

VSM01 Stability - Report on the effect of virus preservation experiment



一、Objective of the experiment

The stability of VSM01 disposable virus sampling tube was tested. The real-time virus preservation in each stage was tested

二、Materials and methods

2.1 GX - P2V virus

GX-P2V is a coronavirus isolated from pangolins. The amino acid sequence of GX-P2V is more than 90% homology with novel coronavirus, and the S protein homology of GX-P2V and novel coronavirus is 92.2%. The relationship between GX-P2V and novel coronavirus is better than that of SARS virus. The virus titer was 105pfu/mL.

2.2 Experimental Methods

1. In three batches of disposable virus sample tubes 19011831-02, 19011931-02 and 19012131-02, 100 samples were randomly selected from each batch and stored at 23 ° C at room temperature. Tests were carried out on day 0, 120, 300, 480, 600 and 720, respectively.
2. Take three of each batch of sample tubes and label them as A, B and C; A and B performed virus test according to steps 3-7. C used A pH meter to record the initial pH value and compared the pH changes of the storage solution in different months.
3. Add 1mL GX-P2V (MOI=0.01) in 56°C water bath and heat for 30min to inactivate the virus;
4. Takara kit was used to extract the supernatant nucleic acid from the mixture of 200μL, and real-time quantitative PCR was performed. Marked as timely detection;
5. Store at 23°C for 24h, 48h, 72h and 96h, and repeat Step 3;
6. 4°C storage for 24h, 72h, 120h, 168h, repeat step 3;
7. Compare the change of virus CT value;

三、the results

When stored at room temperature for 0, 120, 300, 480, 600 and 720 days, the CT value of the virus fluctuated between 20 and 22, indicating good stability for virus preservation and good compatibility with subsequent PCR amplification reagents.

四、Raw data

2019. 1. 23			CT value								
				Stored at 23℃				Stored at 4℃			
MODEL	Lot No.	No.	real-time	24h	48h	72h	96h	24h	72h	120h	168h
VSM01	190118 31-02	1A	20.47	21.21	20.39	21.07	25.18	21.97	20.79	20.79	20.11
		1B	21.54	21.92	21.83	20.36	25.67	21.64	21.84	20.98	21.46
		C-pH	7.41	/	/	/	/	/	/	/	/
	190119 31-02	2A	20.92	20.91	20.46	21.14	25.99	20.75	20.94	21.21	20.84
		2B	20.93	21.15	20.63	20.22	25.54	20.85	21.16	21.81	20.32
		C-pH	7.41	/	/	/	/	/	/	/	/
	190121 31-02	3A	20.61	20.77	19.97	20.89	24.86	21.75	19.97	20.18	20.44
		3B	20.84	20.56	20.26	21.76	25.7	21.74	20.18	21.82	20.84
		C-pH	7.42	/	/	/	/	/	/	/	/
inspector	Xinlei Chen	Test date	2019.1.23	2019.1.24	2019.1.25	2019.1.26	2019.1.27	2019.1.23	2019.1.25	2019.1.27	2019.1.29
2019. 5. 23			CT value								
				Stored at 23℃				Stored at 4℃			
MODEL	Lot No.	No.	real-time	24h	48h	72h	96h	24h	72h	120h	168h
VSM01	190118 31-02	1A	21.33	20.54	20.38	20.8	23.41	21.41	20.34	20.39	20.23
		1B	21.6	21.58	20.51	20.68	22.14	21.76	21.18	21.17	21.04

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		C-pH	7.41	/	/	/	/	/	/	/	/
	190119 31-02	2A	21.67	20.21	20.94	20.62	24.16	21.08	20.79	20.21	20.13
		2B	21.04	21.85	21.07	20.31	22.62	21.87	20.54	20.5	20.22
		C-pH	7.41	/	/	/	/	/	/	/	/
	190121 31-02	3A	21.53	20.87	20.24	20.91	23.16	20.99	21.3	21.66	21.13
		3B	21.16	20.01	21.1	20.28	23.02	21.38	20.36	21.14	20.88
		C-pH	7.42	/	/	/	/	/	/	/	/
inspector	Xinlei Chen	Test date	2019.5.23	2019.5.24	2019.5.25	2019.5.26	2019.5.27	2019.5.24	2019.5.26	2019.5.28	2019.5.30
2019.11.23			CT value								
				Stored at 23℃				Stored at 4℃			
MODEL	Lot No.	No.	real-time	24h	48h	72h	96h	24h	72h	120h	168h
VSM01	190118 31-02	1A	20.09	20.83	20.43	20.35	24.6	20.25	21.64	21.27	20.67
		1B	21.29	21.79	21.05	20.61	22.42	20.25	20.34	20.52	21.12
		C-pH	7.42	/	/	/	/	/	/	/	/
	190119 31-02	2A	21.74	20.53	21.27	20.72	24.09	21.41	21.22	20.71	21.16
		2B	20.4	20.9	21.82	20.79	24.86	21.76	20.89	20.25	20.73
		C-pH	7.41	/	/	/	/	/	/	/	/
	190121 31-02	3A	20.03	21.78	20.72	20.87	24.47	20.99	20.75	20.34	21.33
		3B	20.99	19.96	21.4	20.2	22.21	21.3	21.47	20.2	20.08
		C-pH	7.41	/	/	/	/	/	/	/	/
inspector	Xinlei Chen	Test date	2019.11.23	2019.11.24	2019.11.25	2019.11.26	2019.11.27	2019.11.24	2019.11.26	2019.11.28	2019.11.30
2020.5.21			CT value								
				Stored at 23℃				Stored at 4℃			

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MODEL	Lot No.	No.	real-time	24h	48h	72h	96h	24h	72h	120h	168h
VSM01	190118 31-02	1A	21.2	20.76	21.07	20.22	23.55	20.06	21.73	21.26	20.25
		1B	20.49	20.9	21.78	21.02	23.85	20.9	20.64	21.59	20.63
		C-pH	7.42	/	/	/	/	/	/	/	/
	190119 31-02	2A	21.01	20.09	21.83	20.31	22.44	21.44	21.54	21.5	20.49
		2B	20.29	20.96	20.09	20.2	22.24	21.76	21.51	20.08	20.21
		C-pH	7.42	/	/	/	/	/	/	/	/
	190121 31-02	3A	21	20.75	21.06	20.79	22.76	20.57	20.96	21.47	21.59
		3B	20.87	20.44	20.58	20.08	23.04	20.98	21.75	20.76	21.02
		C-pH	7.41	/	/	/	/	/	/	/	/
Inspector	Xinlei Chen	Test date	2020.5.21	2020.5.22	2020.5.23	2020.5.24	2020.5.25	2020.5.21	2020.5.23	2020.5.25	2020.5.27
2020.9.24			CT value								
				Stored at 23℃				Stored at 4℃			
MODEL	Lot No.	No.	real-time	24h	48h	72h	96h	24h	72h	120h	168h
VSM01	190118 31-02	1A	21.46	21.38	20.05	20.9	23	21.96	20.06	20.65	21.51
		1B	20.54	20.38	21.31	20.81	23.77	21.24	21.81	19.96	21.86
		C-pH	7.42	/	/	/	/	/	/	/	/
	190119 31-02	2A	20.55	20.75	20.41	20.64	23.29	21.28	21.76	21.42	21.8
		2B	21.14	21.77	20.69	20.57	23.27	20.85	20.59	21.45	21.85
		C-pH	7.42	/	/	/	/	/	/	/	/
	190121 31-02	3A	21.4	20.44	20.5	20.37	23.24	20.76	20.01	21.57	21.02
		3B	20.15	20.6	21.4	21.1	23.33	19.99	20.43	21.42	20.64
		C-pH	7.41	/	/	/	/	/	/	/	/

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inspector	Xinlei Chen	Test date	2020.9.24	2020.9.25	2020.9.26	2020.9.27	2020.9.28	2020.9.24	2020.9.26	2020.9.28	2020.9.30
2021.1.24			CT value								
				Stored at 23℃				Stored at 4℃			
MODEL	Lot No.	No.	real-time	24h	48h	72h	96h	24h	72h	120h	168h
VSM01	190118 31-02	1A	20.92	21.26	21.89	21.08	24.63	20.1	21.07	21.62	19.99
		1B	20.28	21.84	21.08	20.79	22.62	20.39	21.88	20.89	20.89
		C-pH	7.41	/	/	/	/	/	/	/	/
	190119 31-02	2A	20.19	20.99	20.9	20.16	24.97	20.5	21.57	21.2	21.08
		2B	20.15	20.33	21.58	20.17	23.98	21	21.74	20.51	21.1
		C-pH	7.41	/	/	/	/	/	/	/	/
	190121 31-02	3A	20.37	21.75	20.45	20.59	24.83	20.92	20.97	21.88	20.45
		3B	20.79	21.73	21.09	20.21	22.94	21.82	21.55	20.82	20.91
		C-pH	7.41	/	/	/	/	/	/	/	/
inspector	Xinlei Chen	Test date	2021.1.24	2021.1.25	2021.1.26	2021.1.27	2021.1.28	2021.1.24	2021.1.26	2021.1.28	2021.1.30