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APPENDICES

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## APPENDIX A

### MOLECULAR TECHNIQUES AND REAGENT

#### I. Molecular Techniques

##### 1. Small-scale preparation of plasmid

- 1.1 Transfer a single bacteria colony into 2 ml. of LB medium containing the appropriate antibiotic in a loosely capped 15 ml. tube. Incubate the culture overnight at 37 °C with vigorous shaking.
- 1.2 Pour 1.5 ml of the culture into a microcentrifuge tube. Centrifuge at 12,000g for 30 seconds at 4 °C. Store the remainder of the culture at 4°C.
- 1.3 Remove the medium by aspiration, leaving the bacteria pellet as dry as possible.
- 1.4 Resuspend the bacteria pellet in 100 µl of ice-cold Solution I by vigorous vortexing.

Solution I

50 mM glucose

25 mM Tris-Cl (pH 8.0)

10 mM EDTA (pH 8.0)

Solution I can be prepared in batches of approximately 100 ml., autoclaved for 15 minutes at 10 lb/sq. on liquid cycle, and stored at 4 °C

- 1.5 Add 200 µl of freshly prepared Solution II

Solution II

0.2 N NaOH (fresh diluted from a 10 N stock)

1% SDS

Close the tube tightly, and mix the contents by inverting the tube rapidly five times. Make sure that the entire surface of the tube comes in contact with Solution II. Do not vortex. Store the tube on ice.

- 1.6 Add 150  $\mu$ l of ice-cold Solution III

Solution III

5 M potassium acetate 60 ml.

glacial acetic acid 11.5 ml.

H<sub>2</sub>O 28.5 ml.

Close the tube and mix gently in an inverted position for 10 seconds to disperse Solution III through the viscous bacterial lysate. Store the tube on ice for 3-5 minutes

- 1.7 Centrifuge at 12,000 g for 5 minutes at 4 °C in a microcentrifuge. Transfer the supernatant to a fresh tube.

- 1.8 Precipitate the double-stranded DNA with 2 volumes of ethanol at room temperature. Mix by vortexing. Allow the mixture to stand at -20 °C for 1 hour.

- 1.9 Centrifuge at 12,000 g for 15 minutes at 4 °C in a microcentrifuge

- 1.10 Remove the supernatant by gentle aspiration. Stand the tube in an inverted position on a paper towel to allow all of the fluid to drain away. Remove any drops of fluid adhering to the walls of the tubes.

- 1.11 Rinse the pellet of double-stranded DNA with 1 ml. of 70% ethanol at 4 °C. Remove the supernatant as described in step 1.9 and 1.10, and allow the pellet of nucleic acid to dry in the air for 10 minutes.

- 1.12 Redissolve the nucleic acids in 50  $\mu$ l of TE (pH8.0) containing DNAase-free pancreatic Rnase (20  $\mu$ g/ml). Vortex briefly, stored the DNA at -20 °C.

2. Rapid disruption of bacterial colonies to test the size of plasmids

- 2.1 Grow bacteria colonies on rich agar medium (LB or SOB) containing the appropriate antibiotic until they are approximately 1 mm in diameter.

- 2.2 Using a sterile toothpick or disposable loop, transfer a small segment of a bacterial colony to a streak or patch on a master agar plate containing the appropriate antibiotic. When all of the colonies have been replicated in this fashion, incubate the master plate for several

hours at 37 °C and then store it at 4 °C until it is needed to recover the appropriate colonies.

- 2.3 Transfer the remainder of each colony from the original plate to a sterile microcentrifuge tube containing LB medium (about 800 µl) and incubate the culture 6 hours at 37 °C with vigorous shaking.
  - 2.4 Pour 300 µl of the culture into a microcentrifuge tube. Centrifuge at 12,000g for 30 seconds at 4 °C. Store the remainder of the culture at 4°C.
  - 2.5 Remove the medium by aspiration, leaving the bacteria pellet as dry as possible.
  - 2.6 Resuspend the bacteria pellet in 50 µl of a sterile solution of 10 mM EDTA (pH 8.0).
  - 2.7 Add 50 µl of a freshly made solution of 0.2 N NaOH, 0.5% NaOH, 0.5% SDS, 20% sucrose. Vortex the mixture for 30 seconds.
  - 2.8 Incubate the mixture for 5 minutes at 70 °C, and then allow it to cool to room temperature.
  - 2.9 Add 1.5 µl of a solution of 4 M KCl and 0.5 µl of a solution containing 0.4% bromophenol blue. Vortex the mixture for 30 seconds.
  - 2.10 Incubate the mixture for 5 minutes on ice.
  - 2.11 Remove bacterial debris by centrifugation at 12,000g for 3 minutes at 4 °C in a microcentrifuge.
  - 2.12 Load 50 µl of the supernatant into a slot case in a 0.8% agarose gel.
  - 2.13 After the dye has migrated two thirds to three fourths the length of the gel, stain the gel by soaking it for 10-15 minutes in a solution of ethidium bromide (0.5 µg/ml in water) at room temperature.
3. Fill-in and dephosphorylation of linearized plasmid DNA
    - 3.1 Digest closed circular plasmid DNA (10-20 µg) with a two- to threefold excess of the desired restriction enzyme for 1 hour. Remove an aliquot (0.3 µg), and analyzed the extent of digestion by electrophoresis through a 0.8% agarose gel, using undigested plasmid DNA as a



marker. If digestions incomplete, add more restriction enzyme and continue the incubation.

- 3.2 When digestion is complete, extract the sample with phenol:chloroform and precipitate the DNA with 2 volumes of ethanol for 15 minutes at  $-20^{\circ}\text{C}$ . Recover the DNA by centrifugation at 12,000 g for 15 minutes at  $4^{\circ}\text{C}$  in a microcentrifuge, and redissolve it in  $90\ \mu\text{l}$  of 10 mM Tris-HCl (pH 8.3). Remove an aliquot of the DNA (200 ng) and store it at  $-20^{\circ}\text{C}$ .
- 3.3 To fill in sticky ends of digested DNA, adding Klenow polymerase enzyme and incubate at room temperature for 10 minutes.

Digested DNA	1 $\mu\text{g}$
Klenow 5x buffer	10 $\mu\text{l}$
1 mg/ml acetylated BSA	1 $\mu\text{l}$
2 mM dNTP	1 $\mu\text{l}$
Klenow polymerase	1-5 U
Sterile $\text{H}_2\text{O}$ to a final volume of 50 $\mu\text{l}$	

After incubation, extract DNA once with phenol and once with phenol:chloroform. Add 0.1 volume of 3 M sodium acetate (pH 7.0). Mix well, and add 2 volumes of ethanol. Mix well, and store at  $-20^{\circ}\text{C}$  for 15 minutes. Recover the DNA by centrifugation at 12,000 g for 10 minutes at  $4^{\circ}\text{C}$  in a microcentrifuge. Wash the pellet with 70% ethanol at  $4^{\circ}\text{C}$  and recentrifuge. Redissolve the precipitated DNA in 50  $\mu\text{l}$  TE buffer (pH 8.0).

- 3.4 To the filling in of the DNA, add 10  $\mu\text{l}$  of 10x CIP (Calf intestinal alkaline phosphatase) dephosphorylation buffer and the appropriate amount of CIP and incubate under the appropriate conditions.

10X CIP dephosphorylation buffer
10 mM $\text{ZnCl}_2$
10 mM $\text{MgCl}_2$
100 mM tris-HCl (pH 8.3)

Amount of CIP required 1 unit / 2 pmoles of 5'-terminal phosphate residues DNA and incubate 15 minutes at 37 °C. Then add another aliquot of CIP and continue incubation for a further 45 minutes at 55 °C. (2 µg of a linearized plasmid DNA 5 kb in length contains approximately 1.2 pmoles of 5'-terminal phosphate residues)

- 3.5 At the end of the incubation period, add SDS and EDTA (pH 8.0) to final concentrations of 0.5% and 5 mM, respectively. Mix well, and add proteinase K to a final concentration of 100 µg/ml. Incubation for 30 minutes at 56 °C.
- 3.6 Cool the reaction to room temperature, and extract once with phenol and once with phenol:chloroform. Precipitate DNA as describe in 3.3. Redissolve the precipitated DNA in TE (pH 7.6) at a concentration of 100 µg/ml. Store in aliquots at -20 °C.

## II. Reagents and buffer

1. 1X Tris boric EDTA (TBE) Buffer

150 mM NaCl

20 mM Tris HCl pH 7.4

2. 6X loading dye

Bromphenol blue                      0.25    g

Xylenecyanol                              0.25    g

Glycerol                                      50      ml

1 M Tris (pH 8.0)                          1        ml

Distilled water until                      100     ml

Mixed and stored at 4 °C

3. Buffer for ELISPOT

- 3.1 Carbonate buffer (coating buffer) :

1.6 g Na<sub>2</sub>CO<sub>3</sub> (15 mM)

2.9 g NaHCO<sub>3</sub> (35 mM)

0.2 g NaN<sub>3</sub> (3.1 mM)

Distilled water to 1 liter and adjust to pH 9.5

- 3.2 Washing buffer :
- PBS
  - 0.05 % Tween 20
4. K-PBS buffer for electroporation :
- 0.175 g NaCl (30 mM)
  - 0.895 g KCl (120 mM)
  - 0.053 g Na<sub>2</sub>HPO<sub>4</sub> (3 mM)
  - 0.02 g KH<sub>2</sub>PO<sub>4</sub> (1.5 mM)
  - 0.102 g MgCl<sub>2</sub> (5 mM)
  - Distilled water to 100 ml
5. Staining buffer for FACS analysis :
- PBS
  - 10% normal human pooled serum
6. R10F complete medium :
- 2 mM L-Glutamine
  - 100 µg/ml Streptomycin
  - 100 U/ml Penicillin
  - 10% Fetal Bovine Serum , heat-inactivated 1 hr at 56 °C
  - RPMI 1640
7. R10H blocking medium :
- 2 mM L-Glutamine
  - 100 µg/ml Streptomycin
  - 100 U/ml Penicillin
  - 10% Pooled Human Serum , heat-inactivated 1 hr at 56 °C, filtrated
  - RPMI 1640
8. Freezing medium :
- 80% Fetal Bovine Serum , heat-inactivated 1 hr at 56 °C
  - 10% DMSO
  - 10% RPMI 1640
9. GTC
- 12.5 g GTC

16.08 ml Rnase free water

0.33 ml 2 M sodium acetate

0.44 ml 30% Sodium-N-Lauroyl-sarcosinate

incubated in 65 °C waterbath for 1 hour and at room temperature for 20 minutes, keep in refrigerator.

10. GTC-2 ME

9 ml GTC

70  $\mu$ l 2 ME



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## APPENDIX B

General description of 100 anti-HCV positive blood donors used in this study.

Number	Code	PCR	Genotype		Accession Number
			RFLP	Sequencing	
1	09723	Positive	1a	1a	AF484973
2	14633	Positive	1b	1a	AF484969
3	15473	Positive	1b	1a	AF484972
4	15465	Positive	1b	1a	AF484971
5	09955	Positive	1a	1a	AF484970
6	11085	Positive	1a	1a	AY089766
7	12333	Positive	1a	1a	AY089761
8	08166	Positive	1a	1a	AY089760
9	10333	Positive	1a	1a	AY089762
10	11882	Positive	1a	1a	AY089765
11	14292	Positive	1b	1a	AF528323
12	00879	Positive	1a	1a	AF525884
13	11352	Positive	1a	1a	AF525885
14	13481	Positive	1b	1a	AF525886
15	07265	Positive	1a	1a	AF525883
16	07965	Positive	1b	1a	AF484978
17	09612	Positive	1b	1b	AF484974
18	09896	Positive	1b	1b	AY089749
19	95263	Positive	1b	1b	AY089750
20	08035	Positive	1b	1b	AY089751
21	09152	Positive	1b	1b	AY089747
22	06804	Positive	1b	1b	AY089748
23	13333	Positive	1b	1b	AF525889
24	10335	Positive	1b	1b	AF525890
25	15467	Positive	1b	1b	AF525891
26	00654	Positive	1b	1b	AF525892
27	09172	Positive	1b	1b	AF525893

Number	Code	PCR	Genotype		Accession Number
			RFLP	Sequencing	
28	10298	Positive	1b	1b	AF525894
29	88283	Positive	1a	1b	AF525887
30	87190	Positive	1b	1b	AF525888
31	05927	Positive	1a	3b	AF484981
32	07941	Positive	3a	3a	AF484982
33	09555	Positive	3a	3a	AF484983
34	11025	Positive	3a	3b	AY089772
35	08782	Positive	3a	3a	AF484985
36	10912	Positive	3a	3a	AF484986
37	12001	Positive	3a	3a	AF484987
38	09715	Positive	6v	3a	AF484988
39	11224	Positive	3a	3a	AF484989
40	15251	Positive	1b	3a	AF484990
41	92597	Positive	3a	3a	AY089777
42	07893	Positive	3a	3a	AY089778
43	97197	Positive	3a	3a	AY089779
44	11445	Positive	3a	3a	AY089780
45	13590	Positive	3a	3a	AY089781
46	11671	Positive	3a	3a	AY089782
47	06799	Positive	3a	3a	AY089773
48	08720	Positive	3a	3a	AY089774
49	08629	Positive	3a	3a	AY089775
50	15201	Positive	3a	3a	AY089776
51	12208	Positive	3a	3a	AF525895
52	95188	Positive	1b	3a	AF525896
53	11988	Positive	1b	3a	AF525897
54	19688	Positive	3a	3a	AF525898
55	31631	Positive	3a	3a	AF525899
56	16079	Positive	3a	3a	AF525900
57	11614	Positive	6v	3a	AF525901
58	04537	Positive	3a	3b	AF528324
59	81769	Positive	1a	3a	AF525902

Number	Code	PCR	Genotype		Accession Number
			RFLP	Sequencing	
60	12381	Positive	3a	3b	AF525903
61	13066	Positive	3a	3a	AF525904
62	06165	Positive	3a	3b	AF525905
63	16800	Positive	3a	3a	AF525907
64	14304	Positive	3a	3a	AF525908
65	69465	Positive	6v	6a	AF484976
66	11885	Positive	3a	6a	AF484979
67	08756	Positive	6a	6a	AF484980
68	14400	Positive	6a	6a	AF484977
69	02234	Positive	6a	6a	AY089754
70	70646	Positive	6a	6a	AY089755
71	92855	Positive	6a	6a	AY089756
72	05458	Positive	6a	6a	AY089757
73	08795	Positive	6a	6a	AY089758
74	10442	Positive	6a	6a	AY089759
75	74822	Positive	6a	6a	AY089763
76	14850	Positive	6a	6a	AF528325
77	21777	Positive	6a	6a	AF528326
78	09272	Positive	3a	N.D.	
79	69821	Positive	1b	N.D.	
80	12707	Positive	1b	N.D.	
81	12187	Positive	3a	N.D.	
82	20033	Positive	3a	N.D.	
83	20446	Positive	1a	N.D.	
84	19988	Positive	3a	N.D.	
85	92707	Positive	6a	N.D.	
86	29664	Positive	1a	N.D.	
87	12865	Positive	3a	N.D.	
88	68058	Positive	1a	N.D.	
89	31524	Positive	1a	N.D.	
90	31303	Positive	3a	N.D.	
91	07172	Negative			

Number	Code	PCR	Genotype		Accession Number
			RFLP	Sequencing	
92	10391	Negative			
93	08087	Negative			
94	08931	Negative			
95	95311	Negative			
96	69144	Negative			
97	02120	Negative			
98	09461	Negative			
99	14090	Negative			
100	13182	Negative			

Note : The bold letter indicated 41 selected HCV RNA positive blood used for HCV specific response study



ศูนย์วิทยทรัพยากร  
จุฬาลงกรณ์มหาวิทยาลัย



## APPENDIX C

## SUBMITTED HCV CORE SEQUENCES

LOCUS AF484969 360 bp RNA linear VRL 27-MAR-2002  
 DEFINITION Hepatitis C virus strain bbl46331a polyprotein gene, partial cds.  
 ACCESSION AF484969  
 VERSION AF484969.1 GI:19744423  
 KEYWORDS .  
 SOURCE Hepatitis C virus  
 ORGANISM Hepatitis C virus  
 Viruses; ssRNA positive-strand viruses, no DNA stage; Flaviviridae; Hepacivirus.  
 REFERENCE 1 (bases 1 to 360)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M. and Poovorawan,Y.  
 TITLE Hepatitis C virus genotyping by RFLP and direct sequencing in Thailand  
 JOURNAL Unpublished  
 REFERENCE 2 (bases 1 to 360)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M. and Poovorawan,Y.  
 TITLE Direct Submission  
 JOURNAL Submitted (20-FEB-2002) Hepatitis Research Unit, Chulalongkorn University and Hospital, Rama4, Pratumwan, Bangkok 10330, Thailand  
 FEATURES Location/Qualifiers  
 source 1..360  
 /organism="Hepatitis C virus"  
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 /db\_xref="taxon:11103"  
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 PTDPRRRSRNLGKVIDTL"  
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 121 cgcgcgacga gaaagacttc cgagcggtcg caccctcgag gtagacgca gcctatcccc  
 181 aaggcgcgctc ggcccgaggg caggacctgg gctcagccc ggtacccttg gccctctat  
 241 ggcaatgagg gctgcgggtg ggcgggatgg ctctgtccc cccgtggctc tcggcctage  
 301 tggggcccta cggaccccc gcgtaggtcg cgcaatttg gtaaggtcat cgatacctta  
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LOCUS AF484970 363 bp RNA linear VRL 11-JUN-2002  
 DEFINITION Hepatitis C virus strain bb099551a polyprotein gene, partial cds.  
 ACCESSION AF484970  
 VERSION AF484970.1 GI:19744425  
 KEYWORDS .  
 SOURCE Hepatitis C virus  
 ORGANISM Hepatitis C virus  
 Viruses; ssRNA positive-strand viruses, no DNA stage; Flaviviridae; Hepacivirus.  
 REFERENCE 1 (bases 1 to 363)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M., Chinchai,T. and Poovorawan,Y.  
 TITLE Hepatitis C virus genotyping by RFLP and direct sequencing in Thailand  
 JOURNAL Unpublished  
 REFERENCE 2 (bases 1 to 363)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M., Chinchai,T. and Poovorawan,Y.  
 TITLE Direct Submission  
 JOURNAL Submitted (20-FEB-2002) Hepatitis Research Unit, Chulalongkorn University and Hospital, Rama4, Pratumwan, Bangkok 10330, Thailand  
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 PTDPRGRSRNLGKAIDTLT"  
 BASE COUNT 71 a 112 c 117 g 63 t  
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 121 cgcgcgacga ggaagacttc cgagcggctc caacctcgag gtagacgtca gcctatcccc  
 181 aaggcgcgtc ggcccagagg caggacctgg gctcaaccg ggtacccttg gccctctat  
 241 ggcaatgagg gctgcgggtg ggcgggatgg cttctgtccc cccgtggctc tcggcctaac  
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 361 acg  
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LOCUS AF484971 360 bp RNA linear VRL 27-MAR-2002  
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 ACCESSION AF484971  
 VERSION AF484971.1 GI:19744427  
 KEYWORDS .  
 SOURCE Hepatitis C virus  
 ORGANISM Hepatitis C virus  
 Viruses; ssRNA positive-strand viruses, no DNA stage;  
 Flaviviridae;Hepacivirus.  
 REFERENCE 1 (bases 1 to 360)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M. and  
 Poovorawan,Y.  
 TITLE Hepatitis C virus genotyping by RFLP and direct sequencing in  
 Thailand  
 JOURNAL Unpublished  
 REFERENCE 2 (bases 1 to 360)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M. and  
 Poovorawan,Y.  
 TITLE Direct Submission  
 JOURNAL Submitted (20-FEB-2002) Hepatitis Research Unit, Chulalongkorn  
 University and Hospital, Rama4, Pratumwan, Bangkok 10330,  
 Thailand  
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 PTDPRRRSRNLGKVIDTL"  
 BASE COUNT 68 a 109 c 117 g 66 t  
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 121 cgcgcgacga ggaagacttc cgagcggtcg caacctcgag gtagacgtca gcctatcccc  
 181 aaggcgcgtc ggcccgaggg caggacctgg gctcagcccg ggtacccttg gcctctctat  
 241 ggcaatgagg gctgcgggtg ggcgggatgg ctcctgtctc cccgtggctc tcggcctagt  
 301 tggggcccca cagacccccg gcgtaggtcg cgcaatttgg gtaaggtcat cgatacctta  
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LOCUS AF484972 360 bp RNA linear VRL 27-MAR-2002  
 DEFINITION Hepatitis C virus strain bb154731a polyprotein gene, partial cds.  
 ACCESSION AF484972  
 VERSION AF484972.1 GI:19744429  
 KEYWORDS .  
 SOURCE Hepatitis C virus  
 ORGANISM Hepatitis C virus  
 Viruses; ssRNA positive-strand viruses, no DNA stage; Flaviviridae; Hepacivirus.  
 REFERENCE 1 (bases 1 to 360)  
 AUTHORS Theamboonlers, A., Bedi, K., Scotraj, N., Sriponthong, M. and Poovorawan, Y.  
 TITLE Hepatitis C virus genotyping by RFLP and direct sequencing in Thailand  
 JOURNAL Unpublished  
 REFERENCE 2 (bases 1 to 360)  
 AUTHORS Theamboonlers, A., Bedi, K., Scotraj, N., Sriponthong, M. and Poovorawan, Y.  
 TITLE Direct Submission  
 JOURNAL Submitted (20-FEB-2002) Hepatitis Research Unit, Chulalongkorn University and Hospital, Rama4, Pratumwan, Bangkok 10330, Thailand  
 FEATURES Location/Qualifiers  
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 PTDPRRRSRNLGKVIDTL"  
 BASE COUNT 69 a 111 c 116 g 64 t  
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 121 cgcgcgacga ggaagacttc cgagcgtcgc caacctcgag gtagacgtca gcctatcccc  
 181 aagcgcgctc ggcccaggcg caggacctgg gctcagcccc ggtacccttg gccctctat  
 241 ggcaatgagg gctgcgggtg ggcaggatgg ctcttgcccc cccgtggctc tcggcctagc  
 301 tggggcccga cagacccccg gcgtaggtcg cgcaatttgg gtaaggtcat cgatacctta  
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LOCUS AF484973 363 bp RNA linear VRL 11-JUN-2002  
 DEFINITION Hepatitis C virus strain bb097231a polyprotein gene, partial cds.  
 ACCESSION AF484973  
 VERSION AF484973.1 GI:19744431  
 KEYWORDS .  
 SOURCE Hepatitis C virus  
 ORGANISM Hepatitis C virus  
 Viruses; ssRNA positive-strand viruses, no DNA stage; Flaviviridae; epacivirus.  
 REFERENCE 1 (bases 1 to 363)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M., Chinchai,T.and Poovorawan,Y.  
 TITLE Hepatitis C virus genotyping by RFLP and direct sequencing in Thailand  
 JOURNAL Unpublished  
 REFERENCE 2 (bases 1 to 363)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M., Chinchai,T.and Poovorawan,Y.  
 TITLE Direct Submission  
 JOURNAL Submitted (20-FEB-2002) Hepatitis Research Unit, Chulalongkorn University and Hospital, Rama4, Pratumwan, Bangkok 10330, Thailand  
 FEATURES Location/Qualifiers  
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 PNDPRRRSRNLGKVIDTLT"  
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 121 cgcgcgacga ggaagacttc cgagcggtcg caacctcgag gtagacgaca gcctatcccc  
 181 aaagatcggc gctccgaggg caggacctgg gctcagcccc ggaaccttg gccctctat  
 241 ggcaatgagg gcagcgggag gccgacatgc ctcttgccc cccgtggctc tcggcctact  
 301 tggggcccca atgacccccg gcgtaggtcg cgcaacttgg gtaaggtcat cgatacccta  
 361 acg

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LOCUS AF484974 357 bp RNA linear VRL 11-JUN-2002  
 DEFINITION Hepatitis C virus strain bb96121b polyprotein gene, partial cds.  
 ACCESSION AF484974  
 VERSION AF484974.1 GI:19744433  
 KEYWORDS .  
 SOURCE Hepatitis C virus  
 ORGANISM Hepatitis C virus  
 Viruses; ssRNA positive-strand viruses, no DNA stage;  
 Flaviviridae;Hepacivirus.  
 REFERENCE 1 (bases 1 to 357)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M., Chinchai,T.and Poovorawan,Y.  
 TITLE Hepatitis C virus genotyping by RFLP and direct sequencing in Thailand  
 JOURNAL Unpublished  
 REFERENCE 2 (bases 1 to 357)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M., Chinchai,T.and Poovorawan,Y.  
 TITLE Direct Submission  
 JOURNAL Submitted (20-FEB-2002) Hepatitis Research Unit, Chulalongkorn University and Hospital, Rama4, Pratumwan, Bangkok 10330, Thailand  
 FEATURES Location/Qualifiers  
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 121 cgcgcgacta ggaagacttc cgagcggtcg caacctcgcg gaaggcgaca acctatcccc  
 181 aaggctcgcc ggcccgaggg cagggcctgg gctcagcccg ggtacccttg gccctctat  
 241 ggcgatgagg gcatggggtg ggcaggatgg ctctgtccc cccgcggtc tcggcctagt  
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LOCUS AY089766 351 bp RNA linear VRL 13-APR-2002  
 DEFINITION Hepatitis C virus strain 110851a polyprotein gene, partial cds.  
 ACCESSION AY089766  
 VERSION AY089766.1 GI:20146991  
 KEYWORDS .  
 SOURCE Hepatitis C virus  
 ORGANISM Hepatitis C virus  
 Viruses; ssRNA positive-strand viruses, no DNA stage;  
 Flaviviridae;Hepacivirus.  
 REFERENCE 1 (bases 1 to 351)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M. and  
 Poovorawan,Y.  
 TITLE Hepatitis C virus genotyping by RFLP and direct sequencing in  
 Thailand  
 JOURNAL Unpublished  
 REFERENCE 2 (bases 1 to 351)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M. and  
 Poovorawan,Y.  
 TITLE Direct Submission  
 JOURNAL Submitted (13-MAR-2002) Hepatitis Research Unit, Chulalongkorn  
 University and Hospital, Rama4, Pratumwan, Bangkok 10330,  
 Thailand  
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 121 gaggaagact tccgagcggg cgcaacctcg aggtagacgt cagcctatcc ccaaggcgcg  
 181 tcggcccagag ggcaggacct gggctcagcc cgggtaccct tggcccctct atggcaatga  
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 301 tacagacccc cggcgtaggt cgcgcaattt gggttaaggtc atcgatactt t  
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LOCUS AF484976 345 bp RNA linear VRL 27-MAR-2002  
 DEFINITION Hepatitis C virus strain bb694656a polyprotein gene, partial cds.  
 ACCESSION AF484976  
 VERSION AF484976.1 GI:19744437  
 KEYWORDS .  
 SOURCE Hepatitis C virus  
 ORGANISM Hepatitis C virus  
 Viruses; ssRNA positive-strand viruses, no DNA stage; Flaviviridae; Hepacivirus.  
 REFERENCE 1 (bases 1 to 345)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M. and Poovorawan,Y.  
 TITLE Hepatitis C virus genotyping by RFLP and direct sequencing in Thailand  
 JOURNAL Unpublished  
 REFERENCE 2 (bases 1 to 345)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M. and Poovorawan,Y.  
 TITLE Direct Submission  
 JOURNAL Submitted (20-FEB-2002) Hepatitis Research Unit, Chulalongkorn University and Hospital, Rama4, Pratumwan, Bangkok 10330, Thailand  
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 RRSRNLGKVIDTL"  
 BASE COUNT 67 a 105 c 109 g 64 t  
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 61 ggtggagtct acttattgcc gcgcaggggc ccacgtttg gtgtgcgcgc gacgaggaag  
 121 acttctgaac ggtcccagcc cagaggcagg cgtcagcca taccaaaggc gcgccagcca  
 181 acgggcccgc actgggctca gcctggttac ccttgcccc tttatgggaa tgagggtgc  
 241 ggatggcgg gatggtcct gtcccccg gcgtcccgc ctaattggg cccaatgac  
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LOCUS AF484977 345 bp RNA linear VRL 27-MAR-2002  
 DEFINITION Hepatitis C virus strain bbl44006a polyprotein gene, partial cds.  
 ACCESSION AF484977  
 VERSION AF484977.1 GI:19744439  
 KEYWORDS .  
 SOURCE Hepatitis C virus  
 ORGANISM Hepatitis C virus  
 Viruses; ssRNA positive-strand viruses, no DNA stage;  
 Flaviviridae;Hepacivirus.  
 REFERENCE 1 (bases 1 to 345)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M. and Poovorawan,Y.  
 TITLE Hepatitis C virus genotyping by RFLP and direct sequencing in Thailand  
 JOURNAL Unpublished  
 REFERENCE 2 (bases 1 to 345)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M. and Poovorawan,Y.  
 TITLE Direct Submission  
 JOURNAL Submitted (20-FEB-2002) Hepatitis Research Unit, Chulalongkorn University and Hospital, Rama4, Pratumwan, Bangkok 10330, Thailand  
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 RRTRNLGKVIDTL"  
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 181 acgggccggc actgggctca gcctggttac ccttggeccc tttatggaaa tgagggtgc  
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 301 ccccgcgac gaaccgcaa tttgggtaaa gtcatcgata ccctt  
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LOCUS AF484978 357 bp RNA linear VRL 27-MAR-2002  
 DEFINITION Hepatitis C virus strain bb79651b polyprotein gene, partial cds.  
 ACCESSION AF484978  
 VERSION AF484978.1 GI:19744441  
 KEYWORDS .  
 SOURCE Hepatitis C virus  
 ORGANISM Hepatitis C virus  
 Viruses; ssRNA positive-strand viruses, no DNA stage; Flaviviridae; Hepacivirus.  
 REFERENCE 1 (bases 1 to 357)  
 AUTHORS Theamboonlers, A., Bedi, K., Scotraj, N., Sriponthong, M. and Poovorawan, Y.  
 TITLE Hepatitis C virus genotyping by RFLP and direct sequencing in Thailand  
 JOURNAL Unpublished  
 REFERENCE 2 (bases 1 to 357)  
 AUTHORS Theamboonlers, A., Bedi, K., Scotraj, N., Sriponthong, M. and Poovorawan, Y.  
 TITLE Direct Submission  
 JOURNAL Submitted (20-FEB-2002) Hepatitis Research Unit, Chulalongkorn University and Hospital, Rama4, Pratumwan, Bangkok 10330, Thailand  
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 BASE COUNT 64 a 111 c 119 g 63 t  
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 181 aaggcgcgctc ggcccgaggg caggacctgg gtcagcccg ggtacccttg gccctctat  
 241 ggcaatgagg gcttgggtg ggcgggatgg ctctgtccc cccgtggctc tcggcctage  
 301 tggggcccta cagacccccg gcgtaggtcg cgcaatttg gtaaggtcat cgatacc  
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LOCUS AF484979 345 bp RNA linear VRL 11-JUN-2002  
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 KEYWORDS .  
 SOURCE Hepatitis C virus  
 ORGANISM Hepatitis C virus  
 Viruses; ssRNA positive-strand viruses, no DNA stage; Flaviviridae; Hepacivirus.  
 REFERENCE 1 (bases 1 to 345)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M., Chinchai,T.and Poovorawan,Y.  
 TITLE Hepatitis C virus genotyping by RFLP and direct sequencing in Thailand  
 JOURNAL Unpublished  
 REFERENCE 2 (bases 1 to 345)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M., Chinchai,T.and Poovorawan,Y.  
 TITLE Direct Submission  
 JOURNAL Submitted (20-FEB-2002) Hepatitis Research Unit, Chulalongkorn University and Hospital, Rama4, Pratumwan, Bangkok 10330, Thailand  
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 121 acctcagaac ggtcccagcc cagaggtagg cgccagccca taccaaaggc gcgcccgcca  
 181 acgggccggt actgggggtca acccggttac ccctggcccc tgtacggaaa cgaggggttg  
 241 ggggtggcag gggggctcct gtccccccgc ggctctcgtc caaattgggg cccaatgac  
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LOCUS AF484980 345 bp RNA linear VRL 27-MAR-2002  
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 VERSION AF484980.1 GI:19744445  
 KEYWORDS .  
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 ORGANISM Hepatitis C virus  
 Viruses; ssRNA positive-strand viruses, no DNA stage; Flaviviridae; Hepacivirus.  
 REFERENCE 1 (bases 1 to 345)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M. and Poovorawan,Y.  
 TITLE Hepatitis C virus genotyping by RFLP and direct sequencing in Thailand  
 JOURNAL Unpublished  
 REFERENCE 2 (bases 1 to 345)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M. and Poovorawan,Y.  
 TITLE Direct Submission  
 JOURNAL Submitted (20-FEB-2002) Hepatitis Research Unit, Chulalongkorn University and Hospital, Rama4, Pratumwan, Bangkok 10330, Thailand  
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LOCUS AF484981 366 bp RNA linear VRL 11-JUN-2002  
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 Viruses; ssRNA positive-strand viruses, no DNA stage; Flaviviridae; Hepacivirus.  
 REFERENCE 1 (bases 1 to 366)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M., Chinchai,T.and Poovorawan,Y.  
 TITLE Hepatitis C virus genotyping by RFLP and direct sequencing in Thailand  
 JOURNAL Unpublished  
 REFERENCE 2 (bases 1 to 366)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M., Chinchai,T.and Poovorawan,Y.  
 TITLE Direct Submission  
 JOURNAL Submitted (20-FEB-2002) Hepatitis Research Unit, Chulalongkorn University and Hospital, Rama4, Pratumwan, Bangkok 10330, Thailand  
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 181 atccccaagg cgcgtcagag cgaggggccg tgctgggctc agcctgggca cccttggccc  
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LOCUS AF484982 366 bp RNA linear VRL 27-MAR-2002  
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 SOURCE Hepatitis C virus  
 ORGANISM Hepatitis C virus  
 Viruses; ssRNA positive-strand viruses, no DNA stage;  
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 REFERENCE 1 (bases 1 to 366)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M. and Poovorawan,Y.  
 TITLE Hepatitis C virus genotyping by RFLP and direct sequencing in Thailand  
 JOURNAL Unpublished  
 REFERENCE 2 (bases 1 to 366)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M. and Poovorawan,Y.  
 TITLE Direct Submission  
 JOURNAL Submitted (20-FEB-2002) Hepatitis Research Unit, Chulalongkorn University and Hospital, Rama4, Pratumwan, Bangkok 10330, Thailand  
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LOCUS AF484983 366 bp RNA linear VRL 11-JUN-2002  
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 ORGANISM Hepatitis C virus  
 Viruses; ssRNA positive-strand viruses, no DNA stage;  
 Flaviviridae; Hepacivirus.  
 REFERENCE 1 (bases 1 to 366)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M.,  
 Chinchai,T. and Poovorawan,Y.  
 TITLE Hepatitis C virus genotyping by RFLP and direct sequencing in  
 Thailand  
 JOURNAL Unpublished  
 REFERENCE 2 (bases 1 to 366)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M.,  
 Chinchai,T. and Poovorawan,Y.  
 TITLE Direct Submission  
 JOURNAL Submitted (20-FEB-2002) Hepatitis Research Unit, Chulalongkorn  
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 KEYWORDS .  
 SOURCE Hepatitis C virus  
 ORGANISM Hepatitis C virus  
 Viruses; ssRNA positive-strand viruses, no DNA stage; Flaviviridae; Hepacivirus.  
 REFERENCE 1 (bases 1 to 366)  
 AUTHORS Theamboonlers, A., Bedi, K., Scotraj, N., Sriponthong, M., Chinchai, T. and Poovorawan, Y.  
 TITLE Hepatitis C virus genotyping by RFLP and direct sequencing in Thailand  
 JOURNAL Unpublished  
 REFERENCE 2 (bases 1 to 366)  
 AUTHORS Theamboonlers, A., Bedi, K., Scotraj, N., Sriponthong, M., Chinchai, T. and Poovorawan, Y.  
 TITLE Direct Submission  
 JOURNAL Submitted (20-FEB-2002) Hepatitis Research Unit, Chulalongkorn University and Hospital, Rama4, Pratumwan, Bangkok 10330, Thailand  
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LOCUS AF484986 366 bp RNA linear VRL 27-MAR-2002  
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 SOURCE Hepatitis C virus  
 ORGANISM Hepatitis C virus  
 Viruses; ssRNA positive-strand viruses, no DNA stage; Flaviviridae; Hepacivirus.  
 REFERENCE 1 (bases 1 to 366)  
 AUTHORS Theamboonlers, A., Bedi, K., Scotraj, N., Sriponthong, M. and Poovorawan, Y.  
 TITLE Hepatitis C virus genotyping by RFLP and direct sequencing in Thailand  
 JOURNAL Unpublished  
 REFERENCE 2 (bases 1 to 366)  
 AUTHORS Theamboonlers, A., Bedi, K., Scotraj, N., Sriponthong, M. and Poovorawan, Y.  
 TITLE Direct Submission  
 JOURNAL Submitted (20-FEB-2002) Hepatitis Research Unit, Chulalongkorn University and Hospital, Rama 4, Pratumwan, Bangkok 10330, Thailand  
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 SOURCE Hepatitis C virus  
 ORGANISM Hepatitis C virus  
 Viruses; ssRNA positive-strand viruses, no DNA stage; Flaviviridae; Hepacivirus.  
 REFERENCE 1 (bases 1 to 366)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M., Chinchai,T.and Poovorawan,Y.  
 TITLE Hepatitis C virus genotyping by RFLP and direct sequencing in Thailand  
 JOURNAL Unpublished  
 REFERENCE 2 (bases 1 to 366)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M., Chinchai,T.and Poovorawan,Y.  
 TITLE Direct Submission  
 JOURNAL Submitted (20-FEB-2002) Hepatitis Research Unit, Chulalongkorn University and Hospital, Rama4, Pratumwan, Bangkok 10330, Thailand  
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 ORGANISM Hepatitis C virus  
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 Flaviviridae;Hepacivirus.  
 REFERENCE 1 (bases 1 to 366)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M.,  
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 TITLE Hepatitis C virus genotyping by RFLP and direct sequencing in  
 Thailand  
 JOURNAL Unpublished  
 REFERENCE 2 (bases 1 to 366)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M.,  
 Chinchai,T.and Poovorawan,Y.  
 TITLE Direct Submission  
 JOURNAL Submitted (20-FEB-2002) Hepatitis Research Unit, Chulalongkorn  
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 SOURCE Hepatitis C virus  
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 Viruses; ssRNA positive-strand viruses, no DNA stage; Flaviviridae; Hepacivirus.  
 REFERENCE 1 (bases 1 to 366)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M., Chinchai,T.and Poovorawan,Y.  
 TITLE Hepatitis C virus genotyping by RFLP and direct sequencing in Thailand  
 JOURNAL Unpublished  
 REFERENCE 2 (bases 1 to 366)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M., Chinchai,T.and Poovorawan,Y.  
 TITLE Direct Submission  
 JOURNAL Submitted (20-FEB-2002) Hepatitis Research Unit, Chulalongkorn University and Hospital, Rama4, Pratumwan, Bangkok 10330, Thailand  
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LOCUS AF484990 366 bp RNA linear VRL 27-MAR-2002  
 DEFINITION Hepatitis C virus strain bb152513a polyprotein gene, partial cds.  
 ACCESSION AF484990  
 VERSION AF484990.1 GI:19744465  
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 ORGANISM Hepatitis C virus  
 Viruses; ssRNA positive-strand viruses, no DNA stage; Flaviviridae; Hepacivirus.  
 REFERENCE 1 (bases 1 to 366)  
 AUTHORS Theamboonlers, A., Bedi, K., Scotraj, N., Sriponthong, M. and Poovorawan, Y.  
 TITLE Hepatitis C virus genotyping by RFLP and direct sequencing in Thailand  
 JOURNAL Unpublished  
 REFERENCE 2 (bases 1 to 366)  
 AUTHORS Theamboonlers, A., Bedi, K., Scotraj, N., Sriponthong, M. and Poovorawan, Y.  
 TITLE Direct Submission  
 JOURNAL Submitted (20-FEB-2002) Hepatitis Research Unit, Chulalongkorn University and Hospital, Rama4, Pratumwan, Bangkok 10330, Thailand  
 FEATURES Location/Qualifiers  
 source 1..366  
 /organism="Hepatitis C virus"  
 /virion  
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 /strain="bb152513a"  
 /db\_xref="taxon:11103"  
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 /note="core region"  
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 /db\_xref="GI:19744466"  
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 WGPNDPRRRSRNLGKVIDTL"  
 BASE COUNT 76 a 119 c 110 g 61 t  
 ORIGIN  
 1 cctaaaccac aaagaaaaac caaaagaaac accatccgtc gccacacagga cgtcaagttc  
 61 cgggtggcg gacagatcgt tggaggagta tacgtgctgc cgcgaggggg cccacgcttg  
 121 ggtgtgcgcg cgacgcgtaa aacttctgaa cggtcacagc ctgcgagcgc acgacagcct  
 181 atccccaagg cgcgtcagag cgaaggccgg tcctgttctc agccgggta cccttgccc  
 241 ctctatggta acgagggctg cgggtgggca ggggtggctc tgtcccaacg cggctcccgt  
 301 ccatcttggg gcccaaacga ccccggcgg aggtcccgca atttgggtaa agtcatcgat  
 361 accctt

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LOCUS AY089747 357 bp RNA linear VRL 11-JUN-2002  
 DEFINITION Hepatitis C virus strain 091521b polyprotein gene, partial cds.  
 ACCESSION AY089747  
 VERSION AY089747.1 GI:20146953  
 KEYWORDS .  
 SOURCE Hepatitis C virus  
 ORGANISM Hepatitis C virus  
 Viruses; ssRNA positive-strand viruses, no DNA stage;  
 Flaviviridae;Hepacivirus.  
 REFERENCE 1 (bases 1 to 357)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M.,  
 Chinchai,T.and Poovorawan,Y.  
 TITLE Hepatitis C virus genotyping by RFLP and direct sequencing in  
 Thailand  
 JOURNAL Unpublished  
 REFERENCE 2 (bases 1 to 357)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M.,  
 Chinchai,T.and Poovorawan,Y.  
 TITLE Direct Submission  
 JOURNAL Submitted (13-MAR-2002) Hepatitis Research Unit, Chulalongkorn  
 University and Hospital, Rama4, Pratumwan, Bangkok 10330,  
 Thailand  
 FEATURES Location/Qualifiers  
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 /organism="Hepatitis C virus"  
 /proviral  
 /mol\_type="genomic RNA"  
 /strain="091521b"  
 /db\_xref="taxon:11103"  
 /note="utilized in HCV genotyping"  
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 /note="core region"  
 /codon\_start=1  
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 /protein\_id="AAM09907.1"  
 /db\_xref="GI:20146954"  
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 PTDPRRRSRNLGKVIDT"  
 BASE COUNT 72 a 120 c 110 g 55 t  
 ORIGIN  
 1 cctcatagaa aaaccaccg taacaccaac cgccgccac aggacgtcaa gttcccgggc  
 61 ggtggtcaga tcgttggtg agtttacctg ttgccgcgca gggcccccag gttgggtgcg  
 121 cgcgcgacta ggaagacttc cgagcggaca caacctcgtg gaaggcgaca acctatcccc  
 181 aaggctcgcc aaccggagg caacgcctgg gcaggcccc gagtcacca gccctctat  
 241 ggcaatgagg gcatggggtg ggcaggatgg ctcctgtcac cccgcggctc cggcctaata  
 301 tggggcccca cagaccccc gcgtaggtcg cgtaatttgg gtaaggtcat cgataacc  
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LOCUS AY089748 357 bp RNA linear VRL 11-JUN-2002  
 DEFINITION Hepatitis C virus strain 068041b polyprotein gene, partial cds.  
 ACCESSION AY089748  
 VERSION AY089748.1 GI:20146955  
 KEYWORDS .  
 SOURCE Hepatitis C virus  
 ORGANISM Hepatitis C virus  
 Viruses; ssRNA positive-strand viruses, no DNA stage;  
 Flaviviridae;Hepacivirus.  
 REFERENCE 1 (bases 1 to 357)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M.,  
 Chinchai,T.and Poovorawan,Y.  
 TITLE Hepatitis C virus genotyping by RFLP and direct sequencing in  
 Thailand  
 JOURNAL Unpublished  
 REFERENCE 2 (bases 1 to 357)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M.,  
 Chinchai,T.and Poovorawan,Y.  
 TITLE Direct Submission  
 JOURNAL Submitted (13-MAR-2002) Hepatitis Research Unit, Chulalongkorn  
 University and Hospital, Rama4, Pratumwan, Bangkok 10330,  
 Thailand  
 FEATURES Location/Qualifiers  
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 /organism="Hepatitis C virus"  
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 /strain="068041b"  
 /db\_xref="taxon:11103"  
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 PTDPRRRSRNLGKVIDT"  
 BASE COUNT 70 a 112 c 113 g 62 t  
 ORIGIN  
 1 cctcatagaa aaaccaaacg taacaccaac cgtcgcccac aggacgtaa gttcccgggc  
 61 ggtggtcaga tcgttggtgg agtttacctg ttgccgcgca ggggccccag gttgggtgtg  
 121 cgcgcgacta ggaagacttc cgagcggtcg caacctcgtg gaaggcgaca acctatcccc  
 181 aaggctcgcc aaccgaggg cagggctctg gctcagccc gatacccctg gccctctat  
 241 ggcaatgagg gcatgggggtg ggcaggatg ctctgtcac cccgcggtc cggcctaata  
 301 tggggcccca cagacccccg gcgtaggtcg cgtaatttgg gtaaggatc cgatacc  
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LOCUS AY089749 354 bp RNA linear VRL 11-JUN-2002  
 DEFINITION Hepatitis C virus strain 098961b polyprotein gene, partial cds.  
 ACCESSION AY089749  
 VERSION AY089749.1 GI:20146957  
 KEYWORDS .  
 SOURCE Hepatitis C virus  
 ORGANISM Hepatitis C virus  
 Viruses; ssRNA positive-strand viruses, no DNA stage;  
 Flaviviridae;Hepacivirus.  
 REFERENCE 1 (bases 1 to 354)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M.,  
 Chinchai,T.and Poovorawan,Y.  
 TITLE Hepatitis C virus genotyping by RFLP and direct sequencing in  
 Thailand  
 JOURNAL Unpublished  
 REFERENCE 2 (bases 1 to 354)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M.,  
 Chinchai,T.and Poovorawan,Y.  
 TITLE Direct Submission  
 JOURNAL Submitted (13-MAR-2002) Hepatitis Research Unit, Chulalongkorn  
 University and Hospital, Rama4, Pratumwan, Bangkok 10330,  
 Thailand  
 FEATURES Location/Qualifiers  
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 /proviral  
 /mol\_type="genomic RNA"  
 /strain="098961b"  
 /db\_xref="taxon:11103"  
 /note="utilized in HCV genotyping"  
 CDS <1..>354  
 /note="core region"  
 /codon\_start=1  
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 TSERSQPRGRRQPIPKARQPEGRAWAQPGYPWPLYGNEGMGWAGWLLSPRGSRPSWGP  
 NDPRRRSRNLGKVIDT"  
 BASE COUNT 69 a 112 c 111 g 62 t  
 ORIGIN  
 1 caaagaaaaa ccaaacgtaa caccaaccgt cgccacagg acgtcaagtt cccgggcggt  
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 121 gcgactagga agacttccga gcggctgcaa cctcgtggaa ggcgacaacc tatcccccaag  
 181 gctcgccagc ccgagggcag ggcctgggct cagcccggtt acccttggcc cctctatggc  
 241 aatgagggca tgggggtgggc aggatggctc ctgtccccc gtggctctcg gcctagttgg  
 301 ggccccaatg acccccggcg taggtcgcgt aatttgggta aggtcatcga tacc  
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LOCUS AY089750 354 bp RNA linear VRL 11-JUN-2002  
 DEFINITION Hepatitis C virus strain 952631b polyprotein gene, partial cds.  
 ACCESSION AY089750  
 VERSION AY089750.1 GI:20146959  
 KEYWORDS .  
 SOURCE Hepatitis C virus  
 ORGANISM Hepatitis C virus  
 Viruses; ssRNA positive-strand viruses, no DNA stage;  
 Flaviviridae;Hepacivirus.  
 REFERENCE 1 (bases 1 to 354)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M.,  
 Chinchai,T.and Poovorawan,Y.  
 TITLE Hepatitis C virus genotyping by RFLP and direct sequencing in  
 Thailand  
 JOURNAL Unpublished  
 REFERENCE 2 (bases 1 to 354)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M.,  
 Chinchai,T.and Poovorawan,Y.  
 TITLE Direct Submission  
 JOURNAL Submitted (13-MAR-2002) Hepatitis Research Unit, Chulalongkorn  
 University and Hospital, Rama4, Pratumwan, Bangkok 10330,  
 Thailand  
 FEATURES Location/Qualifiers  
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 NDPRRRSRNLGKVIDT"  
 BASE COUNT 66 a 112 c 116 g 60 t  
 ORIGIN  
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 121 gcgactagga agacttccga gcggtcgcaa cctcgtggaa ggcgacaacc tatccccaag  
 181 gctcgccagc ccgagggcag ggcttgggct cagccccgggt acccttgcc cctctatggc  
 241 aatgagggca tgggggtggc aggatggctc ctgtcccccc gtggtctctg gcctagtgtg  
 301 ggcccaatg acccccggcg taggtcgcgt aatttgggta aggtcatcga tacc  
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LOCUS AY089751 354 bp RNA linear VRL 11-JUN-2002  
 DEFINITION Hepatitis C virus strain 080351b polyprotein gene, partial cds.  
 ACCESSION AY089751  
 VERSION AY089751.1 GI:20146961  
 KEYWORDS .  
 SOURCE Hepatitis C virus  
 ORGANISM Hepatitis C virus  
 Viruses; ssRNA positive-strand viruses, no DNA stage;  
 Flaviviridae;Hepacivirus.  
 REFERENCE 1 (bases 1 to 354)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M.,  
 Chinchai,T.and Poovorawan,Y.  
 TITLE Hepatitis C virus genotyping by RFLP and direct sequencing in  
 Thailand  
 JOURNAL Unpublished  
 REFERENCE 2 (bases 1 to 354)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M.,  
 Chinchai,T.and Poovorawan,Y.  
 TITLE Direct Submission  
 JOURNAL Submitted (13-MAR-2002) Hepatitis Research Unit, Chulalongkorn  
 University and Hospital, Rama4, Pratumwan, Bangkok 10330,  
 Thailand  
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 /db\_xref="taxon:11103"  
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 TDPRRRSRNLGKVIDT"  
 BASE COUNT 70 a 111 c 114 g 59 t  
 ORIGIN  
 1 caaagaaaaa ccaaacgtaa caccaaccgt cgccacaggg acgtcaagtt cccggggcgt  
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 121 gcgactagga agacttccga gcggctgcaa cctcgtggaa ggcgacaacc tatccccaag  
 181 gctcgccaac ccgagggtag ggtctgggct cagcccggat acccctggcc cctctatggc  
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 301 ggccccacag acccccggcg caggtcgcgt aatttgggta aggtcatcga tacc  
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LOCUS AY089754 345 bp RNA linear VRL 11-JUN-2002  
 DEFINITION Hepatitis C virus strain 22346a polyprotein gene, partial cds.  
 ACCESSION AY089754  
 VERSION AY089754.1 GI:20146967  
 KEYWORDS .  
 SOURCE Hepatitis C virus  
 ORGANISM Hepatitis C virus  
 Viruses; ssRNA positive-strand viruses, no DNA stage;  
 Flaviviridae;Hepacivirus.

REFERENCE 1 (bases 1 to 345)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M.,  
 Chinchai,T.and Poovorawan,Y.  
 TITLE Hepatitis C virus genotyping by RFLP and direct sequencing in  
 Thailand  
 JOURNAL Unpublished

REFERENCE 2 (bases 1 to 345)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M.,  
 Chinchai,T.and Poovorawan,Y.  
 TITLE Direct Submission  
 JOURNAL Submitted (13-MAR-2002) Hepatitis Research Unit, Chulalongkorn  
 University and Hospital, Rama4, Pratumwan, Bangkok 10330,  
 Thailand

FEATURES Location/Qualifiers  
 source 1..345  
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 RRSRNLGKVIDTL"

BASE COUNT 68 a 105 c 109 g 63 t  
 ORIGIN  
 1 aaaagaaaca ccaaccgtcg tccaatggat gttaagttcc cgggcggcgg tcagatcggt  
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 121 acttctgaac gatcccagcc cagaggcagg cgtcagocca taccaaaggc gcgccagcca  
 181 acgggccggc actgggctca gcctggttac ccttggcccc tttatgggaa tgagggctgc  
 241 ggatgggcgg gatggctcct gtccccccgc ggttcccgtc ctaattgggg ccccaatgac  
 301 ccccgcgac gatcgcgcaa tttgggtaaa gtcatcgata cccta

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LOCUS AY089755 345 bp RNA linear VRL 11-JUN-2002  
 DEFINITION Hepatitis C virus strain 706466a polyprotein gene, partial cds.  
 ACCESSION AY089755  
 VERSION AY089755.1 GI:20146969  
 KEYWORDS .  
 SOURCE Hepatitis C virus  
 ORGANISM Hepatitis C virus  
 Viruses; ssRNA positive-strand viruses, no DNA stage;  
 Flaviviridae;Hepacivirus.  
 REFERENCE 1 (bases 1 to 345)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M.,  
 Chinchai,T.and Poovorawan,Y.  
 TITLE Hepatitis C virus genotyping by RFLP and direct sequencing in  
 Thailand  
 JOURNAL Unpublished  
 REFERENCE 2 (bases 1 to 345)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M.,  
 Chinchai,T.and Poovorawan,Y.  
 TITLE Direct Submission  
 JOURNAL Submitted (13-MAR-2002) Hepatitis Research Unit, Chulalongkorn  
 University and Hospital, Rama4, Pratumwan, Bangkok 10330,  
 Thailand  
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 CDS <1..>345  
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 RRSRNLGKVIDTL"  
 BASE COUNT 66 a 112 c 106 g 61 t  
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 121 acttctgaac gatcccagcc cagaggcagg cgtcagccca taccaaaggc gcgccagcca  
 181 acgggcccggc actgggctca gcttggttac ccttggcccc tttatgggaa tgagggtgc  
 241 ggatggccag gttggctcct gtccccccgc ggctcccggc cacaactggg cccaatgac  
 301 ccccggcgtc gatcgcgcaa tttgggtaaa gtcatcgata cccta  
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LOCUS AY089756 345 bp RNA linear VRL 11-JUN-2002  
 DEFINITION Hepatitis C virus strain 928556a polyprotein gene, partial cds.  
 ACCESSION AY089756  
 VERSION AY089756.1 GI:20146971  
 KEYWORDS .  
 SOURCE Hepatitis C virus  
 ORGANISM Hepatitis C virus  
 Viruses; ssRNA positive-strand viruses, no DNA stage;  
 Flaviviridae; Hepacivirus.  
 REFERENCE 1 (bases 1 to 345)  
 AUTHORS Theamboonlers, A., Bedi, K., Scotraj, N., Sriponthong, M.,  
 Chinchai, T. and Poovorawan, Y.  
 TITLE Hepatitis C virus genotyping by RFLP and direct sequencing in  
 Thailand  
 JOURNAL Unpublished  
 REFERENCE 2 (bases 1 to 345)  
 AUTHORS Theamboonlers, A., Bedi, K., Scotraj, N., Sriponthong, M.,  
 Chinchai, T. and Poovorawan, Y.  
 TITLE Direct Submission  
 JOURNAL Submitted (13-MAR-2002) Hepatitis Research Unit, Chulalongkorn  
 University and Hospital, Rama4, Pratumwan, Bangkok 10330,  
 Thailand  
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 QVSRNLGKVIDTL"  
 BASE COUNT 72 a 103 c 110 g 60 t  
 ORIGIN  
 1 aaaagaaaca ctaaccgtcg ccctatggac gtcaagttcc cgggcggcgg ccagatcgtt  
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 121 acctcagaac ggtctcagcc cagaggtagg cgccagccca taccaaaggc gcgccagcca  
 181 acgggccgta gctggggtca acccggtac ccttggcccc tgtatggaaa tgagggttgc  
 241 gggtagggcag gatggctcct gtccccccgc ggttctcgtc caagttgggg cccaaatgac  
 301 ccccggaacg tatcgcgcaa tttgggtaaa gtcacgata cccta  
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LOCUS AY089757 345 bp RNA linear VRL 11-JUN-2002  
 DEFINITION Hepatitis C virus strain 054586a polyprotein gene, partial cds.  
 ACCESSION AY089757  
 VERSION AY089757.1 GI:20146973  
 KEYWORDS .  
 SOURCE Hepatitis C virus  
 ORGANISM Hepatitis C virus  
 Viruses; ssRNA positive-strand viruses, no DNA stage;  
 Flaviviridae;Hepacivirus.  
 REFERENCE 1 (bases 1 to 345)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M.,  
 Chinchai,T.and Poovorawan,Y.  
 TITLE Hepatitis C virus genotyping by RFLP and direct sequencing in  
 Thailand  
 JOURNAL Unpublished  
 REFERENCE 2 (bases 1 to 345)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M.,  
 Chinchai,T.and Poovorawan,Y.  
 TITLE Direct Submission  
 JOURNAL Submitted (13-MAR-2002) Hepatitis Research Unit, Chulalongkorn  
 University and Hospital, Rama4, Pratumwan, Bangkok 10330,  
 Thailand  
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 /organism="Hepatitis C virus"  
 /proviral  
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 /strain="054586a"  
 /db\_xref="taxon:11103"  
 /note="utilized in HCV genotyping"  
 CDS <1..>345  
 /note="core region"  
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 SQPRGRRQPIPKARQPTGRHWAQPGYPWPLYGNEGCGWAGWLLSPRGSRPNWGPNDPR  
 RRSRNLGKVIDTL"  
 BASE COUNT 67 a 106 c 108 g 64 t  
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 1 aaaagcaaca ccaaccgtcg tccaatggat gttaagttcc cggcgggcgg tcagatcgtt  
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 121 acttctgaac gatcccagcc cagaggcagg cgtcagccca taccaaaggc gcgccagcca  
 181 acgggcccgc actgggctca gcctggttac ccttggcccc tttatgggaa tgagggtgc  
 241 ggatggggcgg gatggctcct gtctccccgc ggttccccgc ctaattgggg ccccaatgac  
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LOCUS AY089758 345 bp RNA linear VRL 11-JUN-2002  
 DEFINITION Hepatitis C virus strain 087956a polyprotein gene, partial cds.  
 ACCESSION AY089758  
 VERSION AY089758.1 GI:20146975  
 KEYWORDS .  
 SOURCE Hepatitis C virus  
 ORGANISM Hepatitis C virus  
 Viruses; ssRNA positive-strand viruses, no DNA stage;  
 Flaviviridae;Hepacivirus.  
 REFERENCE 1 (bases 1 to 345)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M.,  
 Chinchai,T.and Poovorawan,Y.  
 TITLE Hepatitis C virus genotyping by RFLP and direct sequencing in  
 Thailand  
 JOURNAL Unpublished  
 REFERENCE 2 (bases 1 to 345)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M.,  
 Chinchai,T.and Poovorawan,Y.  
 TITLE Direct Submission  
 JOURNAL Submitted (13-MAR-2002) Hepatitis Research Unit, Chulalongkorn  
 University and Hospital, Rama4, Pratumwan, Bangkok 10330,  
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 121 acctcagaac ggtcccagcc cagaggtagg cgccagccca taccaaaggg cgcgagcca  
 181 acgggccgta gctggggtca acccggtac ccttgacctc tgtacgaaa cgagggttgc  
 241 ggtgggag gatggtcct gtccccccgc ggttcccgtc cgaaatgggg cccaaatgac  
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LOCUS AY089759 345 bp RNA linear VRL 11-JUN-2002  
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 SOURCE Hepatitis C virus  
 ORGANISM Hepatitis C virus  
 Viruses; ssRNA positive-strand viruses, no DNA stage;  
 Flaviviridae;Hepacivirus.  
 REFERENCE 1 (bases 1 to 345)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M.,  
 Chinchai,T.and Poovorawan,Y.  
 TITLE Hepatitis C virus genotyping by RFLP and direct sequencing in  
 Thailand  
 JOURNAL Unpublished  
 REFERENCE 2 (bases 1 to 345)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M.,  
 Chinchai,T.and Poovorawan,Y.  
 TITLE Direct Submission  
 JOURNAL Submitted (13-MAR-2002) Hepatitis Research Unit, Chulalongkorn  
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 121 acttctgaac gatcccagcc cagaggcagg cgtcagccca taccaaggtc cgcgcagcca  
 181 acgggccggc actgggctca gcttggttac ccttggtccc tttatgggaa tgagggtgc  
 241 ggatgggcgg gatggctcct gtctccccgc ggttccccgc ctaattgggg cccaatgac  
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LOCUS AY089760 363 bp RNA linear VRL 11-JUN-2002  
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 KEYWORDS .  
 SOURCE Hepatitis C virus  
 ORGANISM Hepatitis C virus  
 Viruses; ssRNA positive-strand viruses, no DNA stage;  
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 REFERENCE 1 (bases 1 to 363)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M.,  
 Chinchai,T.and Poovorawan,Y.  
 TITLE Hepatitis C virus genotyping by RFLP and direct sequencing in  
 Thailand  
 JOURNAL Unpublished  
 REFERENCE 2 (bases 1 to 363)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M.,  
 Chinchai,T.and Poovorawan,Y.  
 TITLE Direct Submission  
 JOURNAL Submitted (13-MAR-2002) Hepatitis Research Unit, Chulalongkorn  
 University and Hospital, Rama4, Pratumwan, Bangkok 10330,  
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 121 cgcgcgacga ggaagacttc cgagcggctg caacctcgag gtagacgtca gcctatcccc  
 181 aaggcacgctc ggtccgaggg caggacctgg gctcagcccg ggtacccttg gccctctat  
 241 ggcaatgagg gctgcgggtg ggcgggatgg ctctgtctc cccgtggctc tcggcctagc  
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LOCUS AY089761 363 bp RNA linear VRL 11-JUN-2002  
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 VERSION AY089761.1 GI:20146981  
 KEYWORDS .  
 SOURCE Hepatitis C virus  
 ORGANISM Hepatitis C virus  
 Viruses; ssRNA positive-strand viruses, no DNA stage;  
 Flaviviridae;Hepacivirus.  
 REFERENCE 1 (bases 1 to 363)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M.,  
 Chinchai,T.and Poovorawan,Y.  
 TITLE Hepatitis C virus genotyping by RFLP and direct sequencing in  
 Thailand  
 JOURNAL Unpublished  
 REFERENCE 2 (bases 1 to 363)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M.,  
 Chinchai,T.and Poovorawan,Y.  
 TITLE Direct Submission  
 JOURNAL Submitted (13-MAR-2002) Hepatitis Research Unit, Chulalongkorn  
 University and Hospital, Rama4, Pratumwan, Bangkok 10330,  
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 301 tggggccctt cagacccccg gcgtaggtcg cgcaatttgg gtaaggtcat cgatacctta  
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LOCUS AY089762 363 bp RNA linear VRL 13-APR-2002  
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 KEYWORDS .  
 SOURCE Hepatitis C virus  
 ORGANISM Hepatitis C virus  
 Viruses; ssRNA positive-strand viruses, no DNA stage;  
 Flaviviridae;Hepacivirus.  
 REFERENCE 1 (bases 1 to 363)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M. and  
 Poovorawan,Y.  
 TITLE Hepatitis C virus genotyping by RFLP and direct sequencing in  
 Thailand  
 JOURNAL Unpublished  
 REFERENCE 2 (bases 1 to 363)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M. and  
 Poovorawan,Y.  
 TITLE Direct Submission  
 JOURNAL Submitted (13-MAR-2002) Hepatitis Research Unit, Chulalongkorn  
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 181 aaggcgcgtc ggcccgaggg caggacctgg gctcagcccg ggtacccttg gccctctat  
 241 ggcaatgagg gctgcgggtg ggcgggatgg ctctgtccc cccgtggctc tcggcctagc  
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LOCUS AY089763 345 bp RNA linear VRL 11-JUN-2002  
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 ACCESSION AY089763  
 VERSION AY089763.1 GI:20146985  
 KEYWORDS .  
 SOURCE Hepatitis C virus  
 ORGANISM Hepatitis C virus  
 Viruses; ssRNA positive-strand viruses, no DNA stage;  
 Flaviviridae;Hepacivirus.  
 REFERENCE 1 (bases 1 to 345)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M.,  
 Chinchai,T.and Poovorawan,Y.  
 TITLE Hepatitis C virus genotyping by RFLP and direct sequencing in  
 Thailand  
 JOURNAL Unpublished  
 REFERENCE 2 (bases 1 to 345)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M.,  
 Chinchai,T.and Poovorawan,Y.  
 TITLE Direct Submission  
 JOURNAL Submitted (13-MAR-2002) Hepatitis Research Unit, Chulalongkorn  
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 BASE COUNT 67 a 105 c 108 g 65 t  
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LOCUS AY089765 363 bp RNA linear VRL 11-JUN-2002  
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 SOURCE Hepatitis C virus  
 ORGANISM Hepatitis C virus  
 Viruses; ssRNA positive-strand viruses, no DNA stage;  
 Flaviviridae; Hepacivirus.  
 REFERENCE 1 (bases 1 to 363)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M.,  
 Chinchai,T.and Poovorawan,Y.  
 TITLE Hepatitis C virus genotyping by RFLP and direct sequencing in  
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 JOURNAL Unpublished  
 REFERENCE 2 (bases 1 to 363)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M.,  
 Chinchai,T.and Poovorawan,Y.  
 TITLE Direct Submission  
 JOURNAL Submitted (13-MAR-2002) Hepatitis Research Unit, Chulalongkorn  
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 KEYWORDS .  
 SOURCE Hepatitis C virus  
 ORGANISM Hepatitis C virus  
 Viruses; ssRNA positive-strand viruses, no DNA stage;  
 Flaviviridae;Hepacivirus.  
 REFERENCE 1 (bases 1 to 342)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M.,  
 Chinchai,T.and Poovorawan,Y.  
 TITLE Hepatitis C virus genotyping by RFLP and direct sequencing in  
 Thailand  
 JOURNAL Unpublished  
 REFERENCE 2 (bases 1 to 342)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M.,  
 Chinchai,T.and Poovorawan,Y.  
 TITLE Direct Submission  
 JOURNAL Submitted (13-MAR-2002) Hepatitis Research Unit, Chulalongkorn  
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LOCUS AY089773 342 bp RNA linear VRL 13-APR-2002  
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 VERSION AY089773.1 GI:20147005  
 KEYWORDS .  
 SOURCE Hepatitis C virus  
 ORGANISM Hepatitis C virus  
 Viruses; ssRNA positive-strand viruses, no DNA stage; Flaviviridae; Hepacivirus.  
 REFERENCE 1 (bases 1 to 342)  
 AUTHORS Theamboonlers, A., Bedi, K., Scotraj, N., Sriponthong, M. and Poovorawan, Y.  
 TITLE Hepatitis C virus genotyping by RFLP and direct sequencing in Thailand  
 JOURNAL Unpublished  
 REFERENCE 2 (bases 1 to 342)  
 AUTHORS Theamboonlers, A., Bedi, K., Scotraj, N., Sriponthong, M. and Poovorawan, Y.  
 TITLE Direct Submission  
 JOURNAL Submitted (13-MAR-2002) Hepatitis Research Unit, Chulalongkorn University and Hospital, Rama4, Pratumwan, Bangkok 10330, Thailand  
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LOCUS      AY089774          342 bp    RNA      linear   VRL 11-JUN-2002
DEFINITION Hepatitis C virus strain 087203a polyprotein gene, partial cds.
ACCESSION  AY089774
VERSION    AY089774.1  GI:20147007
KEYWORDS   .
SOURCE     Hepatitis C virus
  ORGANISM Hepatitis C virus
            Viruses; ssRNA positive-strand viruses, no DNA stage;
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REFERENCE  1 (bases 1 to 342)
  AUTHORS  Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M.,
            Chinchai,T.and Poovorawan,Y.
  TITLE    Hepatitis C virus genotyping by RFLP and direct sequencing in
            Thailand
  JOURNAL  Unpublished
REFERENCE  2 (bases 1 to 342)
  AUTHORS  Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M.,
            Chinchai,T.and Poovorawan,Y.
  TITLE    Direct Submission
  JOURNAL  Submitted (13-MAR-2002) Hepatitis Research Unit, Chulalongkorn
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LOCUS AY089775 342 bp RNA linear VRL 11-JUN-2002  
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 ACCESSION AY089775  
 VERSION AY089775.1 GI:20147009  
 KEYWORDS .  
 SOURCE Hepatitis C virus  
 ORGANISM Hepatitis C virus  
 Viruses; ssRNA positive-strand viruses, no DNA stage;  
 Flaviviridae;Hepacivirus.  
 REFERENCE 1 (bases 1 to 342)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M.,  
 Chinchai,T.and Poovorawan,Y.  
 TITLE Hepatitis C virus genotyping by RFLP and direct sequencing in  
 Thailand  
 JOURNAL Unpublished  
 REFERENCE 2 (bases 1 to 342)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M.,  
 Chinchai,T.and Poovorawan,Y.  
 TITLE Direct Submission  
 JOURNAL Submitted (13-MAR-2002) Hepatitis Research Unit, Chulalongkorn  
 University and Hospital, Rama4, Pratumwan, Bangkok 10330,  
 Thailand  
 FEATURES Location/Qualifiers  
 source 1..342  
 /organism="Hepatitis C virus"  
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 181 atccccaagg cacgtcagag cgaaggccgg tcctgggccc agcctgggta cccttgcccc  
 241 ctctatggta acgagggctg cgggtgggca ggggtggctcc tgtccccacg cggtcccgt  
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LOCUS AY089776 342 bp RNA linear VRL 13-APR-2002

DEFINITION Hepatitis C virus strain 152013a polyprotein gene, partial cds.

ACCESSION AY089776

VERSION AY089776.1 GI:20147011

KEYWORDS .

SOURCE Hepatitis C virus

ORGANISM Hepatitis C virus  
Viruses; ssRNA positive-strand viruses, no DNA stage; Flaviviridae; Hepacivirus.

REFERENCE 1 (bases 1 to 342)

AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M. and Poovorawan,Y.

TITLE Hepatitis C virus genotyping by RFLP and direct sequencing in Thailand

JOURNAL Unpublished

REFERENCE 2 (bases 1 to 342)

AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M. and Poovorawan,Y.

TITLE Direct Submission

JOURNAL Submitted (13-MAR-2002) Hepatitis Research Unit, Chulalongkorn University and Hospital, Rama4, Pratumwan, Bangkok 10330, Thailand

FEATURES Location/Qualifiers

source 1..342  
/organism="Hepatitis C virus"  
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/mol\_type="genomic RNA"  
/strain="152013a"  
/db\_xref="taxon:11103"  
/note="utilized in HCV genotyping"

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WGPNDPRRRSRN"

BASE COUNT 67 a 110 c 112 g 53 t

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121 ggtgtgctcg cgacgcgtaa aacttcagag cggtcacagc ctgcgcgacg gcgacagcct  
181 atccccaagg cgcgtcagag cgaaggccg tcttgggctc aaccgggta cccttgccc  
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301 ccattcttggg gcccaaatga cccccgcgag aggtccccga at

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LOCUS AY089777 366 bp RNA linear VRL 11-JUN-2002  
 DEFINITION Hepatitis C virus strain 925973a polyprotein gene, partial cds.  
 ACCESSION AY089777  
 VERSION AY089777.1 GI:20147013  
 KEYWORDS .  
 SOURCE Hepatitis C virus  
 ORGANISM Hepatitis C virus  
 Viruses; ssRNA positive-strand viruses, no DNA stage;  
 Flaviviridae;Hepacivirus.  
 REFERENCE 1 (bases 1 to 366)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M.,  
 Chinchai,T.and Poovorawan,Y.  
 TITLE Hepatitis C virus genotyping by RFLP and direct sequencing in  
 Thailand  
 JOURNAL Unpublished  
 REFERENCE 2 (bases 1 to 366)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M.,  
 Chinchai,T.and Poovorawan,Y.  
 TITLE Direct Submission  
 JOURNAL Submitted (13-MAR-2002) Hepatitis Research Unit, Chulalongkorn  
 University and Hospital, Rama4, Pratumwan, Bangkok 10330,  
 Thailand  
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 WGPNDPRRRSRNLGKVIDTL"  
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 181 atccccaagg cgcgctcagag cgaaggccgg tcttgggctc agcccgggta cccttggcc  
 241 ctctatggta acgagggctg cgggtgggca ggggtggctc tgtccccacg cggctcccgt  
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 361 accctt  
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LOCUS AY089778 366 bp RNA linear VRL 11-JUN-2002  
 DEFINITION Hepatitis C virus strain 078933a polyprotein gene, partial cds.  
 ACCESSION AY089778  
 VERSION AY089778.1 GI:20147015  
 KEYWORDS .  
 SOURCE Hepatitis C virus  
 ORGANISM Hepatitis C virus  
 Viruses; ssRNA positive-strand viruses, no DNA stage;  
 Flaviviridae;Hepacivirus.  
 REFERENCE 1 (bases 1 to 366)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M.,  
 Chinchai,T.and Poovorawan,Y.  
 TITLE Hepatitis C virus genotyping by RFLP and direct sequencing in  
 Thailand  
 JOURNAL Unpublished  
 REFERENCE 2 (bases 1 to 366)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M.,  
 Chinchai,T.and Poovorawan,Y.  
 TITLE Direct Submission  
 JOURNAL Submitted (13-MAR-2002) Hepatitis Research Unit, Chulalongkorn  
 University and Hospital, Rama4, Pratumwan, Bangkok 10330,  
 Thailand  
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 WGPNDPRRRSRNLGKVIDTL"  
 BASE COUNT 79 a 120 c 107 g 60 t  
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 241 ctctatggta acgagggctg cgggtgcgca ggctggctcc tgtcccaca cggctcccgt  
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 361 accctt

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LOCUS AY089779 366 bp RNA linear VRL 11-JUN-2002  
 DEFINITION Hepatitis C virus strain 971973a polyprotein gene, partial cds.  
 ACCESSION AY089779  
 VERSION AY089779.1 GI:20147017  
 KEYWORDS .  
 SOURCE Hepatitis C virus  
 ORGANISM Hepatitis C virus  
 Viruses; ssRNA positive-strand viruses, no DNA stage;  
 Flaviviridae;Hepacivirus.  
 REFERENCE 1 (bases 1 to 366)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M.,  
 Chinchai,T.and Poovorawan,Y.  
 TITLE Hepatitis C virus genotyping by RFLP and direct sequencing in  
 Thailand  
 JOURNAL Unpublished  
 REFERENCE 2 (bases 1 to 366)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M.,  
 Chinchai,T.and Poovorawan,Y.  
 TITLE Direct Submission  
 JOURNAL Submitted (13-MAR-2002) Hepatitis Research Unit, Chulalongkorn  
 University and Hospital, Rama4, Pratumwan, Bangkok 10330,  
 Thailand  
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 361 accctt  
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LOCUS AY089780 366 bp RNA linear VRL 13-APR-2002  
 DEFINITION Hepatitis C virus strain 114453a polyprotein gene, partial cds.  
 ACCESSION AY089780  
 VERSION AY089780.1 GI:20147019  
 KEYWORDS .  
 SOURCE Hepatitis C virus  
 ORGANISM Hepatitis C virus  
 Viruses; ssRNA positive-strand viruses, no DNA stage; Flaviviridae; Hepacivirus.  
 REFERENCE 1 (bases 1 to 366)  
 AUTHORS Theamboonlers, A., Bedi, K., Scotraj, N., Sriponthong, M. and Poovorawan, Y.  
 TITLE Hepatitis C virus genotyping by RFLP and direct sequencing in Thailand  
 JOURNAL Unpublished  
 REFERENCE 2 (bases 1 to 366)  
 AUTHORS Theamboonlers, A., Bedi, K., Scotraj, N., Sriponthong, M. and Poovorawan, Y.  
 TITLE Direct Submission  
 JOURNAL Submitted (13-MAR-2002) Hepatitis Research Unit, Chulalongkorn University and Hospital, Rama4, Pratumwan, Bangkok 10330, Thailand  
 FEATURES Location/Qualifiers  
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 WGNDRRRSRNLGKVIDTL"  
 BASE COUNT 77 a 115 c 112 g 62 t  
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 361 accctt

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LOCUS AY089781 366 bp RNA linear VRL 11-JUN-2002  
 DEFINITION Hepatitis C virus strain 135903a polyprotein gene, partial cds.  
 ACCESSION AY089781  
 VERSION AY089781.1 GI:20147021  
 KEYWORDS .  
 SOURCE Hepatitis C virus  
 ORGANISM Hepatitis C virus  
 Viruses; ssRNA positive-strand viruses, no DNA stage;  
 Flaviviridae;Hepacivirus.  
 REFERENCE 1 (bases 1 to 366)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M.,  
 Chinchai,T.and Poovorawan,Y.  
 TITLE Hepatitis C virus genotyping by RFLP and direct sequencing in  
 Thailand  
 JOURNAL Unpublished  
 REFERENCE 2 (bases 1 to 366)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M.,  
 Chinchai,T.and Poovorawan,Y.  
 TITLE Direct Submission  
 JOURNAL Submitted (13-MAR-2002) Hepatitis Research Unit, Chulalongkorn  
 University and Hospital, Rama4, Pratumwan, Bangkok 10330,  
 Thailand  
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 361 accctt  
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LOCUS AY089782 366 bp RNA linear VRL 11-JUN-2002  
 DEFINITION Hepatitis C virus strain 116713a polyprotein gene, partial cds.  
 ACCESSION AY089782  
 VERSION AY089782.1 GI:20147023  
 KEYWORDS .  
 SOURCE Hepatitis C virus  
 ORGANISM Hepatitis C virus  
 Viruses; ssRNA positive-strand viruses, no DNA stage;  
 Flaviviridae;Hepacivirus.  
 REFERENCE 1 (bases 1 to 366)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M.,  
 Chinchai,T.and Poovorawan,Y.  
 TITLE Hepatitis C virus genotyping by RFLP and direct sequencing in  
 Thailand  
 JOURNAL Unpublished  
 REFERENCE 2 (bases 1 to 366)  
 AUTHORS Theamboonlers,A., Bedi,K., Scotraj,N., Sriponthong,M.,  
 Chinchai,T.and Poovorawan,Y.  
 TITLE Direct Submission  
 JOURNAL Submitted (13-MAR-2002) Hepatitis Research Unit, Chulalongkorn  
 University and Hospital, Rama4, Pratumwan, Bangkok 10330,  
 Thailand  
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 BASE COUNT 77 a 117 c 110 g 62 t  
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 301 ccattctggg gcccaaatga cccccggcgg aggtctcgca acttgggtaa agtcatcgat  
 361 accctt

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LOCUS AF528323 356 bp RNA linear VRL 06-AUG-2002  
 DEFINITION Hepatitis C virus isolate 142921a core protein gene, partial cds.  
 ACCESSION AF528323  
 VERSION AF528323.1 GI:22135565  
 KEYWORDS .  
 SOURCE Hepatitis C virus  
 ORGANISM Hepatitis C virus  
 Viruses; ssRNA positive-strand viruses, no DNA stage; Flaviviridae; Hepacivirus.  
 REFERENCE 1 (bases 1 to 356)  
 AUTHORS Theamboonlers, A., Bedi, K., Chinchai, T., Sriponthong, M., Chantarasamee, P. and Poovorawan, Y.  
 TITLE Molecular characterization of HCV core region of HCV infection in Thai blood donor  
 JOURNAL Unpublished  
 REFERENCE 2 (bases 1 to 356)  
 AUTHORS Theamboonlers, A., Bedi, K., Chinchai, T., Sriponthong, M., Chantarasamee, P. and Poovorawan, Y.  
 TITLE Direct Submission  
 JOURNAL Submitted (12-JUL-2002) Pediatric, Chulalongkorn University, RamaIV, Patumwan, Bangkok 10330, Thailand  
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 /db\_xref="GI:22135566"  
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 BASE COUNT 64 a 111 c 118 g 63 t  
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 181 aaggcgcgtc ggcccagagg caggacctgg gccagcccg ggtacccttg gccctctat  
 241 ggcaatgagg gctgtgggtg ggcgggatgg ctctgtccc cccgtggctc tcggcctagc  
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LOCUS AF528324 359 bp RNA linear VRL 06-AUG-2002  
 DEFINITION Hepatitis C virus isolate 045373a core protein gene, partial cds.  
 ACCESSION AF528324  
 VERSION AF528324.1 GI:22135567  
 KEYWORDS .  
 SOURCE Hepatitis C virus  
 ORGANISM Hepatitis C virus  
 Viruses; ssRNA positive-strand viruses, no DNA stage; Flaviviridae; Hepacivirus.  
 REFERENCE 1 (bases 1 to 359)  
 AUTHORS Theamboonlers,A., Bedi,K., Chinchai,T., Sriponthong,M., Chantarasamee,P. and Poovorawan,Y.  
 TITLE Molecular characterization of HCV core region of HCV infection in Thai blood donor  
 JOURNAL Unpublished  
 REFERENCE 2 (bases 1 to 359)  
 AUTHORS Theamboonlers,A., Bedi,K., Chinchai,T., Sriponthong,M., Chantarasamee,P. and Poovorawan,Y.  
 TITLE Direct Submission  
 JOURNAL Submitted (12-JUL-2002) Pediatric, Chulalongkorn University, RamaIV, Patumwan, Bangkok 10330, Thailand  
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 BASE COUNT 71 a 121 c 111 g 56 t  
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 241 ctctacggga atgagggtg cggttgggca ggggtggtct tgtcccccg cggctccccg  
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LOCUS AF528325 358 bp RNA linear VRL 06-AUG-2002  
 DEFINITION Hepatitis C virus isolate 148506a core protein gene, partial cds.  
 ACCESSION AF528325  
 VERSION AF528325.1 GI:22135569  
 KEYWORDS .  
 SOURCE Hepatitis C virus  
 ORGANISM Hepatitis C virus  
 Viruses; ssRNA positive-strand viruses, no DNA stage; Flaviviridae; Hepacivirus.  
 REFERENCE 1 (bases 1 to 358)  
 AUTHORS Theamboonlers,A., Bedi,K., Chinchai,T., Sriponthong,M., Chantarasamee,P. and Poovorawan,Y.  
 TITLE Molecular characterization of HCV core region of HCV infection in Thai blood donor  
 JOURNAL Unpublished  
 REFERENCE 2 (bases 1 to 358)  
 AUTHORS Theamboonlers,A., Bedi,K., Chinchai,T., Sriponthong,M., Chantarasamee,P. and Poovorawan,Y.  
 TITLE Direct Submission  
 JOURNAL Submitted (12-JUL-2002) Pediatric, Chulalongkorn University, RamaIV, Patumwan, Bangkok 10330, Thailand  
 FEATURES Location/Qualifiers  
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 GPNDPRRRSRNLGKVID"  
 BASE COUNT 79 a 109 c 109 g 61 t  
 ORIGIN  
 1 aaaaccccaa agaaaaacca aaagaacac caaccgtcgt ccaatggaag ttaagttccc  
 61 gggcggcggt cagatcggtg gtggagtcta ctattgccg cgaggggcc cacgtttggg  
 121 tgtgcgcgcg acgaggaaga cttctgaacg atcccagccc agaggcaggc gtcagcccat  
 181 accaaaggcg cgccagccaa cgggccggca ctgggctcag cctggttacc cttggcccct  
 241 ttatgggaat gagggctgcg gatgggcggg atggctcctg tctccccgcg gttccccgcc  
 301 taactggggc cccaatgacc cccggcgacg atcgcgcaat ttgggtaaag tcatcgat  
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LOCUS AF528326 358 bp RNA linear VRL 06-AUG-2002  
 DEFINITION Hepatitis C virus isolate 217776a core protein gene, partial cds.  
 ACCESSION AF528326  
 VERSION AF528326.1 GI:22135571  
 KEYWORDS .  
 SOURCE Hepatitis C virus  
 ORGANISM Hepatitis C virus  
 Viruses; ssRNA positive-strand viruses, no DNA stage; Flaviviridae; Hepacivirus.  
 REFERENCE 1 (bases 1 to 358)  
 AUTHORS Theamboonlers,A., Bedi,K., Chinchai,T., Sriponthong,M., Chantarasamee,P. and Poovorawan,Y.  
 TITLE Molecular characterization of HCV core region of HCV infection in Thai blood donor  
 JOURNAL Unpublished  
 REFERENCE 2 (bases 1 to 358)  
 AUTHORS Theamboonlers,A., Bedi,K., Chinchai,T., Sriponthong,M., Chantarasamee,P. and Poovorawan,Y.  
 TITLE Direct Submission  
 JOURNAL Submitted (12-JUL-2002) Pediatric, Chulalongkorn University, RamaIV, Patumwan, Bangkok 10330, Thailand  
 FEATURES Location/Qualifiers  
 source 1..358  
 /organism="Hepatitis C virus"  
 /mol\_type="genomic RNA"  
 /isolate="217776a"  
 /db\_xref="taxon:11103"  
 CDS <1..>358  
 /codon\_start=2  
 /product="core protein"  
 /protein\_id="AAM93266.1"  
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 RKTSE RSQPRGRRQPIPKARQPTGRHWAQPGYPWPLYGNEGCGWAGWLLSPRGSRPNW  
 GPNDPRRRSRNLGKVID"  
 BASE COUNT 73 a 111 c 111 g 63 t  
 ORIGIN  
 1 aaaaccctca agaaaaaccc aacgaaccac caaccgtcgt ccaatggatg taaagttccc  
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 121 tgtgcgcgcg acgaggaaga cttctgaacg atcccagccc agaggcaggc gtcagcccat  
 181 accaaaggcg cgccagccga cgggccggga ctgggctcag cctggttacc cttggcctct  
 241 ttatgggaat gagggctgcg gatgggcggg atggctcctg tctccccgcg gctccccccc  
 301 taattggggc cccaatgacc cccggcgacg atcgcgcaat ttgggtaagg tcatcgat  
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LOCUS AF525883 354 bp RNA linear VRL 23-SEP-2002  
 DEFINITION Hepatitis C virus isolate 072651 polyprotein gene, partial cds.  
 ACCESSION AF525883  
 VERSION AF525883.1 GI:23268498  
 KEYWORDS .  
 SOURCE Hepatitis C virus  
 ORGANISM Hepatitis C virus  
 Viruses; ssRNA positive-strand viruses, no DNA stage;  
 Flaviviridae;Hepacivirus.  
 REFERENCE 1 (bases 1 to 354)  
 AUTHORS Theamboonlers,A., Bedi,K., Chinchai,T., Sriponthong,M.,  
 Chantarasamee,P. and Poovorawan,Y.  
 TITLE Molecular characterization of HCV core region of HCV infection  
 in Thai blood donor  
 JOURNAL Unpublished  
 REFERENCE 2 (bases 1 to 354)  
 AUTHORS Theamboonlers,A., Bedi,K., Chinchai,T., Sriponthong,M.,  
 Chantarasamee,P. and Poovorawan,Y.  
 TITLE Direct Submission  
 JOURNAL Submitted (02-JUL-2002) Pediatric, Chulalongkorn University,  
 RamaIV, Patumwan, Bangkok 10330, Thailand  
 FEATURES Location/Qualifiers  
 source 1..354  
 /organism="Hepatitis C virus"  
 /mol\_type="genomic RNA"  
 /isolate="072651"  
 /db\_xref="taxon:11103"  
 CDS <1..>354  
 /note="core region"  
 /codon\_start=1  
 /product="polyprotein"  
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 PTDPRRRSRNLGKVID"  
 BASE COUNT 65 a 108 c 117 g 64 t  
 ORIGIN  
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 121 cgcgcgacga ggaagacttc cgagcgggtca caacctcgag gtagacgtca gcctatcccc  
 181 aaggcgcgctc ggcccgaggg caggacctgg gctcagcccg ggtacccttg gccctctat  
 241 ggcaatgagg gctgcgggtg ggcgggatgg ctctgtccc cccgtggctc tcggcctagt  
 301 tggggcccca cagacccccg gcgtaggtcg cgcaatttgg gtaaggtcat cgat  
 //

LOCUS AF525884 357 bp RNA linear VRL 23-SEP-2002  
 DEFINITION Hepatitis C virus isolate 008791a polyprotein gene, partial cds.  
 ACCESSION AF525884  
 VERSION AF525884.1 GI:23268500  
 KEYWORDS .  
 SOURCE Hepatitis C virus  
 ORGANISM Hepatitis C virus  
 Viruses; ssRNA positive-strand viruses, no DNA stage; Flaviviridae; Hepacivirus.  
 REFERENCE 1 (bases 1 to 357)  
 AUTHORS Theamboonlers,A., Bedi,K., Chinchai,T., Sriponthong,M., Chantarasamee,P. and Poovorawan,Y.  
 TITLE Molecular characterization of HCV core region of HCV infection in Thai blood donor  
 JOURNAL Unpublished  
 REFERENCE 2 (bases 1 to 357)  
 AUTHORS Theamboonlers,A., Bedi,K., Chinchai,T., Sriponthong,M., Chantarasamee,P. and Poovorawan,Y.  
 TITLE Direct Submission  
 JOURNAL Submitted (02-JUL-2002) Pediatric, Chulalongkorn University, RamaIV, Patumwan, Bangkok 10330, Thailand  
 FEATURES Location/Qualifiers  
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 /organism="Hepatitis C virus"  
 /mol\_type="genomic RNA"  
 /isolate="008791a"  
 /db\_xref="taxon:11103"  
 CDS <1..>357  
 /note="core region"  
 /codon\_start=2  
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 PTDPRRRSRNLGKVIDT"  
 BASE COUNT 63 a 109 c 120 g 65 t  
 ORIGIN  
 1 ctacctcaaa gaaaccaacg gtaacaccaa cgcgcgcca caggacgta agttcccggg  
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 121 gcgcgcgacg aggaagactt ccgagcggtc gcaacctcga ggtagacgtc agcctatccc  
 181 caagcgcgct cggcccgagg gcaggacctg ggctcagccc ggggtaccctt ggcccctcta  
 241 tggcaatgag ggctgtgggt gggcgggatg gctcctgtcc ccccggtggt ctcggcctag  
 301 ttggggcctt acagaccccc ggcgtaggtc gcgcaatttg ggtaagggtca tagatac  
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LOCUS AF525885 359 bp RNA linear VRL 23-SEP-2002  
 DEFINITION Hepatitis C virus isolate 113521a polyprotein gene, partial cds.  
 ACCESSION AF525885  
 VERSION AF525885.1 GI:23268502  
 KEYWORDS .  
 SOURCE Hepatitis C virus  
 ORGANISM Hepatitis C virus  
 Viruses; ssRNA positive-strand viruses, no DNA stage; Flaviviridae; Hepacivirus.  
 REFERENCE 1 (bases 1 to 359)  
 AUTHORS Theamboonlers, A., Bedi, K., Chinchai, T., Sriponthong, M., Chantarasamee, P. and Poovorawan, Y.  
 TITLE Molecular characterization of HCV core region of HCV infection in Thai blood donor  
 JOURNAL Unpublished  
 REFERENCE 2 (bases 1 to 359)  
 AUTHORS Theamboonlers, A., Bedi, K., Chinchai, T., Sriponthong, M., Chantarasamee, P. and Poovorawan, Y.  
 TITLE Direct Submission  
 JOURNAL Submitted (02-JUL-2002) Pediatric, Chulalongkorn University, Rama IV, Patumwan, Bangkok 10330, Thailand  
 FEATURES Location/Qualifiers  
 source 1..359  
 /organism="Hepatitis C virus"  
 /mol\_type="genomic RNA"  
 /isolate="113521a"  
 /db\_xref="taxon:11103"  
 CDS <1..>359  
 /note="core region"  
 /codon\_start=1  
 /product="polyprotein"  
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 /db\_xref="GI:23268503"  
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 GPTDPRRRSRNLGKVIDT"  
 BASE COUNT 65 a 113 c 118 g 63 t  
 ORIGIN  
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 121 gtgcgcgcga cgaggaagac ttccgagcgg tcgcaacctc gaggtagacg tcagcctatc  
 181 cccaaggcgc gtcggcccga gggcaggacc tgggctcagc ccgggtacc ttggcccctc  
 241 tatggcaatg agggctgcgg gtgggcggga tggctcctgt cccccgtgg ctctcggcct  
 301 agctggggcc ccacagaccc ccggcgtagg tcgcgcaatt tgggtaaggt catcgatac  
 //

LOCUS AF525886 356 bp RNA linear VRL 23-SEP-2002  
 DEFINITION Hepatitis C virus isolate 134811a polyprotein gene, partial cds.  
 ACCESSION AF525886  
 VERSION AF525886.1 GI:23268504  
 KEYWORDS .  
 SOURCE Hepatitis C virus  
 ORGANISM Hepatitis C virus  
 Viruses; ssRNA positive-strand viruses, no DNA stage; Flaviviridae; Hepacivirus.  
 REFERENCE 1 (bases 1 to 356)  
 AUTHORS Theamboonlers, A., Bedi, K., Chinchai, T., Sriponthong, M., Chantarasamee, P. and Poovorawan, Y.  
 TITLE Molecular characterization of HCV core region of HCV infection in Thai blood donor  
 JOURNAL Unpublished  
 REFERENCE 2 (bases 1 to 356)  
 AUTHORS Theamboonlers, A., Bedi, K., Chinchai, T., Sriponthong, M., Chantarasamee, P. and Poovorawan, Y.  
 TITLE Direct Submission  
 JOURNAL Submitted (02-JUL-2002) Pediatric, Chulalongkorn University, RamaIV, Patumwan, Bangkok 10330, Thailand  
 FEATURES Location/Qualifiers  
 source 1..356  
 /organism="Hepatitis C virus"  
 /mol\_type="genomic RNA"  
 /isolate="134811a"  
 /db\_xref="taxon:11103"  
 CDS <1..>356  
 /note="core region"  
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 PTDPRRRSRNLGKVIKP"  
 BASE COUNT 67 a 108 c 116 g 65 t  
 ORIGIN  
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 121 cgcgcgacga ggaagacttc cgagcggctg caacctcgag gtagacgtca gcctatcccc  
 181 aaggcgcgctc ggcccagagg caggacctgg gtcagcccg ggtacccttg gcctctctat  
 241 ggcaatgagg gctgcgggtg ggcgggatgg ctcctatctc cccgtggctc tcggcctagt  
 301 tggggcccca cagacccccg gcgtaggtcg cgcaatttgg gtaaggtcat caaacc  
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LOCUS AF525887 357 bp RNA linear VRL 23-SEP-2002  
 DEFINITION Hepatitis C virus isolate 882831b polyprotein gene, partial cds.  
 ACCESSION AF525887  
 VERSION AF525887.1 GI:23268506  
 KEYWORDS .  
 SOURCE Hepatitis C virus  
 ORGANISM Hepatitis C virus  
 Viruses; ssRNA positive-strand viruses, no DNA stage; Flaviviridae; Hepacivirus.  
 REFERENCE 1 (bases 1 to 357)  
 AUTHORS Theamboonlers,A., Bedi,K., Chinchai,T., Sriponthong,M., Chantarasamee,P. and Poovorawan,Y.  
 TITLE Molecular characterization of HCV core region of HCV infection in Thai blood donor  
 JOURNAL Unpublished  
 REFERENCE 2 (bases 1 to 357)  
 AUTHORS Theamboonlers,A., Bedi,K., Chinchai,T., Sriponthong,M., Chantarasamee,P. and Poovorawan,Y.  
 TITLE Direct Submission  
 JOURNAL Submitted (02-JUL-2002) Pediatric, Chulalongkorn University, RamaIV, Patumwan, Bangkok 10330, Thailand  
 FEATURES Location/Qualifiers  
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 /db\_xref="taxon:11103"  
 CDS <1..>357  
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 /codon\_start=1  
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 KTSERTQPRGRRQPIPKARQPEGNAWAGPRVTQPLYGNEGMGWAGWLLSPRGSRPNWG  
 PTDPRRRSRNLGKVIDT"  
 BASE COUNT 72 a 120 c 110 g 55 t  
 ORIGIN  
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 121 cgcgcgacta ggaagactc cgagcggaca caacctcgtg gaaggcgaca acctatcccc  
 181 aaggctcgcc aacccgaggg caacgcctgg gcaggcccc gagtcacca gccctctat  
 241 ggcaatgagg gcatggggtg ggcaggatgg ctctgtcac ccgcgggctc ccggcctaat  
 301 tggggcccga cagacccccg gcgtaggtcg cgtaatttgg gtaaggatcat cgatacc  
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LOCUS AF525888 349 bp RNA linear VRL 23-SEP-2002  
 DEFINITION Hepatitis C virus isolate 871901b polyprotein gene, partial cds.  
 ACCESSION AF525888  
 VERSION AF525888.1 GI:23268508  
 KEYWORDS .  
 SOURCE Hepatitis C virus  
 ORGANISM Hepatitis C virus  
 Viruses; ssRNA positive-strand viruses, no DNA stage; Flaviviridae; Hepacivirus.  
 REFERENCE 1 (bases 1 to 349)  
 AUTHORS Theamboonlers, A., Bedi, K., Chinchai, T., Sriponthong, M., Chantarasamee, P. and Poovorawan, Y.  
 TITLE Molecular characterization of HCV core region of HCV infection in Thai blood donor  
 JOURNAL Unpublished  
 REFERENCE 2 (bases 1 to 349)  
 AUTHORS Theamboonlers, A., Bedi, K., Chinchai, T., Sriponthong, M., Chantarasamee, P. and Poovorawan, Y.  
 TITLE Direct Submission  
 JOURNAL Submitted (02-JUL-2002) Pediatric, Chulalongkorn University, RamaIV, Patumwan, Bangkok 10330, Thailand  
 FEATURES Location/Qualifiers  
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 /db\_xref="taxon:11103"  
 CDS <1..>349  
 /note="core region"  
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 PIDPRRRSRNLGKV"  
 BASE COUNT 71 a 112 c 108 g 58 t  
 ORIGIN  
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 241 ggcaatgagg gctgggggtg ggcaggatgg ctctgtcac cccgtggctc ccgcctagt  
 301 tggggcccca tagacccccg gcgtaggtcg cgtaatttgg gtaaggtea  
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LOCUS AF525889 330 bp RNA linear VRL 23-SEP-2002  
 DEFINITION Hepatitis C virus isolate 133331b polyprotein gene, partial cds.  
 ACCESSION AF525889  
 VERSION AF525889.1 GI:23268510  
 KEYWORDS .  
 SOURCE Hepatitis C virus  
 ORGANISM Hepatitis C virus  
 Viruses; ssRNA positive-strand viruses, no DNA stage; Flaviviridae; Hepacivirus.  
 REFERENCE 1 (bases 1 to 330)  
 AUTHORS Theamboonlers,A., Bedi,K., Chinchai,T., Sriponthong,M., Chantarasamee,P. and Poovorawan,Y.  
 TITLE Molecular characterization of HCV core region of HCV infection in Thai blood donor  
 JOURNAL Unpublished  
 REFERENCE 2 (bases 1 to 330)  
 AUTHORS Theamboonlers,A., Bedi,K., Chinchai,T., Sriponthong,M., Chantarasamee,P. and Poovorawan,Y.  
 TITLE Direct Submission  
 JOURNAL Submitted (02-JUL-2002) Pediatric, Chulalongkorn University, RamaIV, Patumwan, Bangkok 10330, Thailand  
 FEATURES Location/Qualifiers  
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 /organism="Hepatitis C virus"  
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 /db\_xref="taxon:11103"  
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 BASE COUNT 56 a 103 c 111 g 60 t  
 ORIGIN  
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 121 cctcgtgga ggcacaacc tatcccaag gctcgccaac ccgagggcag ggtctgggct  
 181 cagcccgat acccttgcc cctctatggc aatgagggca tgggggggc aggatggctc  
 241 ctgtcacccc gcggtccc gctagtgg ggccccacag accccggcg taggtcgcgt  
 301 aatttgggta aggtcatcga tacccttaca  
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LOCUS AF525890 330 bp RNA linear VRL 23-SEP-2002  
 DEFINITION Hepatitis C virus isolate 103351b polyprotein gene, partial cds.  
 ACCESSION AF525890  
 VERSION AF525890.1 GI:23268512  
 KEYWORDS .  
 SOURCE Hepatitis C virus  
 ORGANISM Hepatitis C virus  
 Viruses; ssRNA positive-strand viruses, no DNA stage; Flaviviridae; Hepacivirus.  
 REFERENCE 1 (bases 1 to 330)  
 AUTHORS Theamboonlers,A., Bedi,K., Chinchai,T., Sriponthong,M., Chantarasamee,P. and Poovorawan,Y.  
 TITLE Molecular characterization of HCV core region of HCV infection in Thai blood donor  
 JOURNAL Unpublished  
 REFERENCE 2 (bases 1 to 330)  
 AUTHORS Theamboonlers,A., Bedi,K., Chinchai,T., Sriponthong,M., Chantarasamee,P. and Poovorawan,Y.  
 TITLE Direct Submission  
 JOURNAL Submitted (02-JUL-2002) Pediatric, Chulalongkorn University, RamaIV, Patumwan, Bangkok 10330, Thailand  
 FEATURES Location/Qualifiers  
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 BASE COUNT 56 a 106 c 110 g 58 t  
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 121 cctcgtgaa ggcgacaacc tatccccaag gctcgccaac ccgagggcag ggtctgggct  
 181 cagccggat acccttgcc cctctatggc aatgagggca tgggggtggc aggatggctc  
 241 ctgtcacccc gcggctccc gcctagtgg ggccccacag accccggcg taggtcgcgt  
 301 aatttgcgca aggtcatcga taccctcaca  
 //

LOCUS AF525891 363 bp RNA linear VRL 23-SEP-2002  
 DEFINITION Hepatitis C virus isolate 154671b polyprotein gene, partial cds.  
 ACCESSION AF525891  
 VERSION AF525891.1 GI:23268514  
 KEYWORDS .  
 SOURCE Hepatitis C virus  
 ORGANISM Hepatitis C virus  
 Viruses; ssRNA positive-strand viruses, no DNA stage; Flaviviridae; Hepacivirus.  
 REFERENCE 1 (bases 1 to 363)  
 AUTHORS Theamboonlers,A., Bedi,K., Chinchai,T., Sriponthong,M., Chantarasamee,P. and Poovorawan,Y.  
 TITLE Molecular characterization of HCV core region of HCV infection in Thai blood donor  
 JOURNAL Unpublished  
 REFERENCE 2 (bases 1 to 363)  
 AUTHORS Theamboonlers,A., Bedi,K., Chinchai,T., Sriponthong,M., Chantarasamee,P. and Poovorawan,Y.  
 TITLE Direct Submission  
 JOURNAL Submitted (02-JUL-2002) Pediatric, Chulalongkorn University, RamaIV, Patumwan, Bangkok 10330, Thailand  
 FEATURES Location/Qualifiers  
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 CDS <1..>363  
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 BASE COUNT 70 a 118 c 116 g 59 t  
 ORIGIN  
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 121 cgcgcgacta ggaagacttc cgagcgtcgc caacctcgtg gaaggcgaca acctatcccc  
 181 aaggtcgcgc ggcccagagg caggacctgg gctcagcccg ggtacccttg gccctctat  
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 301 tggggcccca cagacccccg gcgtaggtcg cgtaatttgg gtaaggatcat cgataccctc  
 361 aca  
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LOCUS AF525892 363 bp RNA linear VRL 23-SEP-2002  
 DEFINITION Hepatitis C virus isolate 006541b polyprotein gene, partial cds.  
 ACCESSION AF525892  
 VERSION AF525892.1 GI:23268516  
 KEYWORDS .  
 SOURCE Hepatitis C virus  
 ORGANISM Hepatitis C virus  
 Viruses; ssRNA positive-strand viruses, no DNA stage; Flaviviridae; Hepacivirus.  
 REFERENCE 1 (bases 1 to 363)  
 AUTHORS Theamboonlers,A., Bedi,K., Chinchai,T., Sriponthong,M., Chantarasamee,P. and Poovorawan,Y.  
 TITLE Molecular characterization of HCV core region of HCV infection in Thai blood donor  
 JOURNAL Unpublished  
 REFERENCE 2 (bases 1 to 363)  
 AUTHORS Theamboonlers,A., Bedi,K., Chinchai,T., Sriponthong,M., Chantarasamee,P. and Poovorawan,Y.  
 TITLE Direct Submission  
 JOURNAL Submitted (02-JUL-2002) Pediatric, Chulalongkorn University, RamaIV, Patumwan, Bangkok 10330, Thailand  
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 181 aaggctcgcc agcccaggg cagggcctgg gctcagccc ggtacccttg gccctctat  
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 SOURCE Hepatitis C virus  
 ORGANISM Hepatitis C virus  
 Viruses; ssRNA positive-strand viruses, no DNA stage;  
 Flaviviridae;Hepacivirus.  
 REFERENCE 1 (bases 1 to 363)  
 AUTHORS Theamboonlers,A., Bedi,K., Chinchai,T., Sriponthong,M.,  
 Chantarasamee,P. and Poovorawan,Y.  
 TITLE Molecular characterization of HCV core region of HCV infection  
 in Thai blood donor  
 JOURNAL Unpublished  
 REFERENCE 2 (bases 1 to 363)  
 AUTHORS Theamboonlers,A., Bedi,K., Chinchai,T., Sriponthong,M.,  
 Chantarasamee,P. and Poovorawan,Y.  
 TITLE Direct Submission  
 JOURNAL Submitted (02-JUL-2002) Pediatric, Chulalongkorn University,  
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 361 aca  
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 KEYWORDS .  
 SOURCE Hepatitis C virus  
 ORGANISM Hepatitis C virus  
 Viruses; ssRNA positive-strand viruses, no DNA stage; Flaviviridae; Hepacivirus.  
 REFERENCE 1 (bases 1 to 363)  
 AUTHORS Theamboonlers,A., Bedi,K., Chinchai,T., Sriponthong,M., Chantarasamee,P. and Poovorawan,Y.  
 TITLE Molecular characterization of HCV core region of HCV infection in Thai blood donor  
 JOURNAL Unpublished  
 REFERENCE 2 (bases 1 to 363)  
 AUTHORS Theamboonlers,A., Bedi,K., Chinchai,T., Sriponthong,M., Chantarasamee,P. and Poovorawan,Y.  
 TITLE Direct Submission  
 JOURNAL Submitted (02-JUL-2002) Pediatric, Chulalongkorn University, RamaIV, Patumwan, Bangkok 10330, Thailand  
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 SOURCE Hepatitis C virus  
 ORGANISM Hepatitis C virus  
 Viruses; ssRNA positive-strand viruses, no DNA stage;  
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 REFERENCE 1 (bases 1 to 359)  
 AUTHORS Theamboonlers,A., Bedi,K., Chinchai,T., Sriponthong,M.,  
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 TITLE Molecular characterization of HCV core region of HCV infection  
 in Thai blood donor  
 JOURNAL Unpublished  
 REFERENCE 2 (bases 1 to 359)  
 AUTHORS Theamboonlers,A., Bedi,K., Chinchai,T., Sriponthong,M.,  
 Chantarasamee,P. and Poovorawan,Y.  
 TITLE Direct Submission  
 JOURNAL Submitted (02-JUL-2002) Pediatric, Chulalongkorn University,  
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 ORGANISM Hepatitis C virus  
 Viruses; ssRNA positive-strand viruses, no DNA stage; Flaviviridae; Hepacivirus.  
 REFERENCE 1 (bases 1 to 359)  
 AUTHORS Theamboonlers,A., Bedi,K., Chinchai,T., Sriponthong,M., Chantarasamee,P. and Poovorawan,Y.  
 TITLE Molecular characterization of HCV core region of HCV infection in Thai blood donor  
 JOURNAL Unpublished  
 REFERENCE 2 (bases 1 to 359)  
 AUTHORS Theamboonlers,A., Bedi,K., Chinchai,T., Sriponthong,M., Chantarasamee,P. and Poovorawan,Y.  
 TITLE Direct Submission  
 JOURNAL Submitted (02-JUL-2002) Pediatric, Chulalongkorn University, RamaIV, Patumwan, Bangkok 10330, Thailand  
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 KEYWORDS .  
 SOURCE Hepatitis C virus  
 ORGANISM Hepatitis C virus  
 Viruses; ssRNA positive-strand viruses, no DNA stage; Flaviviridae; Hepacivirus.  
 REFERENCE 1 (bases 1 to 359)  
 AUTHORS Theamboonlers,A., Bedi,K., Chinchai,T., Sriponthong,M., Chantarasamee,P. and Poovorawan,Y.  
 TITLE Molecular characterization of HCV core region of HCV infection in Thai blood donor  
 JOURNAL Unpublished  
 REFERENCE 2 (bases 1 to 359)  
 AUTHORS Theamboonlers,A., Bedi,K., Chinchai,T., Sriponthong,M., Chantarasamee,P. and Poovorawan,Y.  
 TITLE Direct Submission  
 JOURNAL Submitted (02-JUL-2002) Pediatric, Chulalongkorn University, RamaIV, Patumwan, Bangkok 10330, Thailand  
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 SOURCE Hepatitis C virus  
 ORGANISM Hepatitis C virus  
 Viruses; ssRNA positive-strand viruses, no DNA stage; Flaviviridae; Hepacivirus.  
 REFERENCE 1 (bases 1 to 359)  
 AUTHORS Theamboonlers,A., Bedi,K., Chinchai,T., Sriponthong,M., Chantarasamee,P. and Poovorawan,Y.  
 TITLE Molecular characterization of HCV core region of HCV infection in Thai blood donor  
 JOURNAL Unpublished  
 REFERENCE 2 (bases 1 to 359)  
 AUTHORS Theamboonlers,A., Bedi,K., Chinchai,T., Sriponthong,M., Chantarasamee,P. and Poovorawan,Y.  
 TITLE Direct Submission  
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KEYWORDS   .
SOURCE     Hepatitis C virus
ORGANISM   Hepatitis C virus
            Viruses; ssRNA positive-strand viruses, no DNA stage;
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REFERENCE  1 (bases 1 to 359)
AUTHORS    Theamboonlers,A., Bedi,K., Chinchai,T., Sriponthong,M.,
            Chantarasamee,P. and Poovorawan,Y.
TITLE      Molecular characterization of HCV core region of HCV infection
            in Thai blood donor
JOURNAL    Unpublished
REFERENCE  2 (bases 1 to 359)
AUTHORS    Theamboonlers,A., Bedi,K., Chinchai,T., Sriponthong,M.,
            Chantarasamee,P. and Poovorawan,Y.
TITLE      Direct Submission
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 SOURCE Hepatitis C virus  
 ORGANISM Hepatitis C virus  
 Viruses; ssRNA positive-strand viruses, no DNA stage; Flaviviridae; Hepacivirus.  
 REFERENCE 1 (bases 1 to 359)  
 AUTHORS Theamboonlers, A., Bedi, K., Chinchai, T., Sriponthong, M., Chantarasamee, P. and Poovorawan, Y.  
 TITLE Molecular characterization of HCV core region of HCV infection in Thai blood donor  
 JOURNAL Unpublished  
 REFERENCE 2 (bases 1 to 359)  
 AUTHORS Theamboonlers, A., Bedi, K., Chinchai, T., Sriponthong, M., Chantarasamee, P. and Poovorawan, Y.  
 TITLE Direct Submission  
 JOURNAL Submitted (02-JUL-2002) Pediatric, Chulalongkorn University, RamaIV, Patumwan, Bangkok 10330, Thailand  
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 SOURCE Hepatitis C virus  
 ORGANISM Hepatitis C virus  
 Viruses; ssRNA positive-strand viruses, no DNA stage; Flaviviridae; Hepacivirus.  
 REFERENCE 1 (bases 1 to 359)  
 AUTHORS Theamboonlers,A., Bedi,K., Chinchai,T., Sriponthong,M., Chantarasamee,P. and Poovorawan,Y.  
 TITLE Molecular characterization of HCV core region of HCV infection in Thai blood donor  
 JOURNAL Unpublished  
 REFERENCE 2 (bases 1 to 359)  
 AUTHORS Theamboonlers,A., Bedi,K., Chinchai,T., Sriponthong,M., Chantarasamee,P. and Poovorawan,Y.  
 TITLE Direct Submission  
 JOURNAL Submitted (02-JUL-2002) Pediatric, Chulalongkorn University, RamaIV, Patumwan, Bangkok 10330, Thailand  
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 SOURCE Hepatitis C virus  
 ORGANISM Hepatitis C virus  
 Viruses; ssRNA positive-strand viruses, no DNA stage; Flaviviridae; Hepacivirus.  
 REFERENCE 1 (bases 1 to 359)  
 AUTHORS Theamboonlers,A., Bedi,K., Chinchai,T., Sriponthong,M., Chantarasamee,P. and Poovorawan,Y.  
 TITLE Molecular characterization of HCV core region of HCV infection in Thai blood donor  
 JOURNAL Unpublished  
 REFERENCE 2 (bases 1 to 359)  
 AUTHORS Theamboonlers,A., Bedi,K., Chinchai,T., Sriponthong,M., Chantarasamee,P. and Poovorawan,Y.  
 TITLE Direct Submission  
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 241 ctctatggta acgagggctg cgggtgggca ggggtggctc tgtccccgcy cggctctcgt  
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 KEYWORDS .  
 SOURCE Hepatitis C virus  
 ORGANISM Hepatitis C virus  
 Viruses; ssRNA positive-strand viruses, no DNA stage; Flaviviridae; Hepacivirus.  
 REFERENCE 1 (bases 1 to 359)  
 AUTHORS Theamboonlers,A., Bedi,K., Chinchai,T., Sriponthong,M., Chantarasamee,P. and Poovorawan,Y.  
 TITLE Molecular characterization of HCV core region of HCV infection in Thai blood donor  
 JOURNAL Unpublished  
 REFERENCE 2 (bases 1 to 359)  
 AUTHORS Theamboonlers,A., Bedi,K., Chinchai,T., Sriponthong,M., Chantarasamee,P. and Poovorawan,Y.  
 TITLE Direct Submission  
 JOURNAL Submitted (02-JUL-2002) Pediatric, Chulalongkorn University, RamaIV, Patumwan, Bangkok 10330, Thailand  
 FEATURES Location/Qualifiers  
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LOCUS AF525904 359 bp RNA linear VRL 23-SEP-2002  
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 VERSION AF525904.1 GI:23268540  
 KEYWORDS .  
 SOURCE Hepatitis C virus  
 ORGANISM Hepatitis C virus  
 Viruses; ssRNA positive-strand viruses, no DNA stage;  
 Flaviviridae;Hepacivirus.  
 REFERENCE 1 (bases 1 to 359)  
 AUTHORS Theamboonlers,A., Bedi,K., Chinchai,T., Sriponthong,M.,  
 Chantarasamee,P. and Poovorawan,Y.  
 TITLE Molecular characterization of HCV core region of HCV infection  
 in Thai blood donor  
 JOURNAL Unpublished  
 REFERENCE 2 (bases 1 to 359)  
 AUTHORS Theamboonlers,A., Bedi,K., Chinchai,T., Sriponthong,M.,  
 Chantarasamee,P. and Poovorawan,Y.  
 TITLE Direct Submission  
 JOURNAL Submitted (02-JUL-2002) Pediatric, Chulalongkorn University,  
 RamaIV, Patumwan, Bangkok 10330, Thailand  
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LOCUS AF525905 359 bp RNA linear VRL 23-SEP-2002  
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 VERSION AF525905.1 GI:23268542  
 KEYWORDS .  
 SOURCE Hepatitis C virus  
 ORGANISM Hepatitis C virus  
 Viruses; ssRNA positive-strand viruses, no DNA stage;  
 Flaviviridae;Hepacivirus.  
 REFERENCE 1 (bases 1 to 359)  
 AUTHORS Theamboonlers,A., Bedi,K., Chinchai,T., Sriponthong,M.,  
 Chantarasamee,P. and Poovorawan,Y.  
 TITLE Molecular characterization of HCV core region of HCV infection  
 in Thai blood donor  
 JOURNAL Unpublished  
 REFERENCE 2 (bases 1 to 359)  
 AUTHORS Theamboonlers,A., Bedi,K., Chinchai,T., Sriponthong,M.,  
 Chantarasamee,P. and Poovorawan,Y.  
 TITLE Direct Submission  
 JOURNAL Submitted (02-JUL-2002) Pediatric, Chulalongkorn University,  
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LOCUS AF525907 353 bp RNA linear VRL 23-SEP-2002  
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 ACCESSION AF525907  
 VERSION AF525907.1 GI:23268546  
 KEYWORDS .  
 SOURCE Hepatitis C virus  
 ORGANISM Hepatitis C virus  
 Viruses; ssRNA positive-strand viruses, no DNA stage;  
 Flaviviridae;Hepacivirus.  
 REFERENCE 1 (bases 1 to 353)  
 AUTHORS Theamboonlers,A., Bedi,K., Chinchai,T., Sriponthong,M.,  
 Chantarasamee,P. and Poovorawan,Y.  
 TITLE Molecular characterization of HCV core region of HCV infection  
 in Thai blood donor  
 JOURNAL Unpublished  
 REFERENCE 2 (bases 1 to 353)  
 AUTHORS Theamboonlers,A., Bedi,K., Chinchai,T., Sriponthong,M.,  
 Chantarasamee,P. and Poovorawan,Y.  
 TITLE Direct Submission  
 JOURNAL Submitted (02-JUL-2002) Pediatric, Chulalongkorn University,  
 RamaIV, Patumwan, Bangkok 10330, Thailand  
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 241 ggtaaacagg gctcgcggtg ggcagggtgg ctctgtccc cgcgcggctc ccgtccatct  
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 SOURCE Hepatitis C virus  
 ORGANISM Hepatitis C virus  
 Viruses; ssRNA positive-strand viruses, no DNA stage;  
 Flaviviridae;Hepacivirus.  
 REFERENCE 1 (bases 1 to 353)  
 AUTHORS Theamboonlers,A., Bedi,K., Chinchai,T., Sriponthong,M.,  
 Chantarasamee,P. and Poovorawan,Y.  
 TITLE Molecular characterization of HCV core region of HCV infection  
 in Thai blood donor  
 JOURNAL Unpublished  
 REFERENCE 2 (bases 1 to 353)  
 AUTHORS Theamboonlers,A., Bedi,K., Chinchai,T., Sriponthong,M.,  
 Chantarasamee,P. and Poovorawan,Y.  
 TITLE Direct Submission  
 JOURNAL Submitted (02-JUL-2002) Pediatric, Chulalongkorn University,  
 RamaIV, Patumwan, Bangkok 10330, Thailand  
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 301 tggggcccaa atgacccccg gcggaggtcc cgcaatttgg taaagtcac gat  
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## BIOGRAPHY

Mrs. Teeraporn Chinchai was born on September 8, 1965 in Bangkok, Thailand. She received her Bachelor degree of Science (Medical Technology) in 1987 from Faculty of Medical Technology, Chiangmai University and Master degree of Science (Microbiology) in 1990 from Faculty of Science, Mahidol University. She has enrolled in the Royal Golden Jubilee Scholar (TRF) in graduate program for the Degree of Doctor of Philosophy in Medical Microbiology, Inter-Department of Medical Microbiology, Faculty of Graduate School, Chulalongkorn University since 1999. She has published 3 international scientific articles in *Infection* (2001), *Acta Virologica* (2002) and *J Virol Methods* (2003) during her Ph.D. study. She is an Assistant Professor in Department of Microbiology, Faculty of Medicine, Srinakharinwirot University.



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จุฬาลงกรณ์มหาวิทยาลัย