

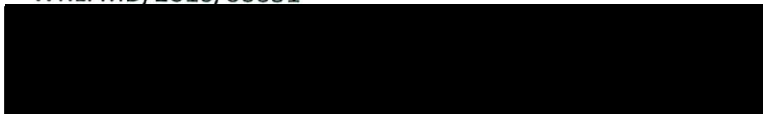


INSTITUTE FOR ANIMAL HEALTH
Director: Professor Martin W. Shirley, PhD
PIRBRIGHT LABORATORY
Ash Road,
Pirbright,
Surrey,
GU24 0NF
Intn Tel: 00 44 1483 232441
Tel: 01483 232441 Fax: 01483 232621

FMD Sequencing Report

Lab Reference WRL Batch Number: WRLFMD/2010/00031

Sender Details:



Date Received: 2nd September 2010
Country of Origin: Turkey
Date Reported: 8th October 2010

Dear Dr. Musa Alkan,

Re.: Serotype A

Sequencing work has now been completed in respect of the samples you submitted and the details are as attached. Please note that all of our phylogenetic trees can be accessed via the internet at: <http://www.wrlfmd.org/>

Results Approved By:



Official Stamp:



Date:

8/10/10



To help us improve the quality of our service, please send any suggestions or requests to the Reference Laboratory by fax (+44 (0) 1483 232621 or email: elizabeth.wilson@bbsrc.ac.uk)

FAO World Reference Laboratory for Foot-and-Mouth Disease (WRLFMD)

Genotyping Report

Report Date for this Batch: 7 October 2010

FMDV type A

Country: Turkey

Period: 2010

No. of isolates: 4

BATCH: WRLFMD/2010/00031



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FAO World Reference Laboratory for FMD Genotyping Report

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Serotype: A WRLFMD Ref No: TUR/20/2010(A) Batch No: WRLFMD/2010/00031 Sender Ref: 814/2010 Location: Bedirkale, Merkez, Takat, Black Sea, Turkey Date collected: 13/07/2010 Date received by WRLFMD: 02/09/2010 Date received for sequencing: 27/09/2010 Species: Cattle Material used: BTy1 Region sequenced: VP1 RT-PCR primers: A-1C562F/EUR-2B52R	Report date: 03/10/2010 Reported by: N.J. Knowles Checked by: D.P. King Topotype: ASIA Genotype/strain: Iran-05 ^{AFG-07} Sequence filename: TUR10A20.SEQ Date sequence last updated: 03/10/2010 No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639 Total no. of comparisons: 1171 Min. no. of nt for comparison: 600 Total turn-around time: 31 days Sequencing time: 6 days
Comments: Two sequences were obtained from this isolate and were named TUR/20/2010(A) & TUR/20/2010(B).	

Most Closely Related Viruses									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	A/TUR/28/2010	TUR10-28	639	639	0	100.00	0.00	ASIA	Iran-05 ^{AFG-07}
2	A/TUR/34/2010	TUR10-34	639	638	0	99.84	0.16	ASIA	Iran-05 ^{AFG-07}
3	A/TUR/151/2010* (FMDI)	TUR10-AG	639	634	0	99.22	0.78	ASIA	Iran-05 ^{AFG-07}
4	A/TUR/99/2010* (FMDI)	TUR10-AA	639	633	0	99.06	0.94	ASIA	Iran-05 ^{AFG-07}
5	A/TUR/161/2010* (FMDI)	TUR10-AM	639	632	0	98.90	1.10	ASIA	Iran-05 ^{AFG-07}
6	A/IRN/15/2009	IRN09-15	639	624	0	97.65	2.35	ASIA	Iran-05 ^{AFG-07}
7	A/IRN/26/2009	IRN09-26	639	624	0	97.65	2.35	ASIA	Iran-05 ^{AFG-07}
8	A/IRN/36/2009	IRN09-36	639	624	0	97.65	2.35	ASIA	Iran-05 ^{AFG-07}
9	A/IRN/53/2009	IRN09-53	639	623	0	97.50	2.50	ASIA	Iran-05 ^{AFG-07}
10	A/IRN/9/2009	IRN09-09	639	623	0	97.50	2.50	ASIA	Iran-05 ^{AFG-07}
Most Closely Related Reference Viruses									
(see http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	A/AFG/6/2007	AFG07-06	639	616	0	96.40	3.60	ASIA	Iran-05 ^{AFG-07}
2	A/IRN/1/2005 (EF208769)	IRN05-01	639	602	0	94.21	5.79	ASIA	Iran-05
3	A/BAR/6/2008	BAR08-06	639	600	0	93.90	6.10	ASIA	Iran-05 ^{BAR-08}
4	A/TUR/1/2008	TUR08-01	639	596	0	93.27	6.73	ASIA	Iran-05 ^{ARD-07}
5	A/TUR/33/2008	TUR08-33	639	593	0	92.80	7.20	ASIA	Iran-05 ^{EZM-07}
6	A/IRN/2/87 (EF208770)	IRN87-02	636	538	0	84.59	15.41	ASIA	Iran-87
7	A22/IRQ/64 (AY593763)	IRQ64--A	639	535	0	83.72	16.28	ASIA	A22
8	A/TAI/118/87* (EF208777)	TAI87-AD	636	530	0	83.33	16.67	ASIA	Thai-87
9	A/IRN/22/99 (EF208772)	IRN99-22	636	525	0	82.55	17.45	ASIA	Iran-99
10	A/IRN/1/96 (EF208771)	IRN96-01	638	526	1	82.45	17.55	ASIA	Iran-96

nt, nucleotides

*, not a WRLFMD reference number

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Serotype: A WRLFMD Ref No: TUR/20/2010(B) Batch No: WRLFMD/2010/00031 Sender Ref: 814/2010 Location: Bedirkale, Merkez, Takat, Black Sea, Turkey Date collected: 13/07/2010 Date received by WRLFMD: 02/09/2010 Date received for sequencing: 27/09/2010 Species: Cattle Material used: BTy1 Region sequenced: VP1 RT-PCR primers: A-1C612F/EUR-2B52R	Report date: 03/10/2010 Reported by: N.J. Knowles Checked by: D.P. King Topotype: ASIA Genotype/strain: Iran-05 ^{ARD-07} Sequence filename: TUR10B20.SEQ Date sequence last updated: 03/10/2010 No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639 Total no. of comparisons: 1171 Min. no. of nt for comparison: 600 Total turn-around time: 31 days Sequencing time: 6 days
Comments: Two sequences were obtained from this isolate and were named TUR/20/2010(A) & TUR/20/2010(B).	

Most Closely Related Viruses									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	A/TUR/6/2010	TUR10-06	639	631	0	98.75	1.25	ASIA	Iran-05 ^{ARD-07}
2	A/TUR/160/2010* (FMDI)	TUR10-AL	639	630	0	98.59	1.41	ASIA	Iran-05 ^{ARD-07}
3	A/TUR/14/2009	TUR09-14	639	629	0	98.44	1.56	ASIA	Iran-05 ^{ARD-07}
4	A/TUR/157/2010* (FMDI)	TUR10-AI	639	628	0	98.28	1.72	ASIA	Iran-05 ^{ARD-07}
5	A/TUR/2/2010	TUR10-02	639	628	0	98.28	1.72	ASIA	Iran-05 ^{ARD-07}
6	A/TUR/21/2009	TUR09-21	639	628	0	98.28	1.72	ASIA	Iran-05 ^{ARD-07}
7	A/TUR/138/2010* (FMDI)	TUR10-AE	639	627	0	98.12	1.88	ASIA	Iran-05 ^{ARD-07}
8	A/TUR/152/2010* (FMDI)	TUR10-AH	639	627	0	98.12	1.88	ASIA	Iran-05 ^{ARD-07}
9	A/TUR/159/2010* (FMDI)	TUR10-AK	639	627	0	98.12	1.88	ASIA	Iran-05 ^{ARD-07}
10	A/TUR/158/2010* (FMDI)	TUR10-AJ	639	622	0	97.34	2.66	ASIA	Iran-05 ^{ARD-07}
Most Closely Related Reference Viruses									
(see http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	A/TUR/1/2008	TUR08-01	639	606	0	94.84	5.16	ASIA	Iran-05 ^{ARD-07}
2	A/IRN/1/2005 (EF208769)	IRN05-01	639	589	0	92.18	7.82	ASIA	Iran-05
3	A/AFG/6/2007	AFG07-06	639	588	0	92.02	7.98	ASIA	Iran-05 ^{AFG-07}
4	A/TUR/33/2008	TUR08-33	639	584	0	91.39	8.61	ASIA	Iran-05 ^{EZM-07}
5	A/BAR/6/2008	BAR08-06	639	580	0	90.77	9.23	ASIA	Iran-05 ^{BAR-08}
6	A/IRN/2/87 (EF208770)	IRN87-02	636	533	0	83.81	16.19	ASIA	Iran-87
7	A15/Bangkok/TAI/60 (AY593755)	TAI60--D	639	535	0	83.72	16.28	ASIA	A ₁₅
8	A22/IRQ/64 (AY593763)	IRQ64--A	639	530	0	82.94	17.06	ASIA	A ₂₂
9	A/TAI/2/97 (EF208778)	TAI97-02	636	527	0	82.86	17.14	ASIA	Thai-97
10	A/TAI/118/87* (EF208777)	TAI87-AD	636	525	0	82.55	17.45	ASIA	Thai-87

nt, nucleotides

*, not a WRLFMD reference number

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Serotype: A WRLFMD Ref No: TUR/28/2010 Batch No: WRLFMD/2010/00031 Sender Ref: 925/2010 Location: A. caglan, Odunpzari, Eskisehir, Inner Anatolia, Turkey Date collected: 26/07/2010 Date received by WRLFMD: 02/09/2010 Date received for sequencing: 27/09/2010 Species: Cattle Material used: BTy1 Region sequenced: VP1 RT-PCR primers: A-1C562F/EUR-2B52R A-1C612F/EUR-2B52R	Report date: 03/10/2010 Reported by: N.J. Knowles Checked by: D.P. King Topotype: ASIA Genotype/strain: Iran-05 ^{AFG-07} Sequence filename: TUR10-28.SEQ Date sequence last updated: 03/10/2010 No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639 Total no. of comparisons: 1171 Min. no. of nt for comparison: 600 Total turn-around time: 31 days Sequencing time: 6 days
Comments:	

Most Closely Related Viruses									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	A/TUR/20/2010(A)	TUR10A20	639	639	0	100.00	0.00	ASIA	Iran-05 ^{AFG-07}
2	A/TUR/34/2010	TUR10-34	639	638	0	99.84	0.16	ASIA	Iran-05 ^{AFG-07}
3	A/TUR/151/2010* (FMDI)	TUR10-AG	639	634	0	99.22	0.78	ASIA	Iran-05 ^{AFG-07}
4	A/TUR/99/2010* (FMDI)	TUR10-AA	639	633	0	99.06	0.94	ASIA	Iran-05 ^{AFG-07}
5	A/TUR/161/2010* (FMDI)	TUR10-AM	639	632	0	98.90	1.10	ASIA	Iran-05 ^{AFG-07}
6	A/IRN/15/2009	IRN09-15	639	624	0	97.65	2.35	ASIA	Iran-05 ^{AFG-07}
7	A/IRN/26/2009	IRN09-26	639	624	0	97.65	2.35	ASIA	Iran-05 ^{AFG-07}
8	A/IRN/36/2009	IRN09-36	639	624	0	97.65	2.35	ASIA	Iran-05 ^{AFG-07}
9	A/IRN/53/2009	IRN09-53	639	623	0	97.50	2.50	ASIA	Iran-05 ^{AFG-07}
10	A/IRN/9/2009	IRN09-09	639	623	0	97.50	2.50	ASIA	Iran-05 ^{AFG-07}
Most Closely Related Reference Viruses									
(see http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	A/AFG/6/2007	AFG07-06	639	616	0	96.40	3.60	ASIA	Iran-05 ^{AFG-07}
2	A/IRN/1/2005 (EF208769)	IRN05-01	639	602	0	94.21	5.79	ASIA	Iran-05
3	A/BAR/6/2008	BAR08-06	639	600	0	93.90	6.10	ASIA	Iran-05 ^{BAR-08}
4	A/TUR/1/2008	TUR08-01	639	596	0	93.27	6.73	ASIA	Iran-05 ^{ARD-07}
5	A/TUR/33/2008	TUR08-33	639	593	0	92.80	7.20	ASIA	Iran-05 ^{EZM-07}
6	A/IRN/2/87 (EF208770)	IRN87-02	636	538	0	84.59	15.41	ASIA	Iran-87
7	A22/IRQ/64 (AY593763)	IRQ64--A	639	535	0	83.72	16.28	ASIA	A ₂₂
8	A/TAI/118/87* (EF208777)	TAI87-AD	636	530	0	83.33	16.67	ASIA	Thai-87
9	A/IRN/22/99 (EF208772)	IRN99-22	636	525	0	82.55	17.45	ASIA	Iran-99
10	A/IRN/1/96 (EF208771)	IRN96-01	638	526	1	82.45	17.55	ASIA	Iran-96

nt, nucleotides

*, not a WRLFMD reference number

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Serotype: A WRLFMD Ref No: TUR/34/2010 Batch No: WRLFMD/2010/00031 Sender Ref: 1029/2010 Location: A. Caglan, Odunpazari, Eskisehir, East Anatolia, Turkey Date collected: 13/08/2010 Date received by WRLFMD: 02/09/2010 Date received for sequencing: 27/09/2010 Species: Cattle Material used: BTy1 Region sequenced: VP1 RT-PCR primers: A-1C562F/EUR-2B52R A-1C612F/EUR-2B52R	Report date: 03/10/2010 Reported by: N.J. Knowles Checked by: D.P. King Topotype: ASIA Genotype/strain: Iran-05 ^{AFG-07} Sequence filename: TUR10-34.SEQ Date sequence last updated: 03/10/2010 No. of Nt determined: 639 No. of ambiguities: 0 Gene length: 639 Total no. of comparisons: 1171 Min. no. of nt for comparison: 600 Total turn-around time: 31 days Sequencing time: 6 days
Comments:	

Most Closely Related Viruses									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	A/TUR/20/2010(A)	TUR10A20	639	638	0	99.84	0.16	ASIA	Iran-05 ^{AFG-07}
2	A/TUR/28/2010	TUR10-28	639	638	0	99.84	0.16	ASIA	Iran-05 ^{AFG-07}
3	A/TUR/151/2010* (FMDI)	TUR10-AG	639	633	0	99.06	0.94	ASIA	Iran-05 ^{AFG-07}
4	A/TUR/99/2010* (FMDI)	TUR10-AA	639	632	0	98.90	1.10	ASIA	Iran-05 ^{AFG-07}
5	A/TUR/161/2010* (FMDI)	TUR10-AM	639	631	0	98.75	1.25	ASIA	Iran-05 ^{AFG-07}
6	A/IRN/15/2009	IRN09-15	639	623	0	97.50	2.50	ASIA	Iran-05 ^{AFG-07}
7	A/IRN/26/2009	IRN09-26	639	623	0	97.50	2.50	ASIA	Iran-05 ^{AFG-07}
8	A/IRN/36/2009	IRN09-36	639	623	0	97.50	2.50	ASIA	Iran-05 ^{AFG-07}
9	A/IRN/53/2009	IRN09-53	639	622	0	97.34	2.66	ASIA	Iran-05 ^{AFG-07}
10	A/IRN/9/2009	IRN09-09	639	622	0	97.34	2.66	ASIA	Iran-05 ^{AFG-07}
Most Closely Related Reference Viruses									
(see http://www.wrlfmd.org/fmd_genotyping/prototypes.htm)									
Pos.	Virus name	Filename	No. nt comp.	No. nt match.	No. of ambig.	% Id.	% Diff.	Topotype	Strain
1	A/AFG/6/2007	AFG07-06	639	615	0	96.24	3.76	ASIA	Iran-05 ^{AFG-07}
2	A/IRN/1/2005 (EF208769)	IRN05-01	639	601	0	94.05	5.95	ASIA	Iran-05
3	A/BAR/6/2008	BAR08-06	639	599	0	93.74	6.26	ASIA	Iran-05 ^{BAR-08}
4	A/TUR/1/2008	TUR08-01	639	595	0	93.11	6.89	ASIA	Iran-05 ^{ARD-07}
5	A/TUR/33/2008	TUR08-33	639	592	0	92.64	7.36	ASIA	Iran-05 ^{EZM-07}
6	A/IRN/2/87 (EF208770)	IRN87-02	636	537	0	84.43	15.57	ASIA	Iran-87
7	A22/IRQ/64 (AY593763)	IRQ64--A	639	534	0	83.57	16.43	ASIA	A ₂₂
8	A/TAI/118/87* (EF208777)	TAI87-AD	636	530	0	83.33	16.67	ASIA	Thai-87
9	A/IRN/22/99 (EF208772)	IRN99-22	636	524	0	82.39	17.61	ASIA	Iran-99
10	A/IRN/1/96 (EF208771)	IRN96-01	638	525	1	82.29	17.71	ASIA	Iran-96

nt, nucleotides

*, not a WRLFMD reference number

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Report on FMDV A in Turkey in 2010

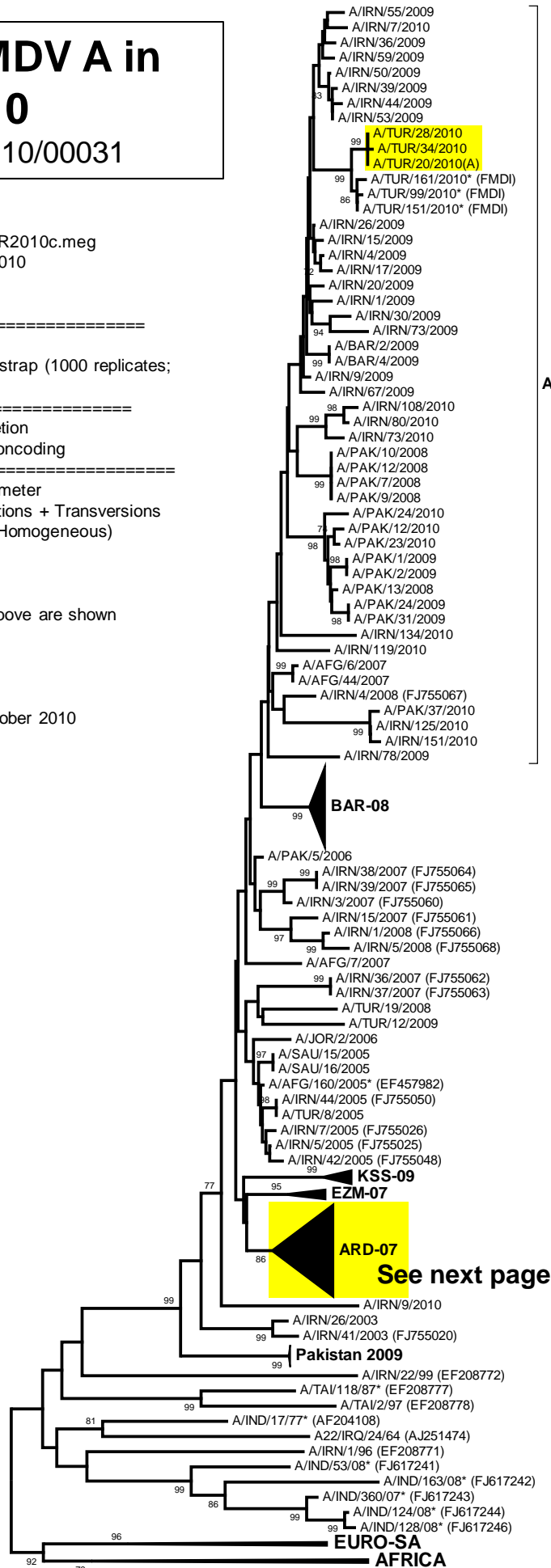
Batch: WRLFMD/2010/00031

Software: MEGA 4.0
 No. of Taxa : 199
 Data File : n:\levd\meg\db\fmdv\A\tUR2010c.meg
 Data Title : A Turkey and Pakistan 2010
 Data Type : Nucleotide (Coding)
 Analysis : Phylogeny reconstruction
 Tree Inference : =====
 ->Method : Neighbor-Joining
 ->Phylogeny Test and options : Bootstrap (1000 replicates; seed=24054)
 Include Sites : =====
 ->Gaps/Missing Data : Pairwise Deletion
 ->Codon Positions : 1st+2nd+3rd+Noncoding
 Substitution Model : =====
 ->Model : Nucleotide: Kimura 2-parameter
 ->Substitutions to include : d: Transitions + Transversions
 ->Pattern among Lineages : Same (Homogeneous)
 ->Rates among sites : Uniform rates
 No. of Sites : 639
 No Of Bootstrap Reps = 1000
 Only bootstrap values of 70% and above are shown

* , not a WRLFMD Ref. No.

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AFG-07

Iran-05

ASIA

Report on FMDV A in Turkey in 2010

Batch: WRLFMD/2010/00031

Software: MEGA 4.0
 No. of Taxa : 199
 Data File : n:\levd\meg\db\fmvd\A\tUR2010c.meg
 Data Title : A Turkey and Pakistan 2010
 Data Type : Nucleotide (Coding)
 Analysis : Phylogeny reconstruction
 Tree Inference : =====
 ->Method : Neighbor-Joining
 ->Phylogeny Test and options : Bootstrap (1000 replicates;
 seed=24054)
 Include Sites : =====
 ->Gaps/Missing Data : Pairwise Deletion
 ->Codon Positions : 1st+2nd+3rd+Noncoding
 Substitution Model : =====
 ->Model : Nucleotide: Kimura 2-parameter
 ->Substitutions to Include : d: Transitions + Transversions
 ->Pattern among Lineages : Same (Homogeneous)
 ->Rates among sites : Uniform rates
 No. of Sites : 639
 No Of Bootstrap Reps = 1000
 Only bootstrap values of 70% and above are shown

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