

Diagnosing the novel SARS-CoV-2 by quantitative RT-PCR: variations and opportunities

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Table 1 Genome sequences of the novel coronavirus (SARS-CoV2) deposited at the GenBank by March 22, 2020

GenBank	RefSeq	Gene Region	Collection Date	Location
MN908947	NC_045512	complete	2019-12	China
MT019529		complete	23/12/19	China: Wuhan
LR757998		complete	26/12/19	China: Wuhan
MN996527		complete	30/12/19	China: Wuhan
MN996528		complete	30/12/19	China: Wuhan
MN996529		complete	30/12/19	China: Wuhan
MN996530		complete	30/12/19	China: Wuhan
MN996531		complete	30/12/19	China: Wuhan
MT019530		complete	30/12/19	China: Wuhan
MT019531		complete	30/12/19	China: Wuhan
MT019532		complete	30/12/19	China: Wuhan
LR757997		complete, gapped	31/12/19	China: Wuhan
LC529905		complete	2020-01	Japan
MN938385		RdRP	2020-01	China: Shenzhen
MN938386		RdRP	2020-01	China: Shenzhen
MN938387		S	2020-01	China: Shenzhen
MN938388		S	2020-01	China: Shenzhen
MN938389		S	2020-01	China: Shenzhen
MN938390		S	2020-01	China: Shenzhen
MN975263		RdRP	2020-01	China
MN975264		RdRP	2020-01	China

GenBank	RefSeq	Gene Region	Collection Date	Location
MN975265		RdRP	2020-01	China
MN975266		S	2020-01	China
MN975267		S	2020-01	China
MN975268		S	2020-01	China
MT008022		M	2020-01	Italy: Rome
MT008023		M	2020-01	Italy: Rome
MT039890		complete	2020-01	South Korea
MT042773		RdRp	2020-01	China: Wuhan
MT042774		RdRp	2020-01	China: Wuhan
MT042775		RdRp	2020-01	China: Wuhan
MT042776		RdRp	2020-01	China: Wuhan
MT042777		RdRp	2020-01	China: Wuhan
MT042778		RdRp	2020-01	China: Wuhan
MT050414		RdRP	2020-01	Australia: QLD
MT050415		RdRP	2020-01	Australia: QLD
MT050416		RdRP	2020-01	Australia: QLD
MT050417		RdRP	2020-01	Australia: QLD
LR757996		complete	01/01/20	China: Wuhan
MT019533		complete	01/01/20	China: Wuhan
MN988668		complete	02/01/20	China
MN988669		complete	02/01/20	China
LR757995		complete	05/01/20	China: Wuhan
LC523807		N	06/01/20	Philippines
MN970003		RdRP	08/01/20	Thailand
MT093631		complete	08/01/20	China
MN938384		complete	10/01/20	China: Shenzhen
MN975262		complete	11/01/20	China
MN970004		RdRP	13/01/20	Thailand
MT072688		complete	13/01/20	Nepal
MT049951		complete	17/01/20	China: Yunnan
MN985325		complete	19/01/20	USA: WA
MT039873		complete	20/01/20	China: Hangzhou
MT226610		complete	20/01/20	China
MN988713		complete	21/01/20	USA: IL
MN994468		complete	22/01/20	USA: CA
MN997409		complete	22/01/20	USA: AZ
MT081059		N	22/01/20	China: HuaShang
MT192772		complete	22/01/20	Viet Nam: Ho Chi Minh city
MT192773		complete	22/01/20	Viet Nam: Ho Chi Minh city
LC523809		N	23/01/20	Philippines
MN994467		complete	23/01/20	USA: CA
MT081060		N	23/01/20	China: HuaShang

GenBank	RefSeq	Gene Region	Collection Date	Location
MT081061		N	23/01/20	China: HuaShang
MT066157		RdRp	24/01/20	Malaysia
MT066158		RdRp	24/01/20	Malaysia
MT066159		RdRp	24/01/20	Malaysia
MT007544		complete	25/01/20	Australia: Victoria
MT020880		complete	25/01/20	USA: WA
MT020881		complete	25/01/20	USA: WA
MT081062		N	25/01/20	China: HuaShang
MT192759		complete	25/01/20	Taiwan
LC522350		RdRP	26/01/20	Philippines
LC523808		N	26/01/20	Philippines
MT081063		N	26/01/20	China: HuaShang
MT135041		complete	26/01/20	China: Beijing
MT044258		complete	27/01/20	USA: CA
MT123292		complete	27/01/20	China: Guangzhou
MT044257		complete	28/01/20	USA: IL
MT081064		N	28/01/20	China: HuaShang
MT135042		complete	28/01/20	China: Beijing
MT135043		complete	28/01/20	China: Beijing
MT135044		complete	28/01/20	China: Beijing
MT020781		complete, gapped	29/01/20	Finland
MT027062		complete	29/01/20	USA: CA
MT027063		complete	29/01/20	USA: CA
MT027064		complete	29/01/20	USA: CA
MT039888		complete	29/01/20	USA: MA
MT123291		complete	29/01/20	China: Guangzhou
MT123293		complete	29/01/20	China: Guangzhou
MT066156		complete	30/01/20	Italy
MT081065		N	30/01/20	China: HuaShang
MT081066		N	30/01/20	China: HuaShang
MT039887		complete	31/01/20	USA: WI
MT050493		complete	31/01/20	India: Kerala State
MT066175		complete	31/01/20	Taiwan
MT081067		N	31/01/20	China: HuaShang
MT111895		NSP3	2020-02	Australia: QLD
MT111896		ORF3a/E	2020-02	Australia: QLD
MT121215		complete	02/02/20	China: Shanghai
MT072667		nsp1-nsp2	03/02/20	Belgium
MT072668		RdRp	03/02/20	Belgium
MT066176		complete	05/02/20	Taiwan
MT123290		complete	05/02/20	China: Guangzhou
MT081068		N	06/02/20	China: HuaShang
MT106052		complete	06/02/20	USA: CA
MT093571		complete	07/02/20	Sweden

GenBank	RefSeq	Gene Region	Collection Date	Location
MT186677		N	09/02/20	Iran: Qum
MT186678		N	09/02/20	Iran: Tehran
LC528232		complete	10/02/20	Japan
LC528233		complete	10/02/20	Japan
MT106053		complete	10/02/20	USA: CA
MT127113		Exo	10/02/20	Viet Nam
MT127114		ORF8-N	10/02/20	Viet Nam
MT127115		ORF3a-ORF7a	10/02/20	Viet Nam
MT127116		RdRp	10/02/20	Viet Nam
MT106054		complete	11/02/20	USA: TX
MT159705		complete	17/02/20	USA
MT159706		complete	17/02/20	USA
MT159707		complete	17/02/20	USA
MT159708		complete	17/02/20	USA
MT159710		complete	17/02/20	USA
MT159717		complete	17/02/20	USA
MT184911		complete	17/02/20	USA
MT184912		complete	17/02/20	USA
MT186680		N	17/02/20	Iran
MT159713		complete	18/02/20	USA
MT159714		complete	18/02/20	USA
MT159718		complete	18/02/20	USA
MT159719		complete	18/02/20	USA
MT184907		complete	18/02/20	USA
MT184910		complete	18/02/20	USA
MT159709		complete	20/02/20	USA
MT159711		complete	20/02/20	USA
MT159720		complete	21/02/20	USA
MT159721		complete	21/02/20	USA
MT159722		complete	21/02/20	USA
MT184908		complete	21/02/20	USA
MT184909		complete	21/02/20	USA
MT118835		complete	23/02/20	USA: CA
MT152824		complete	24/02/20	USA: WA
MT159715		complete	24/02/20	USA
MT159716		complete	24/02/20	USA
MT184913		complete	24/02/20	USA
MT159712		complete	25/02/20	USA
MT152900		nsp1-nsp2	26/02/20	Iran
MT232869		RdRp	26/02/20	Iran
MT232870		RdRp	26/02/20	Iran
MT232871		S	26/02/20	Iran
MT232872		S	26/02/20	Iran
MT233520		complete, gapped	26/02/20	Spain: Valencia

GenBank	RefSeq	Gene Region	Collection Date	Location
MT012098		complete	27/02/20	India: Kerala State
MT159778		RdRP	27/02/20	Nigeria: Lagos
MT163716		complete	27/02/20	USA: WA
MT233519		complete	27/02/20	Spain: Valencia
MT233521		complete, gapped	27/02/20	Spain: Valencia
MT126808		complete	28/02/20	Brazil
MT163717		complete	28/02/20	USA: WA
MT186681		N	28/02/20	Iran: Tehran
MT186682		N	28/02/20	Iran: Tehran
MT163712		nsp14	29/02/20	Iran
MT163714		N	29/02/20	India
MT163715		N	29/02/20	India
MT163718		complete	29/02/20	USA: WA
MT163737		nsp1-nsp2	29/02/20	Iran
MT163738		nsp1-nsp2	29/02/20	Iran
MT187977		N	2020-03	Italy: Cagliari
MT163719		complete	01/03/20	USA: WA
MT163720		near complete	01/03/20	USA: WA
MT163721		near complete	01/03/20	USA: WA
MT233522		complete	02/03/20	Spain: Valencia
MT186676		N	03/03/20	Iran: Tehran
MT198651		near complete	04/03/20	Spain: Valencia
MT233523		complete	04/03/20	Spain: Valencia
MT240479		complete	04/03/20	Pakistan: Gilgit
MT161607		UTR	05/03/20	Italy
MT186679		N	05/03/20	Iran: Tehran
MT188341		complete	05/03/20	USA: MN
MT198652		near complete	05/03/20	Spain: Valencia
MT192758		N	06/03/20	Italy: Cagliari
MT188340		complete	07/03/20	USA: MN
MT198653		near complete	08/03/20	Spain: Valencia
MT188339		complete	09/03/20	USA: MN
MT192765		complete	11/03/20	USA: CA
MT246454		complete	12/03/20	USA: WA
MT246455		complete	12/03/20	USA: WA
MT246457		complete	12/03/20	USA: WA
MT246458		complete	12/03/20	USA: WA
MT246459		complete	12/03/20	USA: WA
MT246460		complete	12/03/20	USA: WA
MT246472		complete	12/03/20	USA: WA
MT246449		complete	13/03/20	USA: WA
MT246450		complete	13/03/20	USA: WA
MT246451		complete	13/03/20	USA: WA
MT246452		complete	13/03/20	USA: WA

GenBank	RefSeq	Gene Region	Collection Date	Location
MT246453		complete	13/03/20	USA: WA
MT246456		complete	13/03/20	USA: WA
MT246461		complete	13/03/20	USA: WA
MT246462		complete	13/03/20	USA: WA
MT246463		complete, gapped	13/03/20	USA: WA
MT246464		complete	13/03/20	USA: WA
MT246465		complete, gapped	13/03/20	USA: WA
MT246466		complete	13/03/20	USA: WA
MT246470		complete	13/03/20	USA: WA
MT246475		complete	13/03/20	USA: WA
MT246476		complete	13/03/20	USA: WA
MT246479		complete	13/03/20	USA: WA
MT246480		complete	13/03/20	USA: WA
MT246481		complete	13/03/20	USA: WA
MT246467		complete	14/03/20	USA: WA
MT246468		complete	14/03/20	USA: WA
MT246469		complete	14/03/20	USA: WA
MT246471		complete	14/03/20	USA: WA
MT246473		complete	14/03/20	USA: WA
MT246474		complete	14/03/20	USA: WA
MT246477		complete	14/03/20	USA: WA
MT246478		complete	14/03/20	USA: WA
MT246486		complete	14/03/20	USA: WA
MT246488		complete	14/03/20	USA: WA
MT246489		complete	14/03/20	USA: WA
MT246482		complete	15/03/20	USA: WA
MT246483		complete, gapped	15/03/20	USA: WA
MT246484		complete	15/03/20	USA: WA
MT246485		complete	15/03/20	USA: WA
MT246487		complete	15/03/20	USA: WA
MT246490		complete	15/03/20	USA: WA