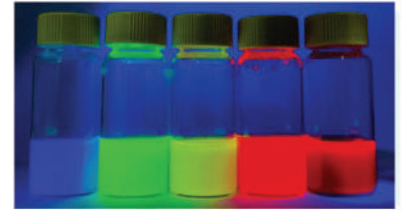
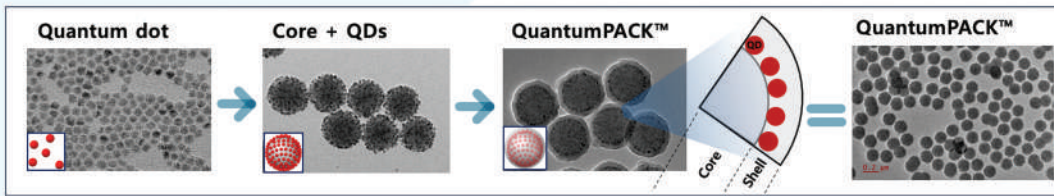


Precision & Multiplex Platform Creator

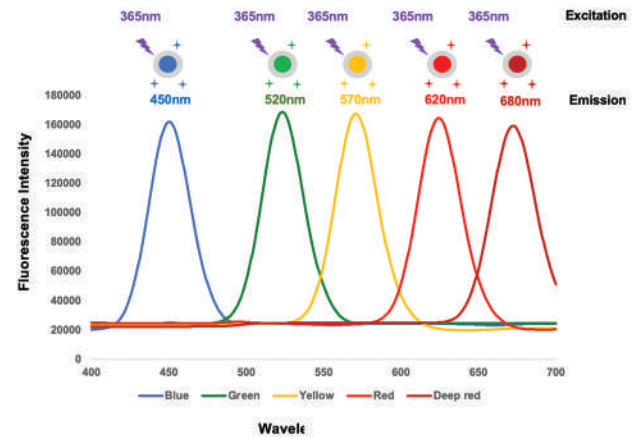
QuantumPACK™ TECHNOLOGY



Although QD technology has garnered widespread interest in diagnostic applications, biological applications development was stalled due to inherent biochemical stability issues. QuantumPACK™ technology solves this issue with a patented silica shell coating, imbuing QDs with a never-before-seen biochemical stability and solubility

QuantumPACK™ CHARACTERISTICS

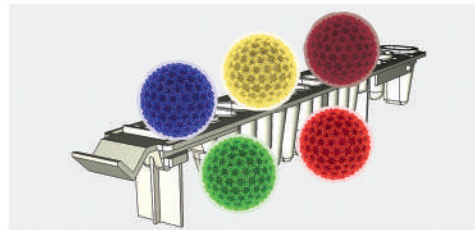
- Very bright fluorescence
- Easily tunable particle size
- Easy surface treatment of nanoparticles
- Simple optics for multiplex detection
- No photobleaching
- Mass production possible



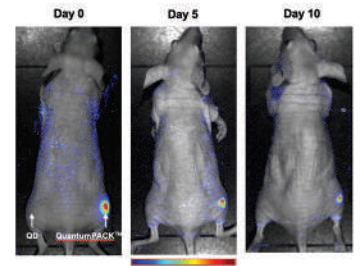
APPLICATIONS



Lateral flow assay (RDT)



Automated FIA



Bioimaging

INSTRUMENTS (for RDT)

QDITS™

- 3rd Gen POCT
- High Accuracy
- Apply data algorithm
- Easy to use



QDITS™

Flexible workflow : 2 mode configuration
Connectivity : LIS/HIS

Fast scan time : within 5 seconds



QDITS™ Smart

Unlimited portability : batteries can be used compact size



QDITS™ Mini

Super Simple : Boot and ready Insert and result

Potability

Multifunctional

QDITS™

	QDITS™	QDITS™ Smart	QDITS™ Mini
Throughput*	360	360	180
Display	7.0" Touch	4.3" Touch	1.44"
Printer	Inbuild	External(Optional)	External(Optional)
Dimensions(mm)	173x 250 x 228	130 x 135x 80	56 x 76 x 70
Power	AC/DC Adapter	Adapter&Batteries	Adapter&Batteries

*Test/hr, based on quick mode

QuantumPACK™ Easy Influenza A+B

CE IVD

Cat No. 31ED40

Package 20 Tests/kit



COMPONENTS



Test device	20 ea	Sterile swab	10 ea x 2
Assay diluent	10 ea x 2	Tube rack	2 ea
Nozzle Cap	10 ea x 2	Control swab	1 ea (each)

DEDICATED INSTRUMENTS



✓ Easy to Use

Automatic analysis of test results with QDITS™ Series
Compatible with viral transport media

✓ Fast Results

Reaction completed in 10min
Fast scan times in less than 5s

✓ High Performance

QuantumPACK™ technology is applied
Can detect various influenza strains (19 strains confirmed)

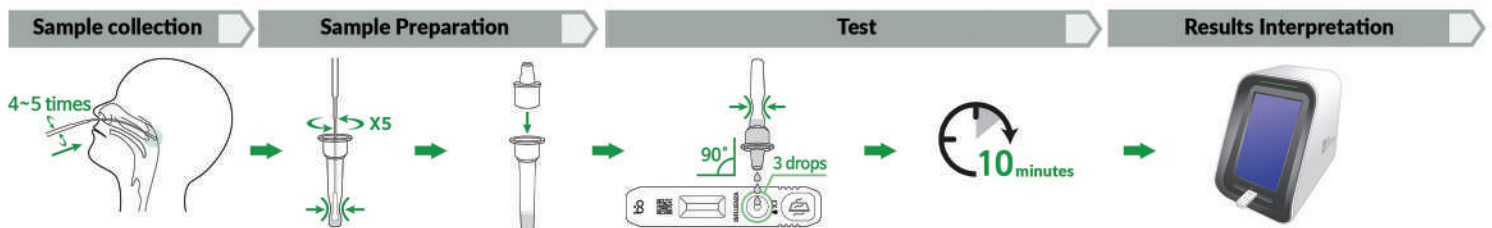
✓ Excellent Quality

Data algorithm is applied to each lot including control swab for QC

Validated influenza strains

A/Texas/1977	A/Brisbane/59/2007	A/Victoria/210/2009	B/Phuket/3073/2013
A/New Caledonia/20/99	A/New York/55/2004	A/Texas/50/2012	B/Brisbane/60/2008
A/Michigan/45/2015	A/Solomon Islands/3/2006	A/Shandong/9/93	B/Massachusetts/02/2012
A/California/7/09	A/Beijing/262/95	B/Hong Kong/5/72	B/Malaysia/2506/2004
A/Wisconsin/15/09	A/Hiroshima/52/2005	B/Wisconsin/1/2010	

TEST PROCEDURES



CLINICAL PERFORMANCE

Performance of the 'QuantumPACK™ Easy Influenza A+B' against the PCR comparator are presented in the tables below.

QuantumPACK™ Easy Influenza A+B	RT-PCR			total
	Flu A	Flu B	Neg	
Flu A	52	0	0	52
Flu B	0	51	0	51
Neg	2	3	458	463
Total	54	54	458	566

ANALYTICAL PERFORMANCE

Limit of Detection

Virus Type	Strain	LoD (HA unit/ml)
Influenza A(H3N2)	A/Texas/1977	1.025
Influenza A(H1N1)	A/New Caledonia/20/99	2.0
Influenza B	B/Hong Kong/5/72	0.3

PPV : 100.00%
NPV : 98.92% (95% CI: 97.49-99.54%)
OPV : 99.12% (95% CI: 97.95-99.71%)

QuantumPACK™ Easy COVID-19 Ag

CE IVD

Cat No.	32ED40
Package	20 Tests/kit



COMPONENTS



Test device	20 ea	Sterile swab	10 ea x 2
Assay diluent	10 ea x 2	Tube rack	2 ea
Nozzle Cap	10 ea x 2	Control swab	1 ea (each)

DEDICATED INSTRUMENTS



✓ Easy to Use

Automatic analysis of test results with QDITS™ Series
Compatible with viral transport media

✓ High Performance

QuantumPACK™ technology is applied
Can detect various COVID-19 strains

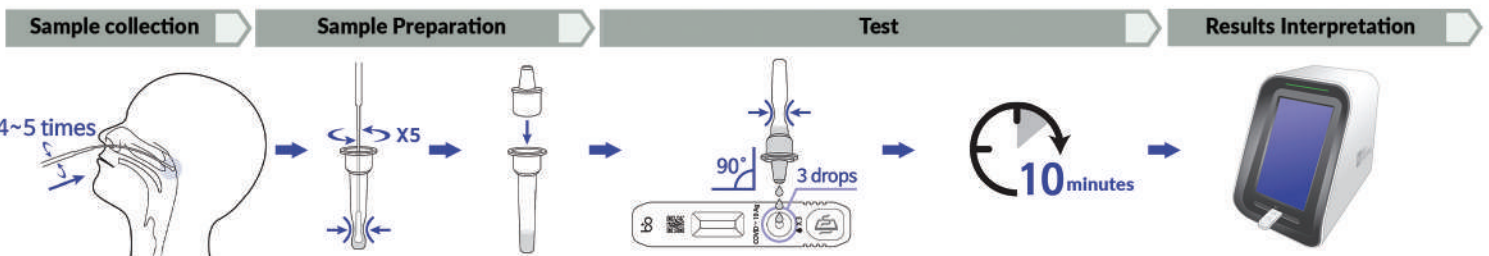
✓ Fast Results

Reaction completed in 10min
Fast scan times in less than 5s

✓ Excellent Quality

Data algorithm is applied to each lot
including control swab for QC

TEST PROCEDURES



CLINICAL PERFORMANCE

Performance of the 'QuantumPACK™ Easy COVID-19 Ag' against the PCR comparator are presented in the tables below.

Features	Subgroup	Result	Sensitivity (95% CI)
Ct values	Ct<20	20/20	100% (83.16-100.0)
	20≤Ct<30	28/29	96.55%(82.24-99.91)
	30≤Ct	5/8	62.50%(24.49-91.48)
Days post symptom onset	0~3 day	16/16	100%(79.41-100.0)
	4~7 day	14/14	100%(76.84-100.0)
	> 7 day	10/11	90.91%(58.72-99.77)
Symptomatology	Symptomatic	40/41	97.56%(87.14-99.94)
	Asymptomatic	13/16	81.25%(54.35-95.95)

PPV : 100%
NPV : 97.40% (95% CI: 93.58-98.97%)
OPV : 98.07% (95% CI: 95.13-99.47%)

ANALYTICAL PERFORMANCE

Limit of Detection

Strain	LoD (TCID ₅₀ /ml)
USA-WA1/2020	1.47 x 10 ²
South Africa/KRISP-K005325/2020	2.33 x 10 ²
England/204820464/2020	2.05 x 10 ²
Japan/TY7-503/2021	1.23 x 10 ²
SARS-CoV-2 Lineage B.1.617.2; Delta Variant (USA/PHC658/2021)	2.04 x 10
SARS-CoV-2 Lineage B.1.1.529; Omicron Variant CF	1.5 x 10

NanoPACK™ COVID-19 Ag

CE IVD

Cat No.	51ED40
Package	20 Tests/kit



COMPONENTS



Test device	20 ea	Sterile swab	10 ea x 2
Assay diluent	10 ea x 2	Tube rack	2 ea
Nozzle Cap	10 ea x 2	Control swab	1 ea (each)

✓ Easy to Use

Visual reading without equipment
Compatible with viral transport media
Easy workflow

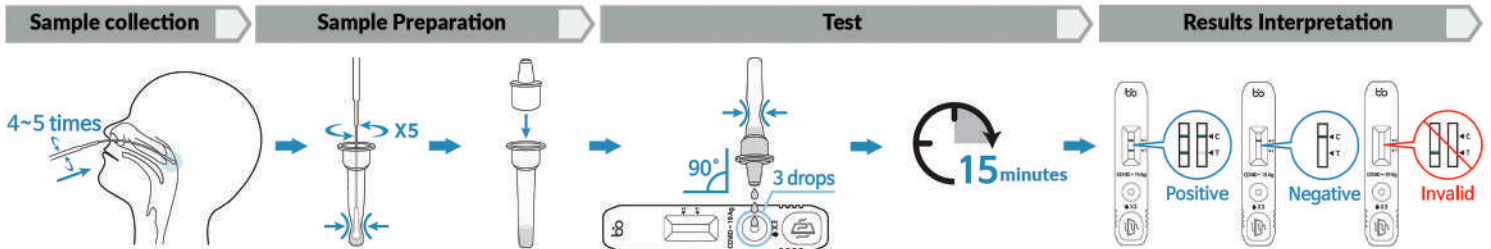
✓ High Performance

NanoShell technology is applied
Can detect various COVID-19 strains

✓ Excellent Quality

Including control swab for quality control

TEST PROCEDURES



CLINICAL PERFORMANCE

Performance of the 'NanoPACK™ COVID-19 Ag' against the PCR comparator are presented in the tables below.

Features	Subgroup	Result	Sensitivity (95% CI)
Ct values	Ct<20	20/20	100% (83.16-100.0)
	20≤Ct<30	27/29	93.10%(77.23-99.15)
	30≤Ct	4/8	50.00%(15.7-84.3)
Days post symptom onset	0~3 day	16/16	100%(79.41-100.0)
	4~7 day	14/14	100%(76.84-100.0)
	> 7 day	9/11	81.82%(48.22-97.72)
Symptomatology	Symptomatic	39/41	95.12%(83.47-99.40)
	Asymptomatic	12/16	75.00%(47.62-92.73)

PPV : 100%
NPV : 96.15% (95% CI: 92.14-98.16%)
OPV : 97.10% (95% CI: 93.80-98.93%)

ANALYTICAL PERFORMANCE

Limit of Detection

Strain	LoD (TCID ₅₀ /ml)
USA-WA1/2020	5.9 × 10 ²
South Africa/KRISP-K005325/2020	8.9 × 10 ²
England/204820464/2020	8.2 × 10 ²
Japan/TY7-503/2021	9.84 × 10 ²
SARS-CoV-2 Lineage B.1.617.2; Delta Variant (USA/PHC658/2021)	8.14 × 10
SARS-CoV-2 Lineage B.1.1.529; Omicron Variant CF	6.1 × 10

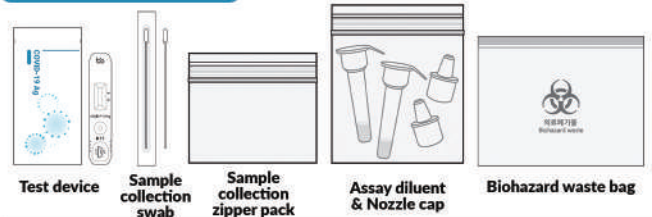
NanoPACK™ COVID-19 Ag Home Test

IVD

Cat No.	53ED20
Package	2 Tests/kit



COMPONANTS



Test device	2 ea	Assay diluent	2 ea
Sample collection swab	2 ea	Nozzle cap	2 ea
Sample collection zipper pack	2 ea	Waste bag	2 ea

✓ Easy to Use

Visual reading without equipment
Apply tube fixing hole in package box
Easy workflow

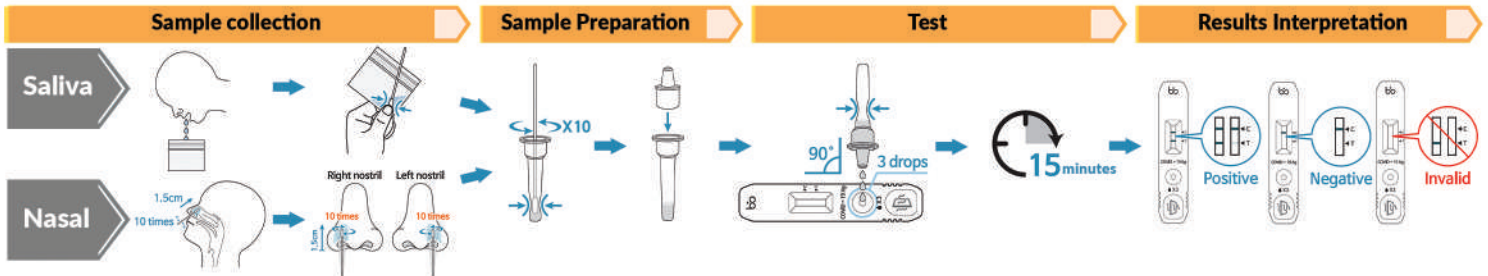
✓ [Saliva and Nasal] in One

Can be tested with the desired sample
2 types of sample collection tools included

✓ High Performance

NanoShell technology is applied
Can detect various COVID-19 strains

TEST PROCEDURES



CLINICAL PERFORMANCE

Performance of the 'NanoPACK™ COVID-19 Ag Home Test' on nasal sample against the PCR comparator are presented in the tables below.

Features	Subgroup	Result	Sensitivity (95% CI)
Ct values	Ct<20	63/65	96.92%(89.32-99.36)
	20≤Ct<30	9/11	81.82%(48.22-97.72)
	30≤Ct	3/5	60.00%(14.66-94.73)
Days post symptom onset	0~3 day	33/33	100%(89.42-100.0)
	4~7 day	9/9	100%(66.37-100.0)
	> 7 day	2/2	100%(15.81-100.0)
Symptomatology	Symptomatic	44/44	100%(91.96-100.0)
	Asymptomatic	31/37	83.78%(67.99-93.81)

PPV : 98.68% (95% CI: 91.38 - 99.81 %)
NPV : 97.10% (95% CI: 93.94 - 98.64 %)
OPV : 97.53% (95% CI: 94.97 - 99.00 %)

ANALYTICAL PERFORMANCE

Limit of Detection

Strain	LoD (TCID ₅₀ /ml)
USA-WA1/2020	5.9 × 10 ²
South Africa/KRISP-K005325/2020	8.9 × 10 ²
England/204820464/2020	8.2 × 10 ²
Japan/TY7-503/2021	9.84 × 10 ²
SARS-CoV-2 Lineage B.1.617.2; Delta Variant (USA/PHC658/2021)	8.14 × 10 ²
SARS-CoV-2 Lineage B.1.1.529; Omicron Variant CF	6.1 × 10 ²

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