCG	130
314 - 452	hcv0802F15	GYGCTTGCGAGTGCCCCGGGA	hcv0802R5	CCAAYCTRGGGCCCCTGCGCG	130
167 - 310	hcv0802F10	GAACCGGTGAGTACACCGGAA	hcv0802R6	CTACGAGACCTCCCGGGGCAC	140
342 - 474	hcv0802F16	TAGACCGTGCAYCATGAGCAC	hcv0802R7	GTYTTCCKHGTCGYGCGCACA	130
315 - 474	hcv0802F18	YGCTTGCGAGTGCCCCGGGAG	hcv0802R7	GTYTTCCKHGTCGYGCGCACA	150
316 - 474	hcv0802F12	GCTTGCGAGTGCCCCGGGAGG	hcv0802R7	GTYTTCCKHGTCGYGCGCACA	150
342 - 475	hcv0802F16	TAGACCGTGCAYCATGAGCAC	hcv0802R9	RGTYTTCCKHGTCGYGCGCAC	130
316 - 475	hcv0802F12	GCTTGCGAGTGCCCCGGGAGG	hcv0802R9	RGTYTTCCKHGTCGYGCGCAC	150
167 - 309	hcv0802F10	GAACCGGTGAGTACACCGGAA	hcv0802R10	TACGAGACCTCCCGGGGCACT	140
150 - 309	hcv0802F1	AGCCATAGTGGTCTKCGGAAC	hcv0802R10	TACGAGACCTCCCGGGGCACT	150
156 - 309	hcv0802F4	AGTGGTCTKCGGAACCGGTGA	hcv0802R10	TACGAGACCTCCCGGGGCACT	150
314 - 471	hcv0802F15	GYGCTTGCGAGTGCCCCGGGA	hcv0802R11	TTCCKHGTCGYGCGCACACCC	150
316 - 471	hcv0802F12	GCTTGCGAGTGCCCCGGGAGG	hcv0802R11	TTCCKHGTCGYGCGCACACCC	150
315 - 471	hcv0802F18	YGCTTGCGAGTGCCCCGGGAG	hcv0802R11	TTCCKHGTCGYGCGCACACCC	150
342 - 471	hcv0802F16	TAGACCGTGCAYCATGAGCAC	hcv0802R11	TTCCKHGTCGYGCGCACACCC	120
314 - 472	hcv0802F15	GYGCTTGCGAGTGCCCCGGGA	hcv0802R12	YTTCCKHGTCGYGCGCACACC	150
342 - 472	hcv0802F16	TAGACCGTGCAYCATGAGCAC	hcv0802R12	YTTCCKHGTCGYGCGCACACC	130
315 - 472	hcv0802F18	YGCTTGCGAGTGCCCCGGGAG	hcv0802R12	YTTCCKHGTCGYGCGCACACC	150
316 - 472	hcv0802F12	GCTTGCGAGTGCCCCGGGAGG	hcv0802R12	YTTCCKHGTCGYGCGCACACC	150

表 15　HCV Genotype 共通プライマー設計対象ウイルスゲノム塩基配列(平成 20 年度)

Accession	Geno type	Sub type	Definition	Length
AF271632	1	1a	Hepatitis C virus subtype 1a clone pHCV-1/SF9 A complete genome	9618
AB435162	1	1b	Hepatitis C virus subtype 1b genomic RNA complete genome hiroshima acute hepatitis clone: HCV-KT9	9621
AM910652	1	1g	Hepatitis C virus subtype 1g complete genome	9490
AF177036	2	2a	Hepatitis C virus subtype 2a strain HC-J6CH clone pJ6CF complete genome	9711
AF238486	2	2b	Hepatitis C virus subtype 2b strain MD2b-1 complete genome	9416
EU204645	3	3a	Recombinant Hepatitis C virus S52/JFH1 complete genome	9684
FJ393024	5	5a	Recombinant Hepatitis C Virus SA13/JFH1 complete genome	9669
EU246930	6	6a	Hepatitis C virus strain D9 polyprotein gene complete cds	9376
EF424629	6	6c	Hepatitis C virus subtype 6c isolate Th846 complete genome	9459
DQ314805	6	6e	Hepatitis C virus subtype 6e isolate GX004 complete genome	9468
DQ835764	6	6f	Hepatitis C virus subtype 6f isolate C-0046 complete genome	9454
DQ314806	6	6g	Hepatitis C virus subtype 6g isolate HK6554 complete genome	9462
DQ835762	6	6i	Hepatitis C virus subtype 6i isolate C-0159 complete genome	9458
DQ835769	6	6j	Hepatitis C virus subtype 6j isolate Th553 complete genome	9454
DQ278891	6	6k	Hepatitis C virus subtype 6k isolate KM45 complete genome	9440
EF424628	6	6l	Hepatitis C virus subtype 6l isolate 537796 complete genome	9453
DQ835763	6	6m	Hepatitis C virus subtype 6m isolate C-0208 complete genome	9450
DQ835768	6	6n	Hepatitis C virus subtype 6n isolate D86/93 complete genome	9447
EF424627	6	6o	Hepatitis C virus subtype 6o isolate QC227 complete genome	9450
EF424626	6	6p	Hepatitis C virus subtype 6p isolate QC216 complete genome	9453
EF424625	6	6q	Hepatitis C virus subtype 6q isolate QC99 complete genome	9463
EF632069	6	6t	Hepatitis C virus isolate TV241 complete genome	9460
EF589161	4	4f	Hepatitis C virus subtype 4f strain IFBT88 polyprotein gene partial cds	9304
DQ516083	4	4d	Hepatitis C virus subtype 4d isolate 24 polyprotein gene complete cds	9300

表 16　CoCoMo プログラムによって予測された HCV Genotype 共通プライマーセット

Pair ID	Primer ID (Forward)	塩基配列(Forward)	平均位置 (Forward)	Primer ID (Reverse)	塩基配列 (Reverse)	平均位置 (Reverse)	予想サイズ	プライマーの degeneracy 指数[1]
1	120	CCATAGTGGTCTGCGGAACCGGTGA	129.9583	157	TAGCRGTCTYGCGGGGGCACGCCCA	236.2083	106.25	2
2	87	GGGAGRSCCATAGTGGTCTGCGGAA	122.9583	157	TAGCRGTCTYGCGGGGGCACGCCCA	236.2083	113.25	2
3	140	GGAATYRCCRGRAHGACHGGGTCCT	161.9583	202	GGCCTTTSGCRACCCAACRCTACTC	264.2083	102.25	3
4	137	ATYRCCRGRAHGACHGGGTCCTTTC	164.9583	188	GTACCACAAGGCCTTTSGCRACCCA	273.2083	108.25	4
5	99	CCCCTCCCGGGAGRSCCATAGTGGT	114.9583	142	GCCCAAATBDCCRGRCAYWGAGHGG	216.2083	101.25	7
6	283	AGTGCCCCGGGAGGTCTCGTAGMCC	302.2083	347	TCTGDCCRCCRCCYGGRAACTTDAC	413.2083	111	8
7	67	CCTCCAGGMYYCCCCCTCCCGGGAG	102.9583	142	GCCCAAATBDCCRGRCAYWGAGHGG	216.2083	113.25	8
8	285	GYGCTTGCRAGTGCCCCGGGAGGTC	293.2083	347	TCTGDCCRCCRCCYGGRAACTTDAC	413.2083	120	8
9	283	AGTGCCCCGGGAGGTCTCGTAGMCC	302.2083	359	VGTADACTCCRCCVRCGATCTGDCC	431.2083	129	8
10	285	GYGCTTGCRAGTGCCCCGGGAGGTC	293.2083	359	VGTADACTCCRCCVRCGATCTGDCC	431.2083	138	8
11	283	AGTGCCCCGGGAGGTCTCGTAGMCC	302.2083	374	CACCCAANCKNGGGCCCCTGCGCGG	461.2083	159	8
12	293	TTGCRAGTGCCCCGGGAGGTCTCGT	297.2083	338	GRAACTTDACRTCYDKWGGRCGRCG	398.2083	101	10
13	285	GYGCTTGCRAGTGCCCCGGGAGGTC	293.2083	338	GRAACTTDACRTCYDKWGGRCGRCG	398.2083	105	10
14	112	CTGCGGAACCGGTGAGTWCACCGGA	139.9583	184	RACCCAACRCTACTCGGCTAGCRGT	254.2083	114.25	10
15	288	GCCCCGGGAGGTCTCGTAGMCCGTG	305.2083	375	GCACACCCAANCKNGGGCCCCTGCG	464.2083	159	12
16	305	CTCGTAGMCCGTGCAHCATGAGCAC	317.2083	359	VGTADACTCCRCCVRCGATCTGDCC	431.2083	114	14
17	305	CTCGTAGMCCGTGCAHCATGAGCAC	317.2083	374	CACCCAANCKNGGGCCCCTGCGCGG	461.2083	144	14
18	305	CTCGTAGMCCGTGCAHCATGAGCAC	317.2083	370	CGCACACCCAANCKNGGGCCCCTGC	465.2083	148	14
19	380	GTHTACBTRYTDCCGCGCAGGGGCC	433.2083	457	CNABRASNGGDATRTAYCCCAYGAG	746.2083	313	14
20	305	CTCGTAGMCCGTGCAHCATGAGCAC	317.2083	344	CVRCGATCTGDCCRCCRCCYGGRAA	419.2083	102	15
21	420	GGGCRGGDTGGYTBCTSTCHCCBCG	611.2083	457	CNABRASNGGDATRTAYCCCAYGAG	746.2083	135	15
22	380	GTHTACBTRYTDCCGCGCAGGGGCC	433.2083	446	WRTCGATGACYYTRCCMANRTTVCG	698.2083	265	15
23	380	GTHTACBTRYTDCCGCGCAGGGGCC	433.2083	450	DARNCCRCWNGTNADGGWRTCGATG	715.2083	282	15
24	351	THAAGTTYCCRGGYGGYGGHCAGAT	398.2083	446	WRTCGATGACYYTRCCMANRTTVCG	698.2083	300	15
25	351	THAAGTTYCCRGGYGGYGGHCAGAT	398.2083	450	DARNCCRCWNGTNADGGWRTCGATG	715.2083	317	15
26	358	GYGGYGGHCAGATCGYBGGYGGAGT	410.2083	457	CNABRASNGGDATRTAYCCCAYGAG	746.2083	336	15
27	420	GGGCRGGDTGGYTBCTSTCHCCBCG	611.2083	450	DARNCCRCWNGTNADGGWRTCGATG	715.2083	104	16
28	380	GTHTACBTRYTDCCGCGCAGGGGCC	433.2083	435	NRTTVCGNGAYYKHYGCCGGGGRTC	680.2083	247	16
29	351	THAAGTTYCCRGGYGGYGGHCAGAT	398.2083	435	NRTTVCGNGAYYKHYGCCGGGGRTC	680.2083	282	16
30	358	GYGGYGGHCAGATCGYBGGYGGAGT	410.2083	446	WRTCGATGACYYTRCCMANRTTVCG	698.2083	288	16
31	358	GYGGYGGHCAGATCGYBGGYGGAGT	410.2083	450	DARNCCRCWNGTNADGGWRTCGATG	715.2083	305	16
32	351	THAAGTTYCCRGGYGGYGGHCAGAT	398.2083	455	SNGGDATRTAYCCCAYGAGRTCGGC	740.2083	342	16
33	425	GNTGGGCRGGDTGGYTBCTSTCHCC	608.2083	457	CNABRASNGGDATRTAYCCCAYGAG	746.2083	138	17
34	380	GTHTACBTRYTDCCGCGCAGGGGCC	433.2083	430	KHYGCCGGGGRTCDKTBGGSCCCCA	668.2083	235	17
35	358	GYGGYGGHCAGATCGYBGGYGGAGT	410.2083	435	NRTTVCGNGAYYKHYGCCGGGGRTC	680.2083	270	17
36	351	THAAGTTYCCRGGYGGYGGHCAGAT	398.2083	430	KHYGCCGGGGRTCDKTBGGSCCCCA	668.2083	270	17
37	340	CHDHCCGYCGYCCWMHRGAYGTHAA	377.2083	446	WRTCGATGACYYTRCCMANRTTVCG	698.2083	321	17
38	420	GGGCRGGDTGGYTBCTSTCHCCBCG	611.2083	448	RNCCRCWNGTNADGGWRTCGATGAC	713.2083	102	18
39	425	GNTGGGCRGGDTGGYTBCTSTCHCC	608.2083	450	DARNCCRCWNGTNADGGWRTCGATG	715.2083	107	18
40	305	CTCGTAGMCCGTGCAHCATGAGCAC	317.2083	389	CNGARGTYTTHCKHRYYGCGCGCAC	485.2083	168	18
41	380	GTHTACBTRYTDCCGCGCAGGGGCC	433.2083	416	CDCGVGGDGASAGVARCCAHCCYGC	629.2083	196	18
42	351	THAAGTTYCCRGGYGGYGGHCAGAT	398.2083	416	CDCGVGGDGASAGVARCCAHCCYGC	629.2083	231	18
43	420	GGGCRGGDTGGYTBCTSTCHCCBCG	611.2083	477	DRAAGATAGARAARGAGCAACCRGG	857.2083	246	18
44	420	GGGCRGGDTGGYTBCTSTCHCCBCG	611.2083	474	MARNADRAAGATAGARAARGAGCAA	862.2083	251	18
45	358	GYGGYGGHCAGATCGYBGGYGGAGT	410.2083	430	KHYGCCGGGGRTCDKTBGGSCCCCA	668.2083	258	18
46	390	GGGGCCCNMGNTTGGGTGTGCGCGC	452.2083	457	CNABRASNGGDATRTAYCCCAYGAG	746.2083	294	18
47	340	CHDHCCGYCGYCCWMHRGAYGTHAA	377.2083	435	NRTTVCGNGAYYKHYGCCGGGGRTC	680.2083	303	18
48	380	GTHTACBTRYTDCCGCGCAGGGGCC	433.2083	473	AGCAACCRGGNARRTTBCCKGTTGC	842.2083	409	18
49	331	GAGCACRMWWCCWAAACCBCAAAGA	336.2083	374	CACCCAANCKNGGGCCCCTGCGCGG	461.2083	125	19
50	331	GAGCACRMWWCCWAAACCBCAAAGA	336.2083	370	CGCACACCCAANCKNGGGCCCCTGC	465.2083	129	19
51	442	CNCGBAAYNTKGGYARRGTCATCGA	680.2083	477	DRAAGATAGARAARGAGCAACCRGG	857.2083	177	19
52	442	CNCGBAAYNTKGGYARRGTCATCGA	680.2083	474	MARNADRAAGATAGARAARGAGCAA	862.2083	182	19
53	438	MHGAYCCCCGGCRDMRRTCNCGBAA	662.2083	477	DRAAGATAGARAARGAGCAACCRGG	857.2083	195	19
54	438	MHGAYCCCCGGCRDMRRTCNCGBAA	662.2083	474	MARNADRAAGATAGARAARGAGCAA	862.2083	200	19
55	433	NHVBTGGGGSCCVAMHGAYCCCCGG	648.2083	477	DRAAGATAGARAARGAGCAACCRGG	857.2083	209	19
56	433	NHVBTGGGGSCCVAMHGAYCCCCGG	648.2083	474	MARNADRAAGATAGARAARGAGCAA	862.2083	214	19
57	358	GYGGYGGHCAGATCGYBGGYGGAGT	410.2083	416	CDCGVGGDGASAGVARCCAHCCYGC	629.2083	219	19
58	390	GGGGCCCNMGNTTGGGTGTGCGCGC	452.2083	446	WRTCGATGACYYTRCCMANRTTVCG	698.2083	246	19
59	390	GGGGCCCNMGNTTGGGTGTGCGCGC	452.2083	450	DARNCCRCWNGTNADGGWRTCGATG	715.2083	263	19
60	340	CHDHCCGYCGYCCWMHRGAYGTHAA	377.2083	430	KHYGCCGGGGRTCDKTBGGSCCCCA	668.2083	291	19
61	326	HCATGAGCACRMWWCCWAAACCBCA	332.2083	416	CDCGVGGDGASAGVARCCAHCCYGC	629.2083	297	19

62	340	CHDHCCGYCGYCCWMHRGAYGTHAA	377.2083	451	ARNCCRCWNGTNADGGWRTCGATGA	714.2083	337	19
63	351	THAAGTTYCCRGGYGGYGGHCAGAT	398.2083	407	KDGSYTSBGAYSGYTCNGARGTYTT	500.2083	102	20
64	425	GNTGGGCRGGDTGGYTBCTSTCHCC	608.2083	448	RNCCRCWNGTNADGGWRTCGATGAC	713.2083	105	20
65	340	CHDHCCGYCGYCCWMHRGAYGTHAA	377.2083	389	CNGARGTYTTHCKHRYYGCGCGCAC	485.2083	108	20
66	458	THGCCGAYCTCRTGGGRTAYATHCC	722.2083	477	DRAAGATAGARAARGAGCAACCRGG	857.2083	135	20
67	458	THGCCGAYCTCRTGGGRTAYATHCC	722.2083	474	MARNADRAAGATAGARAARGAGCAA	862.2083	140	20
68	380	GTHTACBTRYTDCCGCGCAGGGGCC	433.2083	415	AVCCDCGVGGDGASAGVARCCAHCC	632.2083	199	20
69	390	GGGGCCCNMGNTTGGGTGTGCGCGC	452.2083	435	NRTTVCGNGAYYKHYGCCGGGGRTC	680.2083	228	20
70	351	THAAGTTYCCRGGYGGYGGHCAGAT	398.2083	415	AVCCDCGVGGDGASAGVARCCAHCC	632.2083	234	20
71	425	GNTGGGCRGGDTGGYTBCTSTCHCC	608.2083	477	DRAAGATAGARAARGAGCAACCRGG	857.2083	249	20
72	340	CHDHCCGYCGYCCWMHRGAYGTHAA	377.2083	416	CDCGVGGDGASAGVARCCAHCCYGC	629.2083	252	20
73	425	GNTGGGCRGGDTGGYTBCTSTCHCC	608.2083	474	MARNADRAAGATAGARAARGAGCAA	862.2083	254	20
74	401	TGGGTGTGCGCGCRRYDMGDAARAC	464.2083	457	CNABRASNGGDATRTAYCCAYGAG	746.2083	282	20
75	458	THGCCGAYCTCRTGGGRTAYATHCC	722.2083	503	GNSHCCARTTCWKCATCATRTCCCA	1307.208	585	20
76	459	CNWGYGGNYTHGCCGAYCTCRTGGG	713.2083	477	DRAAGATAGARAARGAGCAACCRGG	857.2083	144	21
77	459	CNWGYGGNYTHGCCGAYCTCRTGGG	713.2083	474	MARNADRAAGATAGARAARGAGCAA	862.2083	149	21
78	380	GTHTACBTRYTDCCGCGCAGGGGCC	433.2083	410	TNSCRTANAGRGGCCADGSRTANCC	587.2083	154	21
79	414	CHTGGCCYCTNTAYGSNAAYGARGG	578.2083	457	CNABRASNGGDATRTAYCCCAYGAG	746.2083	168	21
80	351	THAAGTTYCCRGGYGGYGGHCAGAT	398.2083	410	TNSCRTANAGRGGCCADGSRTANCC	587.2083	189	21
81	390	GGGGCCCNMGNTTGGGTGTGCGCGC	452.2083	430	KHYGCCGGGGRTCDKTBGGSCCCCA	668.2083	216	21
82	358	GYGGYGGHCAGATCGYBGGYGGAGT	410.2083	415	AVCCDCGVGGDGASAGVARCCAHCC	632.2083	222	21
83	401	TGGGTGTGCGCGCRRYDMGDAARAC	464.2083	446	WRTCGATGACYYTRCCMANRTTVCG	698.2083	234	21
84	401	TGGGTGTGCGCGCRRYDMGDAARAC	464.2083	450	DARNCCRCWNGTNADGGWRTCGATG	715.2083	251	21
85	380	GTHTACBTRYTDCCGCGCAGGGGCC	433.2083	467	CKGTTGCRWARTTNAYSCCRTCYTC	824.2083	391	21
86	390	GGGGCCCNMGNTTGGGTGTGCGCGC	452.2083	477	DRAAGATAGARAARGAGCAACCRGG	857.2083	405	21
87	390	GGGGCCCNMGNTTGGGTGTGCGCGC	452.2083	474	MARNADRAAGATAGARAARGAGCAA	862.2083	410	21
88	459	CNWGYGGNYTHGCCGAYCTCRTGGG	713.2083	503	GNSHCCARTTCWKCATCATRTCCCA	1307.208	594	21
89	340	CHDHCCGYCGYCCWMHRGAYGTHAA	377.2083	388	TYTTHCKHRYYGCGCGCACACCCAA	479.2083	102	22
90	414	CHTGGCCYCTNTAYGSNAAYGARGG	578.2083	446	WRTCGATGACYYTRCCMANRTTVCG	698.2083	120	22
91	414	CHTGGCCYCTNTAYGSNAAYGARGG	578.2083	450	DARNCCRCWNGTNADGGWRTCGATG	715.2083	137	22
92	358	GYGGYGGHCAGATCGYBGGYGGAGT	410.2083	410	TNSCRTANAGRGGCCADGSRTANCC	587.2083	177	22
93	390	GGGGCCCNMGNTTGGGTGTGCGCGC	452.2083	416	CDCGVGGDGASAGVARCCAHCCYGC	629.2083	177	22
94	420	GGGCRGGDTGGYTBCTSTCHCCBCG	611.2083	467	CKGTTGCRWARTTNAYSCCRTCYTC	824.2083	213	22
95	401	TGGGTGTGCGCGCRRYDMGDAARAC	464.2083	435	NRTTVCGNGAYYKHYGCCGGGGRTC	680.2083	216	22
96	326	HCATGAGCACRMWWCCWAAACCBCA	332.2083	410	TNSCRTANAGRGGCCADGSRTANCC	587.2083	255	22
97	340	CHDHCCGYCGYCCWMHRGAYGTHAA	377.2083	415	AVCCDCGVGGDGASAGVARCCAHCC	632.2083	255	22
98	324	TGAGCACRMWWCCWAAACCBCAAAG	335.2083	415	AVCCDCGVGGDGASAGVARCCAHCC	632.2083	297	22
99	468	ARGAYGGSRTNAAYTWYGCAACMGG	809.2083	503	GNSHCCARTTCWKCATCATRTCCCA	1307.208	498	22
100	414	CHTGGCCYCTNTAYGSNAAYGARGG	578.2083	435	NRTTVCGNGAYYKHYGCCGGGGRTC	680.2083	102	23
101	442	CNCGBAAYNTKGGYARRGTCATCGA	680.2083	467	CKGTTGCRWARTTNAYSCCRTCYTC	824.2083	144	23
102	331	GAGCACRMWWCCWAAACCBCAAAGA	336.2083	389	CNGARGTYTTHCKHRYYGCGCGCAC	485.2083	149	23
103	438	MHGAYCCCCGGCRDMRRTCNCGBAA	662.2083	467	CKGTTGCRWARTTNAYSCCRTCYTC	824.2083	162	23
104	380	GTHTACBTRYTDCCGCGCAGGGGCC	433.2083	413	DNCCYTCRTTNSCRTANAGRGGCCA	596.2083	163	23
105	433	NHVBTGGGGSCCVAMHGAYCCCCGG	648.2083	467	CKGTTGCRWARTTNAYSCCRTCYTC	824.2083	176	23
106	351	THAAGTTYCCRGGYGGYGGHCAGAT	398.2083	413	DNCCYTCRTTNSCRTANAGRGGCCA	596.2083	198	23
107	401	TGGGTGTGCGCGCRRYDMGDAARAC	464.2083	430	KHYGCCGGGGRTCDKTBGGSCCCCA	668.2083	204	23
108	340	CHDHCCGYCGYCCWMHRGAYGTHAA	377.2083	410	TNSCRTANAGRGGCCADGSRTANCC	587.2083	210	23
109	331	GAGCACRMWWCCWAAACCBCAAAGA	336.2083	416	CDCGVGGDGASAGVARCCAHCCYGC	629.2083	293	23
110	401	TGGGTGTGCGCGCRRYDMGDAARAC	464.2083	477	DRAAGATAGARAARGAGCAACCRGG	857.2083	393	23
111	401	TGGGTGTGCGCGCRRYDMGDAARAC	464.2083	474	MARNADRAAGATAGARAARGAGCAA	862.2083	398	23
112	492	YTNCCYGGTTGCTCYTTYTCTATCT	838.2083	503	GNSHCCARTTCWKCATCATRTCCCA	1307.208	469	23
113	349	HAAGTTYCCRGGYGGYGGHCAGATC	399.2083	407	KDGSYTSBGAYSGYTCNGARGTYTT	500.2083	101	24
114	458	THGCCGAYCTCRTGGGRTAYATHCC	722.2083	467	CKGTTGCRWARTTNAYSCCRTCYTC	824.2083	102	24
115	401	TGGGTGTGCGCGCRRYDMGDAARAC	464.2083	416	CDCGVGGDGASAGVARCCAHCCYGC	629.2083	165	24
116	390	GGGGCCCNMGNTTGGGTGTGCGCGC	452.2083	415	AVCCDCGVGGDGASAGVARCCAHCC	632.2083	180	24
117	358	GYGGYGGHCAGATCGYBGGYGGAGT	410.2083	413	DNCCYTCRTTNSCRTANAGRGGCCA	596.2083	186	24
118	425	GNTGGGCRGGDTGGYTBCTSTCHCC	608.2083	467	CKGTTGCRWARTTNAYSCCRTCYTC	824.2083	216	24
119	326	HCATGAGCACRMWWCCWAAACCBCA	332.2083	413	DNCCYTCRTTNSCRTANAGRGGCCA	596.2083	264	24
120	414	CHTGGCCYCTNTAYGSNAAYGARGG	578.2083	477	DRAAGATAGARAARGAGCAACCRGG	857.2083	279	24
121	414	CHTGGCCYCTNTAYGSNAAYGARGG	578.2083	474	MARNADRAAGATAGARAARGAGCAA	862.2083	284	24
122	459	CNWGYGGNYTHGCCGAYCTCRTGGG	713.2083	467	CKGTTGCRWARTTNAYSCCRTCYTC	824.2083	111	25
123	390	GGGGCCCNMGNTTGGGTGTGCGCGC	452.2083	410	TNSCRTANAGRGGCCADGSRTANCC	587.2083	135	25
124	412	SNMARCCHGGNTAYSCHTGGCCYCT	563.2083	457	CNABRASNGGDATRTAYCCCAYGAG	746.2083	183	25
125	340	CHDHCCGYCGYCCWMHRGAYGTHAA	377.2083	413	DNCCYTCRTTNSCRTANAGRGGCCA	596.2083	219	25
126	331	GAGCACRMWWCCWAAACCBCAAAGA	336.2083	415	AVCCDCGVGGDGASAGVARCCAHCC	632.2083	296	25
127	390	GGGGCCCNMGNTTGGGTGTGCGCGC	452.2083	467	CKGTTGCRWARTTNAYSCCRTCYTC	824.2083	372	25
128	458	THGCCGAYCTCRTGGGRTAYATHCC	722.2083	498	TCATRTCCCANGCCATBCKRTGNCC	1292.208	570	25
129	431	CNHVBTGGGGSCCVAMHGAYCCCCG	647.2083	462	NCCNABRASNGGDATRTAYCCCAYG	748.2083	101	26

130	412	SNMARCCHGGNTAYSCHTGGCCYCT	563.2083	446	WRTCGATGACYYTRCCMANRTTVCG	698.2083	135	26
131	412	SNMARCCHGGNTAYSCHTGGCCYCT	563.2083	450	DARNCCRCWNGTNADGGWRTCGATG	715.2083	152	26
132	401	TGGGTGTGCGCGCRRYDMGDAARAC	464.2083	415	AVCCDCGVGGDGASAGVARCCAHCC	632.2083	168	26
133	331	GAGCACRMWWCCWAAACCBCAAAGA	336.2083	410	TNSCRTANAGRGGCCADGSRTANCC	587.2083	251	26
134	519	GNMGRCAYYTVATHTTYTGYCAYTC	4502.083	522	YYTCCCARAABTCVARRTGRTCYTG	5009.083	507	26
135	459	CNWGYGGNYTHGCCGAYCTCRTGGG	713.2083	498	TCATRTCCCANGCCATBCKRTGNCC	1292.208	579	26
136	412	SNMARCCHGGNTAYSCHTGGCCYCT	563.2083	435	NRTTVCGNGAYYKHYGCCGGGGRTC	680.2083	117	27
137	401	TGGGTGTGCGCGCRRYDMGDAARAC	464.2083	410	TNSCRTANAGRGGCCADGSRTANCC	587.2083	123	27
138	390	GGGGCCCNMGNTTGGGTGTGCGCGC	452.2083	413	DNCCYTCRTTNSCRTANAGRGGCCA	596.2083	144	27
139	401	TGGGTGTGCGCGCRRYDMGDAARAC	464.2083	467	CKGTTGCRWARTTNAYSCCRTCYTC	824.2083	360	27
140	468	ARGAYGGSRTNAAYTWYGCAACMGG	809.2083	498	TCATRTCCCANGCCATBCKRTGNCC	1292.208	483	27
141	412	SNMARCCHGGNTAYSCHTGGCCYCT	563.2083	430	KHYGCCGGGGRTCDKTBGGSCCCCA	668.2083	105	28
142	414	CHTGGCCYCTNTAYGSNAAYGARGG	578.2083	467	CKGTTGCRWARTTNAYSCCRTCYTC	824.2083	246	28
143	331	GAGCACRMWWCCWAAACCBCAAAGA	336.2083	413	DNCCYTCRTTNSCRTANAGRGGCCA	596.2083	260	28
144	412	SNMARCCHGGNTAYSCHTGGCCYCT	563.2083	477	DRAAGATAGARAARGAGCAACCRGG	857.2083	294	28
145	412	SNMARCCHGGNTAYSCHTGGCCYCT	563.2083	474	MARNADRAAGATAGARAARGAGCAA	862.2083	299	28
146	492	YTNCCYGGTTGCTCYTTYTCTATCT	838.2083	498	TCATRTCCCANGCCATBCKRTGNCC	1292.208	454	28
147	497	CYTTYTCTATCTTYHTNYTKGCHCT	851.2083	503	GNSHCCARTTCWKCATCATRTCCCA	1307.208	456	28
148	401	TGGGTGTGCGCGCRRYDMGDAARAC	464.2083	413	DNCCYTCRTTNSCRTANAGRGGCCA	596.2083	132	29
149	412	SNMARCCHGGNTAYSCHTGGCCYCT	563.2083	467	CKGTTGCRWARTTNAYSCCRTCYTC	824.2083	261	32
150	497	CYTTYTCTATCTTYHTNYTKGCHCT	851.2083	498	TCATRTCCCANGCCATBCKRTGNCC	1292.208	441	33

1: degeneracy を 2 の指数で示した値, 黄色の行は OE-PCR ゲノムフラグメントを用いた検証対象のプライマーセットを示す

表 17　HCV ウイルス Genotype 共通プライマー検証用ゲノムフラグメント

Template ID	Genotype	Subtype	塩基配列
1	1	1a	CCGGAATTGCCAGGACGACCGGGTCCTTTCTTGGATAAACCCGCTCAATGCCTGGAGATTTGGGCGTGCCCCCGCAAGACTGCTAGCCGAGTAGTGTTGGGTCGCGAAAGGCC
2	1	1b	CCGGAATTGCCAGGACGACCGGGTCCTTTCTTGGATCAACCCGCTCAATGCCTGGAGATTTGGGCGTGCCCCCGCGAGACTGCTAGCCGAGTAGTGTTGGGTCGCGAAAGGCC
3	1	1g	CCGGAATCGCCAGGACGACCGGGTCCTTTCTTGGATAAACCCGCTCAATGCCTGGAAATTTGGGCGTGCCCCCGCAAGACTGCTAGCCGAGTAGTGTTGGGTCGCGAAAGGCC
4	2	2a	CCGGAATTGCCGGGAAGACTGGGTCCTTTCTTGGATAAACCCACTCTATGCCCGGCCATTTGGGCGTGCCCCCGCAAGACTGCTAGCCGAGTAGCGTTGGGTTGCGAAAGGCC
5	2	2b	CCGGAATTACCGGAAAGACTGGGTCCTTTCTTGGATAAACCCACTCTATGTCCGGTCATTTGGGCGTGCCCCCGCAAGACTGCTAGCCGAGTAGCGTTGGGTTGCGAAAGGCC
6	3	3a	CCGGAATTGCCGGGAAGACTGGGTCCTTTCTTGGATAAACCCACTCTATGCCCGGCCATTTGGGCGTGCCCCCGCAAGACTGCTAGCCGAGTAGCGTTGGGTTGCGAAAGGCC
7	4	4d	CCGGAATCGCCGGGATGACCGGGTCCTTTCTTGGATAAACCCGCTCAATGCCCGGAAATTTGGGCGTGCCCCCGCAAGACTGCTAGCCGAGTAGTGTTGGGTCGCGAAAGGCC
8	4	4f	CCGGAATTGCCGGGACGACCGGGTCCTTTCTTGGATTAACCCGCTCAATGCCCGGAGATTTGGGCGTGCCCCCGCAAGACTGCTAGCCGAGTAGCGTTGGGTTGCGAAAGGCC
9	5	5a	CCGGAATTGCCGGGAAGACTGGGTCCTTTCTTGGATAAACCCACTCTATGCCCGGCCATTTGGGCGTGCCCCCGCAAGACTGCTAGCCGAGTAGCGTTGGGTTGCGAAAGGCC
10	6	6a	CCGGAATTGCCAGGACGACCGGGTCCTTTCCATTGGATCAAACCCGCTCAATGCCTGGAGATTTGGGCGTGCCCCCGCAAGACTGCTAGCCGAGTAGCGTTGGGTTGCGAAAGGCC
11	6	6p	CCGGAATTGCCAGGACGACCGGGTCCTTTCTTGGATCAAACCCGCTCAATGCCTGGAGATTTGGGCGTGCCCCCGCGAGACTGCTAGCCGAGTAGTGTTGGGTCGCGAAAGGCC
12	6	6q	CCGGAATTGCCAGGACGACCGGGTCCTTTCTTGGATTAAACCCGCTCAATGCCTGGAGATTTGGGCGTGCCCCCGCGAGACTGCTAGCCGAGTAGTGTTGGGTCGCGAAAGGCC
13	7	6c	CCGGAATTGCCAGGATGACCGGGTCCTTTCTTGGATTAACCCCGCTCAATGCCTGGAGATTTGGGCGTGCCCCCGCGAGACTGCTAGCCGAGTAGTGTTGGGTCGCGAAAGGCC
14	8	6e	CCGGAATTGCCAGGACGACCGGGTCCTTTCTTGGATYAACCCGCTCAATGCCTGGAGATTTGGGCGTGCCCCCGCGAGACTGCTAGCCGAGTAGTGTTGGGTCGCGAAAGGCC
15	8	6f	CCGGAATTGCCAGGATGACCGGGTCCTTTCTTGGATTAACCCGCTCAGTGCCTGGAGATTTGGGCGTGCCCCCGCGAGACCGCTAGCCGAGTAGTGTTGGGTCGCGAAAGGCC
16	8	6g	CCGGAATTGCCAGGACGACCGGGTCCTTTCTTGGATTAACCCGCTCAATGCCTGGAGATTTGGGCGTGCCCCCGCGAGACTGCTAGCCGAGTAGTGTTGGGTCGCGAAAGGCC
17	8	6i	CCGGAATTGCCAGGACGACCGGGTCCTTTCTTGGATTAACCCGCTCAATGCCTGGAGATTTGGGCGTGCCCCCGCGAGACTGCTAGCCGAGTAGTGTTGGGTCGCGAAAGGCC
18	8	6j	CCGGAATTGCCAGGACGACCGGGTCCTTTCTTGGATCAACCCGCTCAATGCCTGGAGATTTGGGCGTGCCCCCGCGAGACTGCTAGCCGAGTAGTGTTGGGTCGCGAAAGGCC
19	8	6k	CCGGAATTGCCAGGACGACCGGGTCCTTTCTTGGATTAACCCGCTCAATGCCTGGAGATTTGGGCGTGCCCCCGCGAGACTGCTAGCCGAGTAGTGTTGGGTCGCSAAAGGCC
20	8	6l	CCGGAATTGCCAGGACGACCGGGTCCTTTCTTGGATCAACCCGCTCAATGCCTGGAGATTTGGGCGTGCCCCCGCGAGACTGCTAGCCGAGTAGTGTTGGGTCGCGAAAGGCC
21	8	6m	CCGGAATTGCCAGGACGACAGGGTCCTTTCTTGGATTAACCCTCTCTATGCCTGGAGATTTGGGCGTGCCCCCGCGAGACTGCTAGCCGAGTAGTGTTGGGTCGCGAAAGGCC
22	8	6n	CCGGAATTGCCAGGACGACAGGGTCCTTTCTTGGATTAACCCTCTCAATGCCTGGAGATTTGGGCGTGCCCCCGCGAGACTGCTAGCCGAGTAGTGTTGGGTCGCGAAAGGCC
23	8	6o	CCGGAATTGCCAGGACGACCGGGTCCTTTCTTGGATCAACCCGCTCAATGCCTGGAGATTTGGGCGTGCCCCCGCGAGACTGCTAGCCGAGTAGTGTTGGGTCGCGAAAGGCC
24	8	6t	CCGGAATTGCCAGGACGACCGGGTCCTTTCTTGGATTAACCCGCTCAATGCCTGGAGATTTGGGCGTGCCCCCGCGAGACTGCTAGCCGAGTAGTGTTGGGTCGCGAAAGGCC

表 18　HCV ウイルス人工ゲノムフラグメントのグループ分け

人工遺伝子 No	genotype	合成 subtype	subtype
1	1	1a	1a, 1b, 1g
2	2	2a	2a, 2b
3	3	3a	3a
4	4	4d	4d
5	4	4f	4f
6	6	6a	6a
7	6	6c	6c, 6p, 6q
8	6	6e	6e

表 19　HCV ゲノムフラグメント合成のための OE-PCR オリゴマー

人工遺伝子 No	Primer 名	Sequence	オリゴマー長
1	HCVgr1_1	CCGGAATTGCCAGGACG	17
	HCVgr1_2	GTTTATCCAAGAAAGGACCCGGTCGTCCTGGCAATTCCGG	40
	HCVgr1_3	CCGGGTCCTTTCTTGGATAAACCCGCTCAATGCCTGGAGA	40
	HCVgr1_4	GTCTTGCGGGGGCACGCCCAAATCTCCAGGCATTGAGCGG	40
	HCVgr1_5	GTGCCCCCGCAAGACTGCTAGCCGAGTAGTGTTGGGTCGC	40
	HCVgr1_6	GGCCTTTCGCGACCCAACACTACTCGG	27
2	HCVgr2_1	CCGGAATTGCCAGGACG	17
	HCVgr2_2	GTTTATCCAAGAAAGGACCCGGTCGTCCTGGCAATTCCGG	40
	HCVgr2_3	CCGGGTCCTTTCTTGGATAAACCCGCTCAATGCCTGGAGA	40
	HCVgr2_4	GTCTTGCGGGGGCACGCCCAAATCTCCAGGCATTGAGCGG	40
	HCVgr2_5	GTGCCCCCGCAAGACTGCTAGCCGAGTAGTGTTGGGTCGC	40
	HCVgr2_6	GGCCTTTCGCGACCCAACACTACTCGG	27
3	HCVgr3_1	CCGGAATTGCCGGGAAGAC	19
	HCVgr3_2	GGGTTTATCCAAGAAAGGACCCAGTCTTCCCGGCAATTCCG	41
	HCVgr3_3	TGGGTCCTTTCTTGGATAAACCCACTCTATGCCCGGCCAT	40
	HCVgr3_4	CAGTCTTGCGGGGGCACGCCCAAATGGCCGGGCATAGAGT	40
	HCVgr3_5	TGCCCCCGCAAGACTGCTAGCCGAGTAGCGTTGGGTTGCG	40
	HCVgr3_6	GGCCTTTCGCAACCCAACGCTACTC	25
4	HCVgr4_1	CCGGAATCGCCGGGATGA	18
	HCVgr4_2	GGTTTATCCAAGAAAGGACCCGGTCATCCCGGCGATTCCG	40
	HCVgr4_3	CGGGTCCTTTCTTGGATAAACCCGCTCAATGCCCGGAAAT	40
	HCVgr4_4	AGTCTTGCGGGGGCACGCCCAAATTTCCGGGCATTGAGCG	40
	HCVgr4_5	GTGCCCCCGCAAGACTGCTAGCCGAGTAGTGTTGGGTCGC	40
	HCVgr4_6	GGCCTTTCGCGACCCAACACTACTCGG	27
5	HCVgr5_1	CCGGAATTGCCGGGAAGAC	19
	HCVgr5_2	GGGTTTATCCAAGAAAGGACCCAGTCTTCCCGGCAATTCCG	41
	HCVgr5_3	TGGGTCCTTTCTTGGATAAACCCACTCTATGCCCGGCCAT	40
	HCVgr5_4	CAGTCTTGCGGGGGCACGCCCAAATGGCCGGGCATAGAGT	40
	HCVgr5_5	TGCCCCCGCAAGACTGCTAGCCGAGTAGCGTTGGGTTGCG	40
	HCVgr5_6	GGCCTTTCGCAACCCAACGCTACTC	25
6	HCVgr6_1	CCGGAATTGCCAGGACGACCGGGTC	25
	HCVgr6_2	GAGCGGGTTTGATCCAATGGAAAGGACCCGGTCGTCCTGG	40
	HCVgr6_3	CCATTGGATCAAACCCGCTCAATGCCTGGAGATTTGGGCG	40
	HCVgr6_4	CGGCTAGCAGTCTTGCGGGGGCACGCCCAAATCTCCAGGC	40
	HCVgr6_5	CGCAAGACTGCTAGCCGAGTAGCGTTGGGTTGCGAAAGGC	40
	HCVgr6_6	GGCCTTTCGCAACCCAACG	19
7	HCVgr7_1	CCGGAATTGCCAGGATGACCGGG	23
	HCVgr7_2	GAGCGGGGTTAATCCAAGAAAGGACCCGGTCATCCTGGCA	40
	HCVgr7_3	CTTTCTTGGATTAACCCCGCTCAATGCCTGGAGATTTGGGC	41
	HCVgr7_4	CTAGCAGTCTCGCGGGGGCACGCCCAAATCTCCAGGCATT	40
	HCVgr7_5	CCCCGCGAGACTGCTAGCCGAGTAGTGTTGGGTCGCGAAA	40
	HCVgr7_6	GGCCTTTCGCGACCCAACACTACT	24
8	HCVgr8_1	CCGGAATTGCCAGGACGACCGG	22
	HCVgr8_2	GAGCGGGTTATCCAAGAAAGGACCCGGTCGTCCTGGCAAT	40
	HCVgr8_3	CCTTTCTTGGATAACCCGCTCAATGCCTGGAGATTTGGGC	40
	HCVgr8_4	CTAGCAGTCTCGCGGGGGCACGCCCAAATCTCCAGGCATT	40
	HCVgr8_5	CCCCGCGAGACTGCTAGCCGAGTAGTGTTGGGTCGCGAAA	40
	HCVgr8_6	GGCCTTTCGCGACCCAACACTACT	24

表 20　HBV Genotype 共通プライマー設計対象ゲノム塩基配列

Accession	Genotype	Definition	Length
AP007263	A	HBV genotype A DNA complete genome isolate: HB-JI444AF	3221
FJ386688	B	Hepatitis B virus isolate S1632 complete genome	3215
EU833891	C	Hepatitis B virus isolate 14 complete genome	3215
AY945307	D	Hepatitis B virus complete genome	3182
AP007262	E	HBV genotype E DNA complete genome isolate: HB-JI411F	3212
AB365453	F	Hepatitis B virus DNA complete genome isolate: BOL584	3227
AP007264	G	HBV genotype G DNA complete genome isolate: HB-JI444GF	3248
AP007261	H	HBV genotype H DNA complete genome isolate: HB-JI260F	3218

表 21　HBV Genotype 共通プライマー(100 組のみ示す)

Pair ID	Primer ID (Forward)	塩基配列(Forward)	平均位置 (Forward)	Primer ID (Reverse)	塩基配列　(Reverse)	平均位置 (Reverse)	プライマーの degeneracy 指数[1]	予想サイズ
1	1333	TGCACTTCGCTTCACCTCTGCACGT	1583	1381	ACCAATTTATGCCTACAGCCTCCTA	1795	0	212
2	191	TGGACTTCTCTCAATTTTCTAGGGG	263	236	GATARCCAGGACAARTTGGAGGACA	366	2	103
3	1467	CTTTTTCACCTCTGCCTAATCATCT	1825	1535	CCAAATTCTTTATAMGGRTCAATGT	1930	2	105
4	89	CATCAGGAYTCCTMGGACCCCTKCT	171	138	AAAATTGAGAGAAGTCCACCACGAG	272	3	101
5	89	CATCAGGAYTCCTMGGACCCCTKCT	171	144	GAAAATTGAGAGAAGTCCACCACGA	273	3	102
6	1149	TYTACGTCCCGTCRGCGCTGAATCC	1427	1224	CCGCGTAAAGAGAGGTGCGMCCCGT	1538	3	111
7	1731	TYGGAGTGTGGATTCGCACTCCWCC	2274	1790	GGCGAGGGAGTTCTTCTTCKAGGGG	2389	3	116
8	1731	TYGGAGTGTGGATTCGCACTCCWCC	2274	1795	GTYTGCGAGGCGAGGGAGTTCTTCT	2397	3	124
9	1816	CCTMGAAGAAGAACTCCCTCGCCTC	2375	1875	CCACCTTRTGWGTCCAAGGRATACT	2476	4	101
10	811	TTYTCGCCAACTTAYAAGRCCTTTC	1099	874	CCAGTGGGGGTTGCRTCAGCAAACA	1200	4	101
11	1173	GTCRGCGCTGAATCCHGCGGACGAC	1437	1224	CCGCGTAAAGAGAGGTGCGMCCCGT	1538	4	101
12	215	TGTCYTGGCCWAAATTYGCAGTCCC	299	286	AGGAAKATGATAAAACGCCGCAGAC	400	4	101
13	185	GTCTAGACTCGTGGTGGACTTCTCT	249	219	TGGAGGACARSAGRTTGGTRAGTGA	350	4	101
14	1807	AGAAGAACTCCCTCGCCTCGCARAC	2381	1891	ARTTTCCCACCTTRTGWGTCCAAGG	2482	4	101
15	172	GACTCGTGGTGGACTTCTCTCAATT	254	241	ACAARTTGGAGGACARSAGRTTGGT	356	4	102
16	184	CTAGACTCGTGGTGGACTTCTCTCA	251	232	AGGACAARTTGGAGGACARSAGRTT	359	4	108
17	457	CTCAAGGMAMCTCTATGTWTCCCTC	540	522	ACGGRCTGAGGCCCACTCCCATAGG	656	4	116
18	1772	CACMAAATGCCCCTATCYTATCMAC	2310	1841	ATCTTCTGCGACGCGGMGATTGAGA	2427	4	118
19	1711	TSTCYTTYGGAGTGTGGATTCGCAC	2268	1790	GGCGAGGGAGTTCTTCTTCKAGGGG	2389	4	122
20	408	AAGGTATGTTGCCCGTKTGTCCTCT	459	473	TGGGAATACARGTGCARTTTCCRTC	603	4	144
21	69	AYYRCATCAGGAYTCCTMGGACCCC	167	157	TTGAGAGAAGTCCACCACGAGTCTA	268	5	101
22	389	TGGAYTAYCAAGGTATGTTGCCCGT	450	444	GGGAWACATAGAGKTKCCTTGAGCA	554	5	104
23	1509	TKTTCAAGCCTCCAAGCTGTGCCTT	1866	1560	ARAARTCAGAAGGCAAAAAHGAGAG	1971	5	105
24	69	AYYRCATCAGGAYTCCTMGGACCCC	167	144	GAAAATTGAGAGAAGTCCACCACGA	273	5	106
25	385	TTGGTTCTTCTGGAYTAYCAAGGTA	440	444	GGGAWACATAGAGKTKCCTTGAGCA	554	5	114
26	1000	TGCCGATCCATACTGCGGAACTSCT	1262	1087	CAGCACADCCKAGCAGCCATGGRAA	1388	5	126
27	1772	CACMAAATGCCCCTATCYTATCMAC	2310	1850	GAGATKSAGATCTTCTGCGACGCGG	2436	5	127
28	24	AYYTYCCTGCTGGTGGCTCCAGTTC	54	95	TGTGAGGATTYTTGTCAACRAGAAA	230	5	176
29	1345	CTCTGCACGTYRCATGGARACCVCC	1598	1381	ACCAATTTATGCCTACAGCCTCCTA	1795	5	197
30	1330	GCTTCACCTCTGCACGTYRCATGGA	1591	1386	GCTGGTGMRCASACCAATTTATGCC	1807	5	216
31	1794	CAGGDCCCCTMGAAGAAGAACTCCC	2368	1877	RTGWGTCCAAGGRATACTAACATTG	2469	6	101
32	207	BGTGTCYTGGCCWAAATTYGCAGTC	297	293	GAAKATGATAAAACGCCGCAGACAC	398	6	101
33	1773	YAGACCACMAAATGCCCCTATCYTA	2305	1814	GAGAYGTKCGTYTGCGAGGCGAGGG	2406	6	102
34	661	GGGCTTTCCCCCACTGTYTGGCTTT	710	711	GAYAAMARAAAATTGGTAAYAGMGG	813	6	103
35	1774	CCCCTATCYTATCMACRMTTCCKGA	2319	1841	ATCTTCTGCGACGCGGMGATTGAGA	2427	6	109
36	661	GGGCTTTCCCCCACTGTYTGGCTTT	710	723	CCCAVAGAYAAMARAAAATTGGTAA	819	6	109
37	371	TCATCTTCTTRTTGGTTCTTCTGGA	429	432	TKCCTTGAGCARGARTBGTGCAGGT	540	6	111
38	24	AYYTYCCTGCTGGTGGCTCCAGTTC	54	82	AGMAGGGGTCCKAGGARTCCTGATG	187	6	133
39	24	AYYTYCCTGCTGGTGGCTCCAGTTC	54	73	CGAGMAGGGGTCCKAGGARTCCTGA	189	6	135
40	407	GCCCGTKTGTCCTCTVMTTCCAGGA	469	477	GGATGGGAATACARGTGCARTTTCC	606	6	137
41	407	GCCCGTKTGTCCTCTVMTTCCAGGA	469	483	ATGGGATGGGAATACARGTGCARTT	609	6	140
42	466	GCTCAAGGMAMCTCTATGTWTCCCT	539	514	TCCCATAGGWATYTTSCSAAAGCCC	640	7	101
43	1039	GCYTGYTTYGCTCGCAGCMGGTCTG	1291	1081	TTGGCAGCACADCCKAGCAGCCATG	1392	7	101
44	216	MCCRBGTGTCYTGGCCWAAATTYGC	293	264	ATGATAAAACGCCGCAGACACATCC	394	7	101
45	158	CCTCACAATWCCRMAGAGTCTAGAC	232	209	GTRAGTGAYTGGAGRTTKGGGACTG	333	7	101
46	160	ATCCTCACAATWCCRMAGAGTCTAG	230	205	TRAGTGAYTGGAGRTTKGGGACTGC	332	7	102
47	805	ARGCTTTYRYYTTYTCGCCAACTTA	1088	892	GGGTTGCRTCAGCAAACACTTGGCA	1193	7	105
48	1472	CCTCTGCCTAATCATCTYWTGTWCA	1833	1541	YAGWMGCTCCAAATTCTTTATAMGG	1938	7	105
49	408	AAGGTATGTTGCCCGTKTGTCCTCT	459	455	WACARCARCADGAGGGAWACATAGA	567	7	108
50	805	ARGCTTTYRYYTTYTCGCCAACTTA	1088	884	GTGGGGGTTGCRTCAGCAAACACTT	1197	7	109
51	471	GMAMCTCTATGTWTCCCTCHTGYTG	546	522	ACGGRCTGAGGCCCACTCCCATAGG	656	7	110
52	1179	CRGCGCTGAATCCHGCGGACGACCC	1439	1254	GGMACASRCGGGGAGWCCGCGTAAA	1554	7	115
53	1774	CCCCTATCYTATCMACRMTTCCKGA	2319	1850	GAGATKSAGATCTTCTGCGACGCGG	2436	7	118
54	1668	GRCAAYTATTRTGGTTTCAYATWTC	2202	1757	ATARGATAGGGGCATTTKGTGGTCT	2322	7	120
55	720	TCCCTTTWTRCCKCTRTTACCAATT	787	798	GAAAGGYCTTRTAAGTTGGCGARAA	1115	7	328
56	1913	GGACWCAYAAGGTGGGAAAYTTTAC	2470	1987	AWGGTGACCCRCAAAATGADGCGCT	2824	7	354
57	806	YRYYTTYTCGCCAACTTAYAAGRCC	1095	877	TGGGGGTTGCRTCAGCAAACACTTG	1196	8	101
58	395	TGGTTCTTCTGGAYTAYCAAGGTAT	441	438	GKTKCCTTGAGCARGARTBGTGCAG	542	8	101
59	1745	ACTCCWCCHGCHTAYAGACCACMAA	2291	1802	CGAGGCGAGGGAGTTCTTCTTCKAG	2392	8	102
60	1782	RMTTCCKGARAMTRCTGTTGTTAGA	2335	1850	GAGATKSAGATCTTCTGCGACGCGG	2436	8	102
61	656	TCCCCCACTGTYTGGCTTTYAGYTA	716	723	CCCAVAGAYAAMARAAAATTGGTAA	819	8	103
62	353	ATCCTGCTGCTATGCCTCATCTTCT	413	422	TYYKGCAKKGTCCSGTRCTGGTKGT	516	8	103
63	1529	GCCTCCAAGCTGTGCCTTGGGTGGC	1873	1573	NGAMGGRRARAARTCAGAAGGCAAA	1979	8	106
64	216	MCCRBGTGTCYTGGCCWAAATTYGC	293	285	GGAAKATGATAAAACGCCGCAGACA	399	8	106
65	1519	TCAAGCCTCCAAGCTGTGCCTTGGG	1869	1573	NGAMGGRRARAARTCAGAAGGCAAA	1979	8	110
66	1045	GYTTYGCTCGCAGCMGGTCTGGRGC	1295	1092	CCKCGHAKGATCCAGTTGGCAGCAC	1407	8	112
67	1677	TATTRTGGTTTCAYATWTCHTGYCT	2208	1757	ATARGATAGGGGCATTTKGTGGTCT	2322	8	114
68	1000	TGCCGATCCATACTGCGGAACTSCT	1262	1063	CACADCCKAGCAGCCATGGRAANGA	1385	8	123
69	385	TTGGTTCTTCTGGAYTAYCAAGGTA	440	455	WACARCARCADGAGGGAWACATAGA	567	8	127
70	440	RRACCTGCACVAYTCYTGCTCAAGG	522	537	GRCTGAGGCCCACTCCCATAGGWAT	653	8	131
71	1355	HVTTRYATAAKAGGACTMTTGGACT	1651	1381	ACCAATTTATGCCTACAGCCTCCTA	1795	8	144
72	1355	HVTTRYATAAKAGGACTMTTGGACT	1651	1420	GATGATTAGGCAGAGGTGAAAAAGT	1840	8	189

73	1345	CTCTGCACGTYRCATGGARACCVCC	1598	1386	GCTGGTGMRCASACCAATTTATGCC	1807	8	209
74	2014	YTGGGAACAMGAKCTACAKCATGGG	2837	2053	CCYTGWGMCTGAGGGCTCCMCCCCA	3092	8	255
75	2006	GGTCACCWTATWCYTGGGAACAMGA	2824	2053	CCYTGWGMCTGAGGGCTCCMCCCCA	3092	8	268
76	1995	GCGCHTCATTTTGYGGGTCACCWTA	2809	2053	CCYTGWGMCTGAGGGCTCCMCCCCA	3092	8	283
77	433	CAGYACSGGACMMTGCMRRACCTGC	505	477	GGATGGGAATACARGTGCARTTTCC	606	9	101
78	628	TGTTCAGTGGTKCGYMGGGCTTTCC	694	700	AAYAGMGGYAWAAAGGGAYTCAMGA	796	9	102
79	437	GYACSGGACMMTGCMRRACCTGCAC	507	483	ATGGGATGGGAATACARGTGCARTT	609	9	102
80	1201	ACGACCCBTCYCGKGGYCGYTTGGG	1457	1251	CAGATGAGAAGGMACASRCGGGGAG	1564	9	107
81	1001	CWCTGCCGATCCATACTGCGGAACT	1259	1067	CKAGCAGCCATGGRAANGADGTRTA	1379	9	120
82	1668	GRCAAYTATTRTGGTTTCAYATWTC	2202	1755	GGAAKYGTKGATARGATAGGGGCAT	2332	9	130
83	1333	TGCACTTCGCTTCACCTCTGCACGT	1583	1363	TCHKYAAAHAMACAGTCYTTGAWGT	1726	9	143
84	1641	TRATGAMYYTRGCYWCCTGGGTGGG	2103	1688	GAGTGCGAATCCACACTCCRAARGA	2286	9	183
85	1572	TRCTCTCDTTTTTGCCTTCTGAYTT	1953	1662	AWATRTGAAACCAYAATARTTGYCT	2217	9	264
86	732	CCAATTTTYTKTTRTCTBTGGGYAT	806	798	GAAAGGYCTTRTAAGTTGGCGARAA	1115	9	309
87	417	GTTGCCCGTKTGTCCTCTVMTTCCA	466	455	WACARCARCADGAGGGAWACATAGA	567	10	101
88	1828	CGCCTCGCARACGMAGRTCTCAATC	2394	1905	TAVAGHCCVGTAAARTTTCCCACCT	2495	10	101
89	440	RRACCTGCACVAYTCYTGCTCAAGG	522	516	CCCATAGGWATYTTSCSAAAGCCCA	639	10	117
90	427	TTCCAGGAWCNWCRACMACCAGYAC	486	477	GGATGGGAATACARGTGCARTTTCC	606	10	120
91	784	AATGTGGWTAYCCHGCHYTMATGCC	1037	829	CGTTGCCKRGCAACGGGGTAAAGGT	1158	10	121
92	1367	ACTGTKTDTTTRMDGAVTGGGARGA	1719	1420	GATGATTAGGCAGAGGTGAAAAAGT	1840	10	121
93	427	TTCCAGGAWCNWCRACMACCAGYAC	486	483	ATGGGATGGGAATACARGTGCARTT	609	10	123
94	1677	TATTRTGGTTTCAYATWTCHTGYCT	2208	1755	GGAAKYGTKGATARGATAGGGGCAT	2332	10	124
95	1355	HVTTRYATAAKAGGACTMTTGGACT	1651	1418	GTGAAAAAGTKRCATGGTGCTGGTG	1825	10	174
96	1641	TRATGAMYYTRGCYWCCTGGGTGGG	2103	1701	CDGGWGGAGTGCGAATCCACACTCC	2292	10	189
97	1585	TTTTGCCTTCTGAYTTYTYYCCKTC	1962	1662	AWATRTGAAACCAYAATARTTGYCT	2217	10	255
98	1551	TTGAYCCKTATAAAGAATTTGGAGC	1917	1652	TTARRCCCATRTKARYRTTRACATA	2187	10	270
99	2014	YTGGGAACAMGAKCTACAKCATGGG	2837	2077	ACYKVCGATTGGTRGARGCAGGAGG	3145	10	308
100	720	TCCCTTTWTRCCKCTRTTACCAATT	787	800	AAGTTGGCGARAARRYRAAAGCYTG	1103	10	316

1: degeneracy を 2 の指数で示した値，黄色のカラムは OE-PCR ゲノムフラグメントを用いた検証対象のプライマーセットを示す

表 22　HBV 共通プライマー検証用ゲノムフラグメント

Genotype	フラグメントの塩基配列
A	TGTGCACTTCGCTTCACCTCTGCACGTTGCATGGAGACCACCGTGAACGCCCATCAGATCCTGCCCAAGGTCTTACATAAGAGGA CTCTTGGACTCCCAGCAATGTCAACGACCGACCTTGAGGCCTACTTCAAAGACTGTGTGTTTAAGGACTGGGAGGAGCTGGGGG AGGAGATTAGGTTAAAGGTCTTTGTATTAGGAGGCTGTAGGCATAAATTGGTCT
B	TGTGCACTTCGCTTCACCTCTGCACGTCGCATGGAGACCACCGTGAACGCCCACGGGAGCTTGCCCAAGGTCTTGCATAAGAGG ACTCTTGGACTTTCAGCAATGTCAACGACCGACCTTGAGGCATACTTCAAAGACTGTGTGTTTACTGAATGGGAGGAGTTGGGG GAGGAGGTTAGGTTAATGATCTTTGTACTAGGAGGCTGTAGGCATAAATTGGTGT
C	TGTGCACTTCGCTTCACCTCTGCACGTCGCATGGAGACCACCGTGAACGCCCACCTGGTATTGCCCAAGGTATTGCATAAGAGG ACTCTTGGACTCTCGGCAATGTCAACGACCGACCTTGAGGCATACTTCAAAGACTGTGTGTTTAAAGACTGGGAGGAGCTGGGG GAGGAGATTAGGCTAAAGGTCTTTGTACTAGGAGGCTGTAGGCATAAATTGGTCT
D	TGTGCACTTCGCTTCACCTCTGCACGTCGCATGGAGACCACCGTGAACGCCCACCAATTCTTGCCCAAGGTCTTGCATAAGAGGA CTCTTGGACTCTCTGTAATGTCAACGACCGACCTTGAGGCATACTTCAAAGACTGTTTGTTTAAGGACTGGGAGGAGTTGGGGGA GGAGATTAGATTAAAGGTCTTTGTGTTAGGAGGCTGTAGGCATAAATTGGTCT
E	TGTGCACTTCGCTTCACCTCTGCACGTCGCATGGAGACCACCGTGAACGCCCACCAGATCTTGCCCAAGGTCTTACATAAGAGGA CTCTTGGACTCTCTGCAATGTCAACGACCGACCTTGAGGCATACTTCAAAGACTGTTTGTTTAAAGACTGGGAGGAGTTGGGGGA GGAGACTAGATTAATGATCTTTGTACTAGGAGGCTGTAGGCATAAATTGGTCT
F	TGTGCACTTCGCTTCACCTCTGCACGTCGCATGGAGACCACCGTGAACGCCCCCTGGAGTTTGCCAACAGTCTTACATAATAGGA CTATTGGACTTTCAGGACGGTCAATGACCCGGTCAATGACCTGGATCGAAGAATACATCAAAGACTGTGTATTTAAAGACTGGGA GGAGTTGGGGGAGGAGATTAGGTTAATGATCTTTGTACTAGGAGGCTGTAGGCATAAATTGGTCT
G	TGTGCACTTCGCTTCACCTCTGCACGTTACATGGAAACCGCCATGAACACCTCTCATCATCTGCCAAGGCAGTTATATAAGAGGA CTCTTGGACTGTTTGTTATGTCAACAACCGGGGTGGAGAAATACTTCAAGGACTGTGTTTTTGCTGAGTGGGAAGAATTAGGCAA TGAGTCCAGGTTAATGACCTTTGTATTAGGAGGCTGTAGGCATAAATTGGTCT
H	TGTGCACTTCGCTTCACCTCTGCACGTCGCATGGAGACCCCCGTGAACGCCCCTTGGAACTTGCCAACAACCTTACATAAGAGGA CTCTTGGACTCTTATGTAACCGGTCAACGACCTGGATTGAGGAATACATCAAAGACTGTGTATTTAAGGACTGGGAGGAGTCGG GGGAGGAGTTGAGGTTAATGGTTTATGTATTAGGAGGCTGTAGGCATAAATTGGTCT

表 23　HBV ゲノムフラグメント合成用オリゴマー

Genotype	PrimerName	塩基配列	Length
A	HBV_A1_1	TGTGCACTTCGCTTCACCTCTGCACGTTGCATGGAGA	37
	HBV_A1_2	TCTGATGGGCGTTCACGGTGGTCTCCATGCAACGTGCAGA	40
	HBV_A1_3	CCGTGAACGCCCATCAGATCCTGCCCAAGGTCTTACATAAG	41
	HBV_A1_4	CTGGGAGTCCAAGAGTCCTCTTATGTAAGACCTTGGGCAGGA	42
	HBV_A1_5	AGGACTCTTGGACTCCCAGCAATGTCAACGACCGACCTTG	40
	HBV_A1_6	ACACAGTCTTTGAAGTAGGCCTCAAGGTCGGTCGTTGACATTG	43
	HBV_A1_7	AGGCCTACTTCAAAGACTGTGTGTTTAAGGACTGGGAGGAGCT	43
	HBV_A1_8	CCTTTAACCTAATCTCCTCCCCCAGCTCCTCCCAGTCCTTAAAC	44
	HBV_A1_9	GGGGGAGGAGATTAGGTTAAAGGTCTTTGTATTAGGAGGCTGTAGGC	47
	HBV_A1_10	AGACCAATTTATGCCTACAGCCTCCTAATACAAAGA	36
B	HBV_B1_1	TGTGCACTTCGCTTCACCTCT	21
	HBV_B1_2	GGTGGTCTCCATGCGACGTGCAGAGGTGAAGCGAAGTGCA	40
	HBV_B1_3	CGTCGCATGGAGACCACCGTGAACGCCCACGGGAGCTTGC	40
	HBV_B1_4	AGAGTCCTCTTATGCAAGACCTTGGGCAAGCTCCCGTGGG	40
	HBV_B1_5	CAAGGTCTTGCATAAGAGGACTCTTGGACTTTCAGCAATGTCAACG	46
	HBV_B1_6	GAAGTATGCCTCAAGGTCGGTCGTTGACATTGCTGAAAGTCCA	43
	HBV_B1_7	ACCGACCTTGAGGCATACTTCAAAGACTGTGTGTTTACTGAATGGG	46
	HBV_B1_8	CCTCCTCCCCCAACTCCTCCCATTCAGTAAACACACAGTCTTT	43
	HBV_B1_9	AGGAGTTGGGGGAGGAGGTTAGGTTAATGATCTTTGTACTAGGAGGC	47
	HBV_B1_10	ACACCAATTTATGCCTACAGCCTCCTAGTACAAAGATCATTAACCTAA	48
C	HBV_C1_1	TGTGCACTTCGCTTCACCTCTGC	23
	HBV_C1_2	ACGGTGGTCTCCATGCGACGTGCAGAGGTGAAGCGAAGTG	40
	HBV_C1_3	CGCATGGAGACCACCGTGAACGCCCACCTGGTATTGCCCA	40
	HBV_C1_4	CCAAGAGTCCTCTTATGCAATACCTTGGGCAATACCAGGTGGG	43
	HBV_C1_5	AGGTATTGCATAAGAGGACTCTTGGACTCTCGGCAATGTCAACGA	45
	HBV_C1_6	TGAAGTATGCCTCAAGGTCGGTCGTTGACATTGCCGAGAGT	41
	HBV_C1_7	CCGACCTTGAGGCATACTTCAAAGACTGTGTGTTTAAAGACTGGGA	46
	HBV_C1_8	TCTCCTCCCCCAGCTCCTCCCAGTCTTTAAACACACAGTCTT	42
	HBV_C1_9	GGAGCTGGGGGAGGAGATTAGGCTAAAGGTCTTTGTACTAGGAG	44
	HBV_C1_10	AGACCAATTTATGCCTACAGCCTCCTAGTACAAAGACCTTTAGCCTAA	48
D	HBV_D1_3	CGTCGCATGGAGACCACCGTGAACGCCCACCAATTCTTGC	40
	HBV_D1_4	AGTCCTCTTATGCAAGACCTTGGGCAAGAATTGGTGGGCGTT	42
	HBV_D1_5	CCAAGGTCTTGCATAAGAGGACTCTTGGACTCTCTGTAATGTCAACGA	48
	HBV_D1_6	TGAAGTATGCCTCAAGGTCGGTCGTTGACATTACAGAGAGTCCAAG	46
	HBV_D1_7	CCGACCTTGAGGCATACTTCAAAGACTGTTTGTTTAAGGACTGGGA	46
	HBV_D1_8	CTAATCTCCTCCCCCAACTCCTCCCAGTCCTTAAACAAACAGTCTT	46
	HBV_D1_9	GGAGTTGGGGGAGGAGATTAGATTAAAGGTCTTTGTGTTAGGAGGC	46
	HBV_D1_10	AGACCAATTTATGCCTACAGCCTCCTAACACAAAGACCTTTAAT	44
E	HBV_E1_1	TGTGCACTTCGCTTCACCT	19
	HBV_E1_2	TGGTCTCCATGCGACGTGCAGAGGTGAAGCGAAGTGCACA	40
	HBV_E1_3	ACGTCGCATGGAGACCACCGTGAACGCCCACCAGATCTTG	40
	HBV_E1_4	GAGTCCTCTTATGTAAGACCTTGGGCAAGATCTGGTGGGCGTTC	44
	HBV_E1_5	CCCAAGGTCTTACATAAGAGGACTCTTGGACTCTCTGCAATGTCAAC	47
	HBV_E1_6	AAGTATGCCTCAAGGTCGGTCGTTGACATTGCAGAGAGTCCAA	43
	HBV_E1_7	GACCGACCTTGAGGCATACTTCAAAGACTGTTTGTTTAAAGACTGGGA	48
	HBV_E1_8	GTCTCCTCCCCCAACTCCTCCCAGTCTTTAAACAAACAGTCTTTG	45
	HBV_E1_9	GGAGTTGGGGGAGGAGACTAGATTAATGATCTTTGTACTAGGAGGCT	47
	HBV_E1_10	AGACCAATTTATGCCTACAGCCTCCTAGTACAAAGATCATTAATCTA	47
F	HBV_F1_1	TGTGCACTTCGCTTCACCTCTGCACGTC	28
	HBV_F1_2	GCGTTCACGGTGGTCTCCATGCGACGTGCAGAGGTGAAGC	40
	HBV_F1_3	GGAGACCACCGTGAACGCCCCCTGGAGTTTGCCAACAGTC	40
	HBV_F1_4	TCCTGAAAGTCCAATAGTCCTATTATGTAAGACTGTTGGCAAACTCCAGG	50
	HBV_F1_5	TTACATAATAGGACTATTGGACTTTCAGGACGGTCAATGACCCGGTCA	48
	HBV_F1_6	TGATGTATTCTTCGATCCAGGTCATTGACCGGGTCATTGACCG	43
	HBV_F1_7	ATGACCTGGATCGAAGAATACATCAAAGACTGTGTATTTAAAGACTGGGAGG	52
	HBV_F1_8	ACCTAATCTCCTCCCCCAACTCCTCCCAGTCTTTAAATACACAGTCTT	48
	HBV_F1_9	AGTTGGGGGAGGAGATTAGGTTAATGATCTTTGTACTAGGAGGCTGTAG	49
	HBV_F1_10	AGACCAATTTATGCCTACAGCCTCCTAGTACAAAGATCATTA	42
G	HBV_G1_2	CGGTTTCCATGTAACGTGCAGAGGTGAAGCGAAGTGCACA	40
	HBV_G1_3	CTGCACGTTACATGGAAACCGCCATGAACACCTCTCATCATCTG	44
	HBV_G1_4	AAGAGTCCTCTTATATAACTGCCTTGGCAGATGATGAGAGGTGTTCATGG	50
	HBV_G1_5	CCAAGGCAGTTATATAAGAGGACTCTTGGACTGTTTGTTATGTCAACAACCG	52
	HBV_G1_6	AGTCCTTGAAGTATTTCTCCACCCCGGTTGTTGACATAACAAACAGTCC	49
	HBV_G1_7	GGGTGGAGAAATACTTCAAGGACTGTGTTTTTGCTGAGTGGGAAGAATT	49
	HBV_G1_8	TCATTAACCTGGACTCATTGCCTAATTCTTCCCACTCAGCAAAAACAC	48

	HBV_G1_9	AGGCAATGAGTCCAGGTTAATGACCTTTGTATTAGGAGGCTGTAGGC	47
	HBV_G1_10	AGACCAATTTATGCCTACAGCCTCCTAATACAAAGG	36
H	HBV_H1_2	GGGTCTCCATGCGACGTGCAGAGGTGAAGCGAAGTGCACA	40
	HBV_H1_3	ACGTCGCATGGAGACCCCCGTGAACGCCCCTTGGAACTTG	40
	HBV_H1_4	GAGTCCTCTTATGTAAGGTTGTTGGCAAGTTCCAAGGGGCGTTC	44
	HBV_H1_5	CCAACAACCTTACATAAGAGGACTCTTGGACTCTTATGTAACCGGTCAAC	50
	HBV_H1_6	CTTTGATGTATTCCTCAATCCAGGTCGTTGACCGGTTACATAAGAGTCCAA	51
	HBV_H1_7	GACCTGGATTGAGGAATACATCAAAGACTGTGTATTTAAGGACTGGGAGG	50
	HBV_H1_8	TCAACTCCTCCCCCGACTCCTCCCAGTCCTTAAATACACAGT	42
	HBV_H1_9	AGTCGGGGGAGGAGTTGAGGTTAATGGTTTATGTATTAGGAGGCTG	46
	HBV_H1_10	AGACCAATTTATGCCTACAGCCTCCTAATACATAAACCATTAACC	45

表 24　HIV-1　Genotype 共通プライマー設計対象ゲノム塩基配列

Accession	Genotype	Definition	Length
EU861977	A	HIV-1 isolate 60000 from Italy complete genome	9781
AY835761	B	HIV-1 isolate 5048-91 clone pbf16 from USA complete genome	9824
AF321523	C	HIV-1 clone MJ4 from Botswana complete genome	9913
AF133821	D	HIV-1 isolate MB2059 from Kenya complete genome	10035
AY173957	F	HIV-1 isolate BZ126 from Brazil complete genome	9030
AF084936	G	HIV-1 subtype G from Democratic Republic of the Congo complete genome	9707
AF190127	H	HIV-1 isolate VI991 from Belgium Gag polyprotein (gag) Pol polyprotein (pol) Vif (vif) Vpr (vpr) truncated Tat (tat) Rev (rev) truncated Vpu (vpu) envelope glycoprotein precursor (env) and Nef (nef) genes complete cds	9056