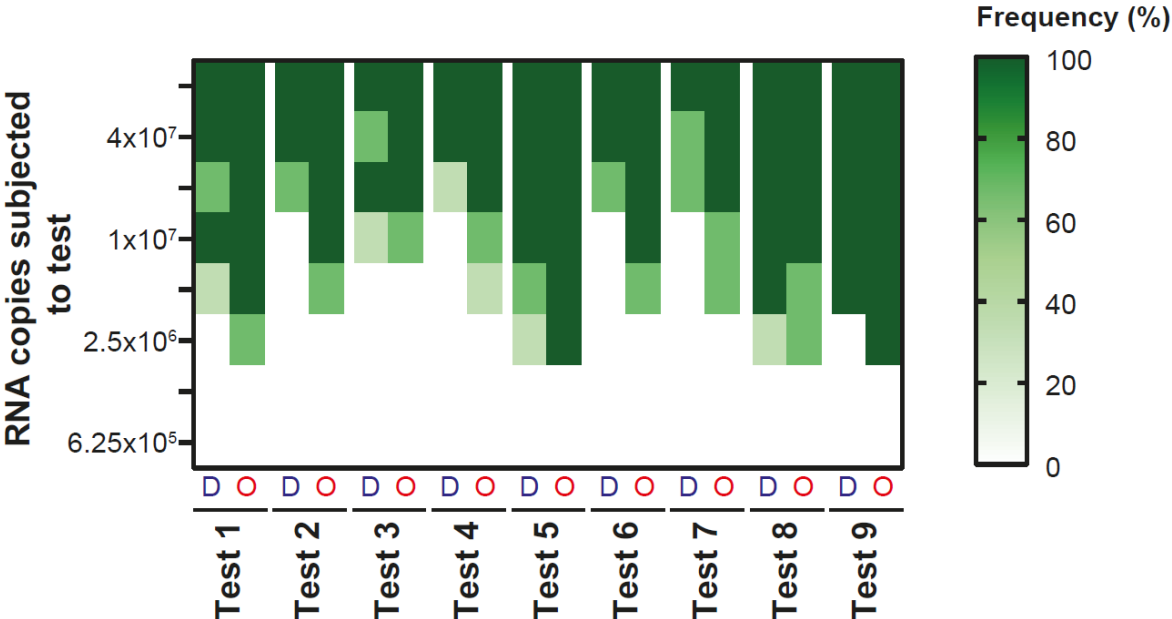


Supplemental Figures



Suppl. Fig. 1 Heat map of analytical sensitivity of nine SARS-CoV-2 RATs for SARS-CoV-2 variants delta and omicron expanded in cell culture. The visual read of triplicate samples were plotted against the calculated viral RNA copies subjected to the test. Dark green: Positive RAT result; Light green: Replicate mixed result; White: Negative RAT result. D: delta; O: omicron.

Supplemental Tables

Suppl. Table 1 Summary of non-synonymous amino acid substitutions in the SARS-CoV-2 nucleocapsid protein with >75% prevalence in publically available VoC sequences compared to the original Wuhan-hu-1 sequence [13].

Amino acid position	D3	P13	DEL31/33	D63	P80	R203	G204	T205	G215	A220	S235	D377	S413
Alpha (B.1.1.7)	L					K	R				F		
Beta (B.1.351)								I					
Gamma (P.1)					R	K	R						
Delta (B.1.617.2)				G		M			C			Y	
Omicron (BA.1)	L	del*				K	R						
Omicron (BA.2)	L	del*				K	R						R

*deletion

Recommended material	Nasopharyngeal swab	Nasal swab	Nasal swab	Nasopharyngeal swab	Nasal swab	Nasal swab	Nasopharyngeal swab	Nasal swab	Nasal swab
PEI evaluated (31.01.22)	yes (as professional test)	yes (as self-test)	yes [§]	yes (as self-test)	yes (as self-test)	yes* (as professional test)	yes* (as self-test)	yes (as professional test)	no
Intended by the manufacturer for self-testing ("self-tests")	no - intended for professional use ("rapid tests")	yes	yes	yes	yes	yes	yes	yes	yes
Manufacturer Sensitivity	94%	95,37%	97,33%	relative: 96.72%	95%	97,20%	93,75	96,19%	96,19%
Manufacturer Specificity	100%	99,13%	99,33%	relative: 99.22%	99%	100%	98,04	99,20%	99,20%
Manufacturer Limit of detection [TCID ₅₀]	1.1 x 10 ² TCID ₅₀ /ml	-	30 TCID ₅₀ /ml	1.15 x10 ² TCID ₅₀ /ml	0.5ng/ml	-	1.3 x10 ² TCID ₅₀ /ml 1ng/ml	-	1.3 x10 ² TCID ₅₀ /ml 1ng/ml

*listed in the "SARS-CoV-2 antigen rapid diagnostic tests passing the sensitivity criteria" of the Paul-Ehrlich-Institute (date of access: 31.1.22) with different reference Nos. ^{§ [30]}

Suppl. Table 3 Determination of assay specificities for nine SARS-CoV-2 RATs using SARS-CoV-2 PCR-negative respiratory swabs

Assay	Specificity (%)	95% CI (%)			True negative / total		
Test 1	100	96.71	-	100	113	/	113
Test 2	100	96.74	-	100	114	/	114
Test 3	100	96.74	-	100	114	/	114
Test 4	100	96.65	-	100	111	/	111
Test 5	100	96.77	-	100	115	/	115
Test 6	100	96.34	-	100	101	/	101
Test 7	100	96.74	-	100	114	/	114
Test 8	100	96.74	-	100	114	/	114
Test 9	100	96.53	-	100	107	/	107

Binomial confidence intervals were computed using the Wilson score interval