

Supplementary

Table S1 The primers for testing different short-length targets of hepatitis B virus

Primer	Sequence	Product length (bp)
70F	5'-CCCCAACCTCCAATCACTCA-3'	70
70R	5'-CGCAGACACATCCAGCGATAAC-3'	
100F	5'-CCCCAACCTCCAATCACTCA-3'	100
100R	5'-AGCAGGATGAAGAGGAAGATGATAAA-3'	
150F	5'-CCCCAACCTCCAATCACTCA-3'	150
150R	5'-GCAACATACCTTGGTAGTCCAGAAG-3'	
180F	5'-CCCCAACCTCCAATCACTCA-3'	180
180R	5'-TTGATGTTCTGGAAGTAGAGGACA-3'	

Table S2 Clinical data set

Study site	Specimen ID	Standard test (Ct value)			Rapid test (Ct value)		
		ORF-FAM	N-VIC	RNaseP-ROX	ORF-FAM	N-VIC	RNaseP-ROX
Kingmed Virology Diagnostic & Translational Center	2058	N	N	30.25	N	N	29.99
Kingmed Virology Diagnostic & Translational Center	2076	N	N	27.59	N	N	28.01
Kingmed Virology Diagnostic & Translational Center	2080	N	N	29.06	N	N	28.68
Kingmed Virology Diagnostic & Translational Center	0039	N	N	23.71	N	N	23.59
Kingmed Virology Diagnostic & Translational Center	0256	N	N	28.5602	N	N	28.77
Kingmed Virology Diagnostic & Translational Center	0368	30.7724	32.2626	29.0547	28.84	30.42	27.68
Kingmed Virology Diagnostic & Translational Center	0626	N	N	27.0702	N	N	26.97
Kingmed Virology Diagnostic & Translational Center	0785	34.4204	32.8372	28.0507	29.64	31.58	27.64
Kingmed Virology Diagnostic & Translational Center	0981	N	N	23.569	N	35.05	23.08
Kingmed Virology Diagnostic & Translational Center	1051	N	N	25.01	N	N	25.61
Kingmed Virology Diagnostic & Translational Center	1267	N	N	24.6382	N	N	24.45
Kingmed Virology Diagnostic & Translational Center	1302	N	N	33.07	N	N	32.94
Kingmed Virology Diagnostic & Translational Center	1330	N	N	31.42	N	N	32.35
Kingmed Virology Diagnostic & Translational Center	1339	N	N	24.68	N	N	24.55
Kingmed Virology Diagnostic & Translational Center	1347	N	N	30	N	N	28.76
Kingmed Virology Diagnostic & Translational Center	1349	N	N	31	N	N	31.57
Kingmed Virology Diagnostic & Translational Center	1350	N	N	30.84	N	N	32.35
Kingmed Virology Diagnostic & Translational Center	1511	N	N	24.4301	N	N	24.56
Kingmed Virology Diagnostic & Translational Center	1634	21.8848	22.4908	25.5038	21.45	21.75	24.08
Kingmed Virology Diagnostic & Translational Center	1720	31.1272	31.3291	27.0922	28.49	29.68	26.75
Kingmed Virology Diagnostic & Translational Center	2001	N	N	24.0217	N	N	24.08

Table S2 (continued)

Table S2 (continued)

Study site	Specimen ID	Standard test (Ct value)			Rapid test (Ct value)		
		ORF-FAM	N-VIC	RNaseP-ROX	ORF-FAM	N-VIC	RNaseP-ROX
Kingmed Virology Diagnostic & Translational Center	2625	N	N	38.55	N	N	38.57
Kingmed Virology Diagnostic & Translational Center	2824	N	N	25.5307	N	N	25.15
Kingmed Virology Diagnostic & Translational Center	3126	N	N	27.08	N	N	26.88
Kingmed Virology Diagnostic & Translational Center	3127	N	N	24.01	N	N	24.07
Kingmed Virology Diagnostic & Translational Center	3129	N	N	30.88	N	N	31.09
Kingmed Virology Diagnostic & Translational Center	3131	N	N	29.55	N	N	29.75
Kingmed Virology Diagnostic & Translational Center	3163	21.1649	21.7023	24.3058	20.27	21.36	24.04
Kingmed Virology Diagnostic & Translational Center	3601	30.0297	31.2377	29.5401	29.35	30.53	29.76
Kingmed Virology Diagnostic & Translational Center	3602	28.1562	29.2478	27.9538	28.16	28.78	28.17
Kingmed Virology Diagnostic & Translational Center	4012	N	N	27.12	N	N	27.08
Kingmed Virology Diagnostic & Translational Center	4907	N	N	31.38	N	N	29.93
Kingmed Virology Diagnostic & Translational Center	4909	N	N	31.89	N	N	30.28
Kingmed Virology Diagnostic & Translational Center	4910	N	N	34.16	N	N	33.05
Kingmed Virology Diagnostic & Translational Center	4913	N	N	28.94	N	N	29.68
Kingmed Virology Diagnostic & Translational Center	4915	N	N	30.44	N	N	30.09
Kingmed Virology Diagnostic & Translational Center	4916	N	N	28.01	N	N	28.48
Kingmed Virology Diagnostic & Translational Center	4918	N	N	33.69	N	N	32.23
Kingmed Virology Diagnostic & Translational Center	4919	N	N	34.04	N	N	33.6
Kingmed Virology Diagnostic & Translational Center	4930	N	N	32.07	N	N	31.41
Kingmed Virology Diagnostic & Translational Center	4931	N	N	32.13	N	N	31.88
Kingmed Virology Diagnostic & Translational Center	4966	N	N	28.11	N	N	27.97
Kingmed Virology Diagnostic & Translational Center	4969	N	N	33.99	N	N	32.99
Kingmed Virology Diagnostic & Translational Center	4975	N	N	24.26	N	35.05	24.18
Kingmed Virology Diagnostic & Translational Center	4978	N	N	26.7	30.73	31.21	26.67
Kingmed Virology Diagnostic & Translational Center	4979	N	N	28.01	29.14	29.04	28.21
Kingmed Virology Diagnostic & Translational Center	5008	N	N	34.5	N	N	32.72
Kingmed Virology Diagnostic & Translational Center	5021	N	N	32	N	N	32.54
Kingmed Virology Diagnostic & Translational Center	5114	37.8318	37.11	28.467	35.02	35.21	27.96
Kingmed Virology Diagnostic & Translational Center	5690	36.3512	38.5019	25.9051	35.22	34.75	25.06
Kingmed Virology Diagnostic & Translational Center	5994	N	N	24.1576	N	35.05	24.08
Kingmed Virology Diagnostic & Translational Center	6006	31.9231	31.7357	26.6449	30.73	31.21	26.67
Kingmed Virology Diagnostic & Translational Center	6402	30.5918	29.6801	28.0058	29.14	29.04	28.22
Kingmed Virology Diagnostic & Translational Center	6691	N	N	29.1053	N	N	28.81
Kingmed Virology Diagnostic & Translational Center	7077	35.5661	34.5454	25.0367	35.57	34.43	24.49
Kingmed Virology Diagnostic & Translational Center	7166	34.7729	34.747	26.0982	34.97	34.68	25.96

Table S2 (continued)

Table S2 (continued)

Study site	Specimen ID	Standard test (Ct value)			Rapid test (Ct value)		
		ORF-FAM	N-VIC	RNaseP-ROX	ORF-FAM	N-VIC	RNaseP-ROX
Kingmed Virology Diagnostic & Translational Center	7214	N	N	28.98	N	N	29.34
Kingmed Virology Diagnostic & Translational Center	7607	N	N	33.23	N	N	33.5
Kingmed Virology Diagnostic & Translational Center	7614	N	N	34.72	N	N	34.4
Kingmed Virology Diagnostic & Translational Center	7964	32.4226	32.7321	31.3548	31.09	31.87	30.86
Kingmed Virology Diagnostic & Translational Center	7972	N	N	30.69	N	N	32.26
Kingmed Virology Diagnostic & Translational Center	7973	N	N	30.14	N	N	29.69
Kingmed Virology Diagnostic & Translational Center	7974	N	N	30.24	N	N	30.73
Kingmed Virology Diagnostic & Translational Center	7997	N	N	24.1672	N	N	24.26
Kingmed Virology Diagnostic & Translational Center	8075	N	N	28.0525	N	34.93	27.53
Kingmed Virology Diagnostic & Translational Center	8078	N	N	25.9741	N	N	25.91
Kingmed Virology Diagnostic & Translational Center	8194	N	33.9048	23.4963	N	34.68	23.4
Kingmed Virology Diagnostic & Translational Center	8376	N	N	31.81	N	N	28.45
Kingmed Virology Diagnostic & Translational Center	8873	N	N	28.61	N	N	28.29
Kingmed Virology Diagnostic & Translational Center	8877	N	N	33.37	N	N	32.99
Kingmed Virology Diagnostic & Translational Center	8882	N	N	31.07	N	N	31.19
Kingmed Virology Diagnostic & Translational Center	8891	N	N	27.26	N	N	27.18
Kingmed Virology Diagnostic & Translational Center	9027	N	N	30.86	N	N	30.88
Kingmed Virology Diagnostic & Translational Center	9502	N	N	30.55	N	N	29.98
Kingmed Virology Diagnostic & Translational Center	9506	N	N	31.74	N	N	30.59
Kingmed Virology Diagnostic & Translational Center	9511	N	N	28.64	N	N	28.19
Kingmed Virology Diagnostic & Translational Center	9512	N	N	33.34	N	N	32.96
Kingmed Virology Diagnostic & Translational Center	9514	N	N	31.04	N	N	31.16
Kingmed Virology Diagnostic & Translational Center	9515	N	N	27.24	N	N	27.11
Kingmed Virology Diagnostic & Translational Center	9568	38.58	38.644	24.7189	35.05	35.07	25.64
Kingmed Virology Diagnostic & Translational Center	9636	37.7046	N	33.8802	N	34.91	33.47
Kingmed Virology Diagnostic & Translational Center	9694	N	N	27.093	N	N	27.02
Guangzhou Custom Technology Center	Sample 1	23.529	26.018	30.51	25.24	26.49	31.23
Guangzhou Custom Technology Center	Sample 2	24.334	26.729	30.59	24.66	25.93	30.63
Guangzhou Custom Technology Center	Sample 3	24.151	26.608	31.22	24.78	26.16	30.63
Guangzhou Custom Technology Center	Sample 4	23.769	26.509	30.57	26	27.27	31.47
Guangzhou Custom Technology Center	Sample 5	25.221	27.636	30.98	25.58	26.99	30.21
Guangzhou Custom Technology Center	Sample 6	24.810	27.051	30.82	25.18	26.25	30.09
Guangzhou Custom Technology Center	Sample 7	23.804	26.380	30.61	24.56	25.76	30.49
Guangzhou Custom Technology Center	Sample 8	23.421	26.083	30.67	24.56	25.84	30.49
Guangzhou Custom Technology Center	Sample 10	27.644	29.866	31.21	27.85	29.25	30.44

Table S2 (continued)

Table S2 (continued)

Study site	Specimen ID	Standard test (Ct value)			Rapid test (Ct value)		
		ORF-FAM	N-VIC	RNaseP-ROX	ORF-FAM	N-VIC	RNaseP-ROX
Guangzhou Custom Technology Center	Sample 11	27.942	29.872	31.30	28.03	29.39	30.64
Guangzhou Custom Technology Center	Sample 12	27.875	29.964	31.11	27.86	29.45	30.3
Guangzhou Custom Technology Center	Sample 13	27.921	29.861	31.04	27.56	28.86	30.12
Guangzhou Custom Technology Center	Sample 14	27.665	29.682	31.58	27.49	28.65	30.45
Guangzhou Custom Technology Center	Sample 15	28.006	29.918	31.06	27.82	29.08	30.28
Guangzhou Custom Technology Center	Sample 16	27.488	29.783	30.83	28.69	29.73	30.78
Guangzhou Custom Technology Center	Sample 18	17.773	19.649	31.63	18.02	19.15	30.39
Guangzhou Custom Technology Center	Sample 19	19.758	22.644	30.21	21.4	22.42	31.38
Guangzhou Custom Technology Center	Sample 20	23.654	25.976	30.60	26.16	25.19	30.72
Guangzhou Custom Technology Center	Sample 21	25.450	27.670	30.75	27.75	26.96	30.28
Guangzhou Custom Technology Center	Sample 22	27.399	29.304	30.79	19.93	28.63	30
Guangzhou Custom Technology Center	Sample 23	28.919	31.014	31.11	29.93	30.13	30.34
Guangzhou Custom Technology Center	Sample 24	N	N	31.53	N	N	30.93
Guangzhou Custom Technology Center	Sample 26	N	N	22.79	N	N	21.83
Guangzhou Custom Technology Center	Sample 28	28.912	30.013	26.92	27	29.38	25.88
Guangzhou Custom Technology Center	Sample 29	N	N	26.23	N	N	25.24
Guangzhou Custom Technology Center	Sample 31	N	N	26.74	N	N	25.66
Guangzhou Custom Technology Center	Sample 33	N	N	26.57	N	N	25.78
Guangzhou Custom Technology Center	Sample 34	N	38.619	23.35	N	35.22	22.43
Guangzhou Custom Technology Center	Sample 37	N	N	26.85	N	N	26.04
Guangzhou Custom Technology Center	Sample 39	N	N	25.22	N	N	24.34
Guangzhou Custom Technology Center	Sample 40	N	36.996	25.79	N	35.07	24.92
Guangzhou Custom Technology Center	Sample 41	28.254	30.493	30.57	28.66	29.84	30.3
Guangzhou Custom Technology Center	Sample 42	27.949	30.209	30.74	27.98	28.98	30.2
Guangzhou Custom Technology Center	Sample 43	27.979	30.287	30.97	28.25	29.43	30.4
Guangzhou Custom Technology Center	Sample 44	28.971	30.971	31.00	28.47	29.53	30.32
Guangzhou Custom Technology Center	Sample 45	28.587	30.745	31.05	28.42	29.35	30.43
Guangzhou Custom Technology Center	Sample 46	28.537	30.670	31.25	28.68	29.69	30.23
Guangzhou Custom Technology Center	Sample 47	27.954	30.066	30.66	28.64	29.46	30.34
Guangzhou Custom Technology Center	Sample 48	28.635	30.816	30.85	28.85	29.84	30.51
Guangzhou Custom Technology Center	Sample 49	28.309	30.555	31.11	28.47	30.06	30.1
Guangzhou Custom Technology Center	Sample 50	28.393	30.707	30.93	28.54	29.98	30.19
Guangzhou Custom Technology Center	Sample 51	27.976	30.476	31.12	28.4	29.96	30.26
Guangzhou Custom Technology Center	Sample 52	29.174	31.545	31.46	29.25	30.58	30.21
Guangzhou Custom Technology Center	Sample 53	N	N	29.12	N	N	28.43

Table S2 (continued)

Table S2 (continued)

Study site	Specimen ID	Standard test (Ct value)			Rapid test (Ct value)		
		ORF-FAM	N-VIC	RNaseP-ROX	ORF-FAM	N-VIC	RNaseP-ROX
Guangzhou Custom Technology Center	Sample 54	N	N	27.83	N	N	26.97
Guangzhou Custom Technology Center	Sample 55	N	N	27.24	N	N	26.92
Guangzhou Custom Technology Center	Sample 56	N	N	29.83	N	N	29.59
Guangzhou Custom Technology Center	Sample 57	N	N	27.05	N	N	26.82
Guangzhou Custom Technology Center	Sample 58	N	N	30.62	N	N	30.11
Guangzhou Custom Technology Center	Sample 59	N	N	28.19	N	N	27.83
Guangzhou Custom Technology Center	Sample 63	N	N	33.98	N	N	34.02
Guangzhou Custom Technology Center	Sample 64	N	N	28.20	N	N	27.91
Guangzhou Custom Technology Center	Sample 65	N	N	27.11	N	N	26.3
Guangzhou Custom Technology Center	Sample 66	N	N	27.21	N	N	27.05
Guangzhou Custom Technology Center	Sample 67	N	N	27.89	N	N	27.66
Guangzhou Custom Technology Center	Sample 68	N	N	28.98	N	N	29.08
Guangzhou Custom Technology Center	Sample 69	N	N	36.30	N	N	33.99
Guangzhou Custom Technology Center	Sample 70	N	N	27.91	N	N	27.7
Guangzhou Custom Technology Center	Sample 71	N	N	28.12	N	N	27.95
Guangzhou Custom Technology Center	Sample 72	N	N	27.24	N	N	27.04
Guangzhou Custom Technology Center	Sample 74	N	N	31.64	N	N	30.88
Guangzhou Custom Technology Center	Sample 75	N	N	29.19	N	N	28.79
Guangzhou Custom Technology Center	Sample 76	N	N	29.43	N	N	28.89
Guangzhou Custom Technology Center	Sample 77	N	N	28.69	N	N	28.42
Guangzhou Custom Technology Center	Sample 78	N	N	27.97	N	N	27.59
Guangzhou Custom Technology Center	Sample 79	N	N	27.25	N	N	26.71
Guangzhou Custom Technology Center	Sample 80	N	N	24.29	N	N	23.77
Guangzhou Custom Technology Center	Sample 81	N	N	33.52	N	N	32.86
Guangzhou Custom Technology Center	Sample 82	N	N	27.92	N	N	27.28
Guangzhou Custom Technology Center	Sample 83	N	N	25.52	N	N	25.3
Guangzhou Custom Technology Center	Sample 84	N	N	27.02	N	N	26.44
Guangzhou Custom Technology Center	Sample 85	N	N	24.49	N	N	24.14
Guangzhou Custom Technology Center	Sample 86	N	N	25.99	N	N	25.44
Guangzhou Custom Technology Center	Sample 87	N	N	27.58	N	N	27.26
Guangzhou Custom Technology Center	Sample 88	N	N	32.23	N	N	31.48
Guangzhou Custom Technology Center	Sample 90-RSV	N	N	28.22	N	N	27.22
Guangzhou Custom Technology Center	Sample 91-ADV	N	N	30.41	N	N	29.66
Guangzhou Custom Technology Center	Sample 92-OC43	N	N	32.19	N	N	31.82
Guangzhou Custom Technology Center	Sample 93-229E	N	N	32.66	N	N	29.57

Table S2 (continued)

Table S2 (continued)

Study site	Specimen ID	Standard test (Ct value)			Rapid test (Ct value)		
		ORF-FAM	N-VIC	RNaseP-ROX	ORF-FAM	N-VIC	RNaseP-ROX
Guangzhou Custom Technology Center	Sample 94-HKU1	N	N	30.98	N	N	30.56
Guangzhou Custom Technology Center	Sample 95-NL63	N	N	29.29	N	N	29.38
Guangzhou Custom Technology Center	Sample 96-H1N1	N	N	31.70	N	N	31.54
Guangzhou Custom Technology Center	Sample 2-1	N	N	30.19	N	N	29.12
Guangzhou Custom Technology Center	Sample 2-2	N	N	32.22	N	N	32.15
Guangzhou Custom Technology Center	Sample 2-3	N	N	31.90	N	N	30.2
Guangzhou Custom Technology Center	Sample 2-4	N	N	32.01	N	N	31.45
Guangzhou Custom Technology Center	Sample 2-5	23.129	24.052	31.33	21.99	22.59	31.48
Guangzhou Custom Technology Center	Sample 2-6	19.753	20.744	32.30	18.64	19.62	31.3
Guangzhou Custom Technology Center	Sample 2-7	22.897	23.786	31.65	21.48	22.29	31.73
Guangzhou Custom Technology Center	Sample 2-8	24.060	24.923	30.95	22.99	24.12	31.28
Guangzhou Custom Technology Center	Sample 2-9	24.650	25.476	30.94	23.43	24.28	31.23
Guangzhou Custom Technology Center	Sample 2-10	22.674	23.466	31.67	21.95	22.34	32.46
Guangzhou Custom Technology Center	Sample 2-11	23.287	24.023	30.83	23.33	22.81	32.4
Guangzhou Custom Technology Center	Sample 2-12	21.129	22.052	29.33	19.24	20.02	24.88
Guangzhou Custom Technology Center	Sample 2-13	23.507	24.167	31.11	21.74	22.51	30.93
Guangzhou Custom Technology Center	Sample 2-14	27.081	23.783	35.38	25.97	26.89	33.34
Guangzhou Custom Technology Center	Sample 2-15	30.113	30.801	38.70	28.76	29.8	38.9
Guangzhou Custom Technology Center	Sample 2-16	33.406	34.141	27.15	N	N	26.92
Guangzhou Custom Technology Center	Sample 2-17	37.684	36.954	30.63	N	N	30.01
Guangzhou Custom Technology Center	Sample 2-18	38.437	38.623	28.29	N	N	27.93
Guangzhou Custom Technology Center	Sample 2-19	N	N	33.99	N	N	34.01
Guangzhou Custom Technology Center	Sample 2-20	N	N	29.20	N	N	29.91