琉球大学学術リポジトリ

沖縄における C型肝炎ウイルス遺伝子型1aの分子系統解析

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Supplementary File S1

TABLE S1 Primers for PCR of HCV

Primer	**5'→3'**	**Genome position[a]**
HCV-1a_F01	AATGCCTGGAGATTTGGGCG	214-233
HCV-1a_R01	GAAGCCGCACGTGAGGGTATC	711-731
HCV-1a_F1_2	GACTGCTAGCCGAGTAGTGTTGG	245-267
HCV-1a_R1_2	TCACGCCGTCTTCCAGAAC	810-828
HCV-1a_F02	GCAATTTGGGTAAGGTCATCGATACC	691-716
HCV-1a_R02	CAGTTCATCATCATATCCCATGCC	1295-1318
HCV-1a_F03	CTATGTGGGGGACTTGTGCGG	1166-1186
HCV-1a_R03	GTAGTGCCAGCAGTAGGGGCG	1788-1808
HCV-1a_F04	ACCACAAATTCAACTCTTCAGGCTG	1672-1696
HCV-1a_R04	CGGATGCTTGCGGAAACAGTC	2091-2111
HCV-1a_F4_2	AGTACGGCCTTGAATTGCAATACTAG	1611-1636
HCV-1a_R4_2	GCCGCACCGAGTGTACGTAG	2116-2135
HCV-1a_F4_3	CAACTCCAACGGCAGTTGG	1583-1601
HCV-1a_R4_3	GAGTGATCCAAGGACCGGAG	2135-2154

HCV-1a_F05	GGATTTACCAAAGTGTGCGGAGC	2016-2038
HCV-1a_R05	CGCTTGGGATATGAGTAACATCATCC	2548-2573
HCV-1a_F5_2	CAACCGGATTCACCAAAGCGTG	2011-2032
HCV-1a_R5_2	CTACGAGGTTCTCTAAAGCTGCCTCC	2573-2598
HCV-1a_F06	CATCTGCTCCTGCTTGTGGATG	2531-2548
HCV-1a_R06	CCAGCAGCAGCTTGGTGATGTC	3000-3021
HCV-1a_F07	GCAACTGCACGTGTGGGTTCC	2906-2926
HCV-1a_R07	GCAGCAGTTGACACAATCTGAACCT	3514-3538
HCV-1a_F7_2	GGTTGATGGCGCTGACTCTG	2815-2834
HCV-1a_R7_2	CCATGGTAAACGGTCCAACACAC	3570-3592
HCV-1a_F7_3	GCTGGTGCTTATGGTGGCTTC	2860-2880
HCV-1a_R7_3	CAAGGTCTTGGTCCACATTGG	3646-3666
HCV-1a_F7_4	AGCTGGTGCTTATGGTGGC	2859-2877
HCV-1a_R7_4	GAATTACATCAGCGTGCCTCG	3742-3762
HCV-1a_R7_5	GGAGTGGCCTGCAGTTGAC	3527-3545
HCV-1a_F08	ATAATTACCAGCCTGACCGGCC	3468-3489
HCV-1a_R08	CCTTGGTGCTCTTACCGCTGC	4039-4059
HCV-1a_F8_2	AGCCGATGGAATGGTTTCC	3383-3401

HCV-1a_R8_2	TTGAGCACCAGCACCTTATAGC	4084-4105
HCV-1a_R8_3	GGCCAATGTTGAGGCAACAG	4111-4130
HCV-1a_R8_4	CCAATGTTGAGGCAACAGAGG	4084-4105
HCV-1a_F09	AGAGCCTAGAGACAACCATGAGGTC	3937-3961
HCV-1a_R09	TCTTTGAGTGGCAGAAGATGAGATG	4509-4533
HCV-1a_F9_2	TCTACTTGGTCACGAGGCACG	3730-3750
HCV-1a_R9_2	CGAGCTCGTCGCACTTCTTC	4532-4551
HCV-1a_F10	TTGCTCTGTCCACCACCGGAG	4435-4455
HCV-1a_R10	TCAAGATGGTCTTGGCACACGG	4987-5008
HCV-1a_F10_2	ACTGTCCTTGACCAGGCAGAG	4332-4352
HCV-1a_R10_2	CACACGGTGGCTTGGTATG	5104-5122
HCV-1a_F10_3	TGCCCACTACTGGAGAGATTCC	4441-4462
HCV-1a_F10-4	CCATCCTAGCATCGAGGAGG	4415-4434
HCV-1a_F10-5	CCACGGATGCCACATCCATC	4301-4319
HCV-1a_F10_6	GTTGCTTTGGGCACCACC	4434-4451
HCV-1a_R10_3	GCTTGAGCTCTAGCGCACAC	5118-5137
HCV-1a_R10_4	GTGGCTTGGTACGCTACCAGG	5096-5116
HCV-1a_R10_5	GGCGTCTATGTGAGTGAGGCC	5031-5051

HCV-1a_F11	GCCGAGACCACAGTTAGGCTACG	4664-4960
HCV-1a_R11	GGCGAGCATCATCCCTTGCTC	5496-5516
HCV-1a_F12	CGGGAAGCCGGCAATCATAC	5408-5427
HCV-1a_R12	CCGCTCATGATCTTGAATGCTAC	5931-5593
HCV-1a_F12_2	TTTGGCTGCGTATTGCCTGTC	5348-5368
HCV-1a_R12_2	TACGAGGGCTCCAGGTGAGAG	6000-6020
HCV-1a_F12_3	TATCATGACATGCATGTCGGC	5273-5293
HCV-1a_R12_3	CCGAGCTTATCCATTGGTGC	6221-6240
HCV-1a_F12_4	CAGGCTGCGTGGTCATAGTG	5371-5390
HCV-1a_R12_4	CGAGTGTGCATAATGCCGTC	6405-6424
HCV-1a_F13	TTCTCGTGGACATCCTTGCAGG	5881-5902
HCV-1a_R13	GACCGACGATCCTCATCGTCC	6466-6486
HCV-1a_F13_2	GTGCCGCTACCGCCTTTG	5812-5829
HCV-1a_R13_2	GGAAGGTTCCACTCCACATGTTC	6500-6522
HCV-1a_F14	GGAGCTGAGATCACTGGACATGTC	6435-6458
HCV-1a_R14	TGGTGCAAGTTGCCTTGAGAG	6970-6990
HCV-1a_F15	GGAGGTTAGCAAGGGGATCGC	6904-6924
HCV-1a_R15	CCGTCGCTGAGATCCGGATC	7530-7549

HCV-1a_F15_2	CCATATAACAGCAGAGGCAGCCAGG	6878-6902
HCV-1a_R15_2	ACATCTTCCGTGCCAGCCTCACTAC	7567-7591
HCV-1a_F15_3	GACGTCCATGCTCACTGATCC	6854-6874
HCV-1a_R15_3	GTGCGCCAGTCCAGGAGTAAG	7609-7629
HCV-1a_F16	ACGCTGAGTCCTATTCTTCCATGC	7483-7506
HCV-1a_R16	CAGAAAACTTCGTTCTTAGCCATGATG	8012-8038
HCV-1a_F17	CGTAAACCACATCAACTCCGTGTG	7946-7969
HCV-1a_R17	TGATGTAGCAAGTGAGGGTGTTACCAC	8467-8493
HCV-1a_F18	GGAAAACTGCGGCTATCGCAG	8414-8434
HCV-1a_R18	CCATGGAGTCTTTGAATGATTGGAG	8980-9004
HCV-1a_F19	CCAGGGATCAGCTTGAACAGG	8905-8925
HCV-1a_R19	CCTCTGGACAGAAGCTTAGCGC	9124-9145

[a] According to the nucleotide numbering in the H77 reference sequence.

F, forward primer; R, reverse primer.

TABLE S2 HCV whole-genome sequences used in this study (The first data set, n = 100)

Genotype	Sequence (Genbank accession number)	Reference
1a	EF032885, EF032886, EF032890, EF032900	(1)
1a	EU155216, EU155238, EU155244, EU155248, EU155271, EU155290, EU155295, EU155311, EU155323, EU155338, EU155339, EU155340, EU155341, EU155343, EU155344, EU155345, EU155352, EU155353, EU155355, EU155380, EU255928, EU255929, EU255935, EU255937, EU255948, EU255952, EU255953, EU255955, EU255956, EU255957, EU255958, EU255966, EU255970, EU255975, EU255976, EU255977, EU255978, EU255980, EU255983, EU255985, EU255987, EU255988, EU255992, EU255995, EU255997, EU256007, EU256015, EU256032, EU256035, EU256053, EU256058, EU256069, EU256070, EU256071, EU482831, EU482852,	(2)

	EU482854, EU482855, EU482856, EU482857, EU482858, EU482873, EU569722	
1a	EU781753, EU781767, EU781771, EU781772, EU781773, EU781776, EU781787, EU781789, EU781797	(3)
1a	JQ914271, JQ914273	(4)
1a	KC844049	(5)
1a	NC_004102 (AF009606)	(6)
1a	EU155312, EU155379, EU255967, EU256055, EU256094, EU256097, EU660387, EU687193, EU687194, EU687195, EU862824, EU862826, EU862827, EU862832, EU862834, FJ024276, FJ181999, FJ390394, FJ390395, FJ410172	Unpublished

TABLE S3 HCV whole-genome sequences used in this study (The second data set, n = 242)

Genotype	Sequence (Genbank accession number)	Reference
1a	AF009606	(6)
1a	D10749	(7)
1a	EF032883, EF032886, EF032887, EF032896	(1)
1a	EF407414, EF407415, EF407416, EF407417, EF407418, EF407419, EF407420, EF407422, EF407426, EF407431, EF407434, EF407435, EF407440, EF407442, EF407443, EF407445, EF407450, EF407451, EF407452, EF407453, EF407454, EF407456, EF407457	(8)
1a	EF621489	(9)

1a	EU155213, EU155214, EU155215, EU155216, EU155238, EU155239, EU155240, EU155243, EU155246, EU155248, EU155250, EU155251, EU155252, EU155266, EU155267, EU155269, EU155270, EU155271, EU155274, EU155275, EU155276, EU155285, EU155286, EU155289, EU155290, EU155291, EU155292, EU155293, EU155295, EU155297, EU155298, EU155309, EU155310, EU155311, EU155313, EU155314, EU155319, EU155320, EU155321, EU155322, EU155323, EU155338, EU155340, EU155341, EU155342, EU155343, EU155344, EU155345, EU155346, EU155347, EU155348, EU155351, EU155354, EU155378, EU155380, EU234064, EU250017, EU255929, EU255930, EU255931, EU255932, EU255933, EU255934, EU255936, EU255937, EU255938, EU255940, EU255941, EU255942, EU255946, EU255947, EU255949, EU255951, EU255952, EU255953, EU255954,	(2)

	EU255957, EU255963, EU255966, EU255968, EU255973, EU255976, EU255977, EU255978, EU255980, EU255981, EU255983, EU255984, EU255986, EU255988, EU255989, EU255990, EU255991, EU255994, EU255995, EU255996, EU255997, EU255999, EU256002, EU256005, EU256009, EU256010, EU256013, EU256015, EU256016, EU256017, EU256018, EU256019, EU256022, EU256023, EU256024, EU256025, EU256029, EU256030, EU256033, EU256035, EU256038, EU256039, EU256040, EU256041, EU256044, EU256046, EU256048, EU256049, EU256050, EU256051, EU256053, EU256060, EU256070, EU256087, EU256094, EU256097, EU256105, EU256106, EU260395, EU260396, EU482832, EU482835, EU482836, EU482837, EU482840, EU482843, EU482844, EU482845, EU482847, EU482850, EU482852, EU482854, EU482856, EU482861, EU482862, EU482863,	

	EU482864, EU482865, EU482866, EU482868, EU482869, EU482870, EU482871, EU482878, EU529679, EU569722, EU569723, EU595697, EU660384, EU660385	
1a	EU677247	(10)
1a	JQ914271, JQ914273	(4)
1a	KC844049	(5)
1a	EU155247, EU155265, EU155312, EU155350, EU155379, EU255959, EU255967, EU256055, EU256056, EU687194, EU687195, EU862824, EU862826, EU862827, EU862828, EU862831,	unpublished

	EU862832, EU862833, EU862834, EU862836, EU862840, FJ024274, FJ024275, FJ024276, FJ024280, FJ024281, FJ024282, FJ182000, FJ182001, FJ205869, FJ390395, FJ390399, FJ410172 GQ149768, HQ850278, HQ850279, HQ850280, HQ850281, HQ850283, HQ850285, HQ850289, HQ850290	

14 **TABLE S4** HCV core region sequences used in this study (n = 286)

Genotype	Sequence (Genbank accession number)	Reference
1a	AB092962	(11)
1a	AB705379	(12)
1a	AY522010, AY522053, AY522078, AY522158, AY522181, AY522326, DQ077736	(13)
1a	AY695437	(14)
1a	AY885238	(15)
1a	AY956468, AY956469	(16)
1a	D10749	(7)
1a	DQ430811	(17)
1a	DQ838745	(18)
1a	EF032886, EF032887, EF032896	(1)
1a	EF407418, EF407420, EF407424, EF407425, EF407426, EF407429, EF407430, EF407442, EF407444, EF407449, EF407450, EF407451, EF407453, EF407457	(8)
1a	EF560538, EF560542	(19)

1a	EU155214, EU155215, EU155216, EU155237, EU155239, EU155242, EU155244, EU155249, EU155251, EU155266, EU155267, EU155272, EU155274, EU155275, EU155284, EU155285, EU155286, EU155287, EU155293, EU155296, EU155299, EU155309, EU155310, EU155311, EU155314, EU155321, EU155322, EU155343, EU155344, EU155345, EU155346, EU155347, EU155378, EU155380, EU234064, EU250017, EU255929, EU255931, EU255936, EU255937, EU255939, EU255940, EU255942, EU255944, EU255945, EU255947, EU255949, EU255952, EU255953, EU255954, EU255956, EU255958, EU255968, EU255973, EU255974, EU255976, EU255978, EU255979, EU255980, EU255983, EU255984, EU255985, EU255986, EU255990, EU255991, EU255992, EU255993, EU256003, EU256009, EU256010, EU256011, EU256014, EU256016, EU256018, EU256024, EU256026,	(2)

	EU256027, EU256032, EU256036, EU256040, EU256044, EU256052, EU256058, EU256060, EU256067, EU256068, EU256070, EU256071, EU256074, EU256087, EU256096, EU256097, EU256104, EU256105, EU256106, EU260396, EU482836, EU482845, EU482847, EU482848, EU482850, EU482854, EU482856, EU482861, EU482863, EU482864, EU482865, EU482866, EU482868, EU482869, EU482872, EU482873, EU529679, EU529681, EU569722, EU660383, EU660384, EU660385	
1a	EU781746, EU781748, EU781750, EU781755, EU781757, EU781758, EU781762, EU781763, EU781768, EU781770, EU781772, EU781774, EU781776, EU781780, EU781782, EU781785, EU781787, EU781789, EU781797, EU781798, EU781800, EU781802, EU781803	(3)
1a	FJ911736	(20)

1a	FN666291, FN666302, FN666306, FN666310, FN666312, FN666316, FN666319, FN666320, FN666321, FN666323, FN666326	(21)
1a	GQ451336	(22)
1a	HM041976, HM041980, HM041981	(23)
1a	JQ343803, JQ343823, JQ914271	(24)
1a	JQ924876, JQ924878, JQ924879, JQ924880, JQ924882, JQ924883, JQ924885, JQ924887	(25)
1a	JX463525, JX463537, JX463538, JX463539, JX463545, JX463553, JX463558, JX463562, JX463567, JX463572, JX463573, JX463574, JX463575, JX463580, JX463585, JX463587, JX463589, JX463593, JX463596, JX463602, JX463604, JX463605, JX463608, JX463611, JX463618, JX463619, JX463621, JX463624, JX463625, JX463628, JX463634, JX463636, JX463637, JX463639	(26)
1a	KC143868, KC143869, KC143870, KC143871, KC143872, KC143874, KC143876, KC143877	(27)
1a	KC844049	(5)

1a	L12353	(28)
1a	M74804, M74812	(29)
1a	NC_004102 (AF009606)	(6)
1a	U10194, U10196, U10206, U10207, U10222, U10232	(30)
1a	U55281, U55285	(31)
1a	AF512996, EU155312, EU155350, EU155379, EU256042, EU 256056, EU482889, EU660387, EU687193, EU687194, EU862823, EU862828, EU862831, EU862834, EU862838, EU862840, FJ024087, FJ024276, FJ024281, FJ181999, FJ182001, FJ205867, FJ205868, FJ205869, HQ828059, KC143917, KC143919, KC143921	Unpublished
1b	AB016785	(32)
1b	AJ132996	(33)
1b	DQ071885	(34)
1b	EF407479	(8)
1b	U01214	(35)

16 **TABLE S5** HCV NS5B region sequences used in this study (n = 377)

Genotype	Sequence (Genbank accession number)	Reference
1a	D10749	(7)
1a	EF032886	(1)
1a	EF407413, EF407415, EF407419, EF407423, EF407427, EF407428, EF407432, EF407433, EF407435, EF407436, EF407438, EF407439, EF407440, EF407441, EF407450, EF407451, EF407453, EF407457	(8)
1a	EF621489	(9)

1a	EU155213, EU155214, EU155216, EU155236, EU155237, EU155238, EU155240, EU155242, EU155243, EU155244, EU155246, EU155248, EU155249, EU155266, EU155268, EU155269, EU155270, EU155272, EU155274, EU155275, EU155276, EU155277, EU155278, EU155282, EU155283, EU155284, EU155285, EU155286, EU155287, EU155291, EU155292, EU155293, EU155294, EU155295, EU155296, EU155297, EU155299, EU155309, EU155310, EU155311, EU155313, EU155314, EU155319, EU155320, EU155321, EU155322, EU155323, EU155339, EU155340, EU155341, EU155345, EU155346, EU155347, EU155348, EU155349, EU155350, EU155352, EU155353, EU155355, EU155378, EU155380, EU234063, EU234064, EU239713, EU239715, EU239716, EU255927, EU255928, EU255929, EU255930, EU255931, EU255933, EU255936, EU255937, EU255940, EU255941,	(2)

	EU255943, EU255944, EU255946, EU255947, EU255948, EU255949, EU255950, EU255951, EU255952, EU255953, EU255954, EU255956, EU255957, EU255963, EU255964, EU255965, EU255966, EU255968, EU255969, EU255970, EU255973, EU255974, EU255981, EU255982, EU255984, EU255985, EU255986, EU255989, EU255992, EU255994, EU255995, EU255996, EU255999, EU256002, EU256003, EU256004, EU256005, EU256007, EU256008, EU256011, EU256013, EU256014, EU256017, EU256018, EU256019, EU256022, EU256023, EU256024, EU256025, EU256027, EU256031, EU256032, EU256033, EU256034, EU256035, EU256036, EU256037, EU256038, EU256039, EU256040, EU256041, EU256043, EU256044, EU256047, EU256049, EU256050, EU256051, EU256052, EU256053, EU256058, EU256060, EU256067, EU256071, EU256072, EU256074, EU256087,	

	EU256094, EU256095, EU256105, EU256106, EU256107, EU260395, EU260396, EU482831, EU482832, EU482834, EU482836, EU482837, EU482838, EU482840, EU482842, EU482843, EU482844, EU482845, EU482847, EU482852, EU482853, EU482854, EU482855, EU482856, EU482857, EU482858, EU482861, EU482862, EU482863, EU482864, EU482866, EU482868, EU482869, EU482870, EU482871, EU482872, EU482876, EU482878, EU529676, EU529677, EU529679, EU529680, EU529681, EU569722, EU595697, EU595698, EU660383, EU660384, EU660385	
1a	EU362895	(36)
1a	EU781747, EU781748, EU781749, EU781750, EU781751, EU781752, EU781753, EU781754, EU781755, EU781757, EU781758, EU781759, EU781760, EU781761, EU781762, EU781765,	(3)

	EU781767, EU781768, EU781769, EU781771, EU781773, EU781774, EU781775, EU781779, EU781780, EU781784, EU781785, EU781786, EU781787, EU781788, EU781789, EU781790, EU781791, EU781792, EU781793, EU781795, EU781798, EU781799, EU781801, EU781802, EU781804	
1a	JX437195, JX437196, JX437197, JX437198, JX437199, JX437200, JX437202, JX437203, JX437204, JX437205, JX437206, JX437207, JX437208, JX437211, JX437212, JX437213, JX437214, JX437215, JX437217, JX437218, JX437220, JX437221, JX437223, JX437224, JX437225, JX437226, JX437227, JX437228, JX437229, JX437230, JX437231, JX437232, JX437233, JX437236, JX437237, JX437241, JX437242, JX437243, JX437244, JX437245, JX437246, JX437248, JX437249, JX437251, JX437253, JX437254, JX437255, JX437257, JX437258, JX437259, JX437260, JX437261, JX437262, JX437263, JX437264,	(37)

	JX437265, JX437266, JX437268, JX437269, JX437270, JX437271, JX437272, JX437273, JX437274, JX437275, JX437277, JX437278, JX437279, JX437280	
1a	JX463540, JX463549, JX463574, JX463599, JX463611, JX463627, JX463634, JX463640	(26)
1a	KC844049	(5)
1a	EU155247, EU155265, EU155273, EU155379, EU255959, EU255967, EU256086, EU660387, EU687195, EU862823, EU862831, EU862832, EU862834, EU862839, EU862841, FJ024087, FJ024274, FJ024275, FJ024276, FJ024278, FJ024280, FJ024281, FJ024282, FJ181999, FJ182000, FJ182001, FJ205867, FJ205868, FJ390394, FJ390395, GQ149768, HQ850283, HQ850284, HQ850285, HQ850290	unpublished
1b	AB016785	(32)

1b	AJ132996	(33)
1b	DQ071885	(34)
1b	EF407479	(8)
1b	U01214	(35)

TABLE S6 Estimated substitution rate results for 26 whole-genome strains from Okinawa and 100 reference sequences

Coalescent model	**Substitution rate (substitution/site/year) (95% HPD[b] interval)**	**Coefficient of variation**	**Marginal log likelihood**	**Log10 Bayes factor[b]**
Constant	1.18×10^{-3} ($9.97 \times 10^{-4} – 1.35 \times 10^{-3}$)	0.218 (0.190 - 0.248)	-162195.877	-9.089
Exponential	1.01×10^{-3} ($8.14 \times 10^{-4} – 1.20 \times 10^{-3}$)	0.215 (0.187 - 0.245)	-162196.324	-9.536
BSP[a]	1.13×10^{-3} ($9.68 \times 10^{-4} – 1.29 \times 10^{-3}$)	0.201 (0.179 - 0.226)	-162186.788	-

[a]BSP, Bayesian skyline plot

[b]HPD, highest posterior density

[c]A log10 Bayes factor was calculated by comparing with the BSP model.

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