Sa2Res: Fully Integrated Diagnostics System

Sa2Res
Samples to Results

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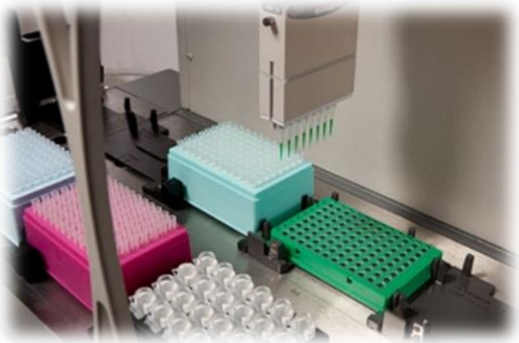
Sa2Res™

3 products in one

Real Time PCR

+



Liquid Handler

+

DNA/RNA auto extractor

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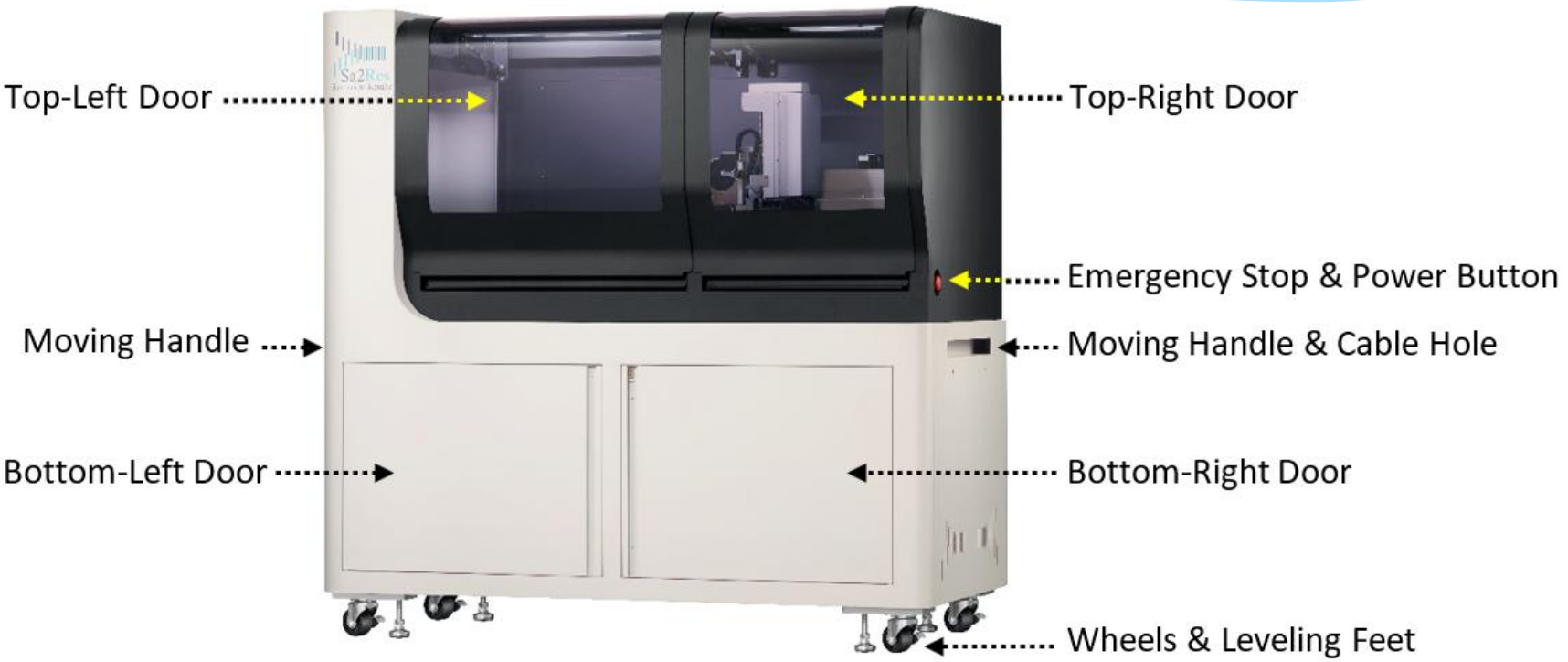
Sa2Res™ Features

External overview



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Sa2Res™ Features

Internal overview

A : Nucleic Acid Extraction Module

B : Sample Tube Rack Holder

C : Liquid Handling Module

D : Rack for Primary Samples

E : Waste Bin

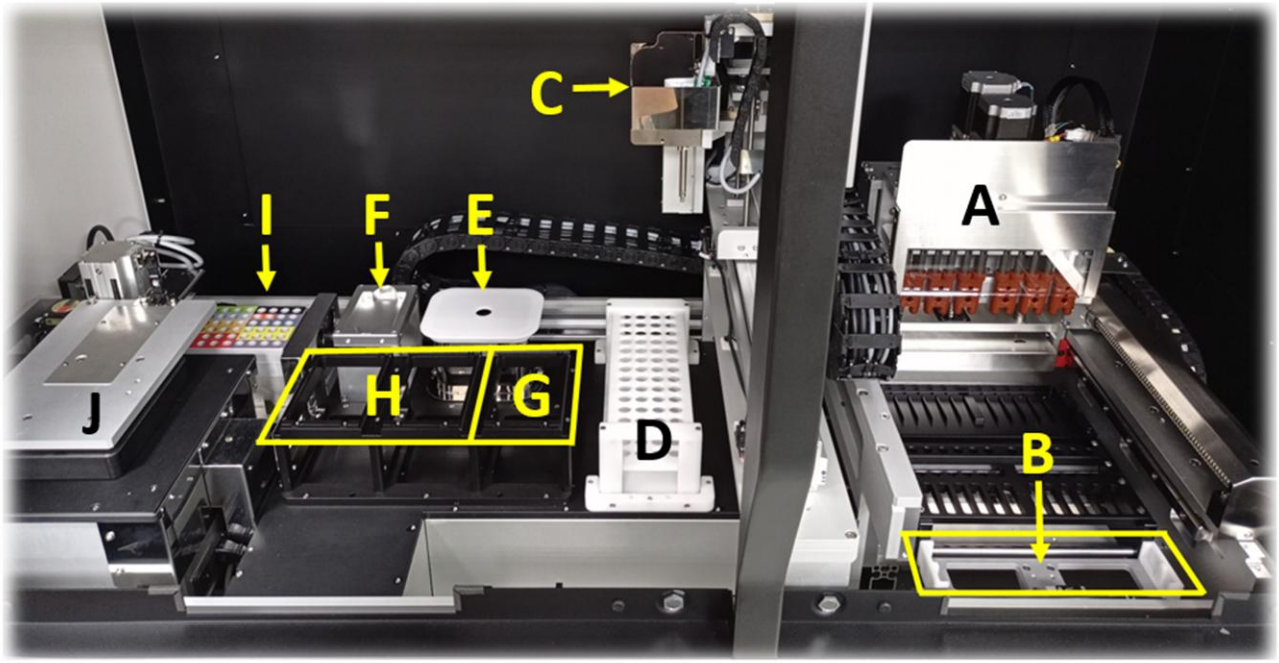
F : PCR Caps Holder

G : Holder for 1000 µl Tips

H : Holder for 200 µl Tips

I : Cooling Area for PCR Reagents

J : qPCR Module



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Sa2Res™ Features

Accessories included

Primary Sample Racks

3 ml **x 1**

9 ml **x 1**

3 ml rack compatible also with standard swab tubes

Sample Tube Racks

0.2 ml **x 1**

1.5 ml **x 1**

0.2 ml rack for qPCR lyophilized formats like HCV Dx and HBV Dx
1.5 ml rack for liquid format

Holder Lid **x 1**

Barcode Reader **x 1**

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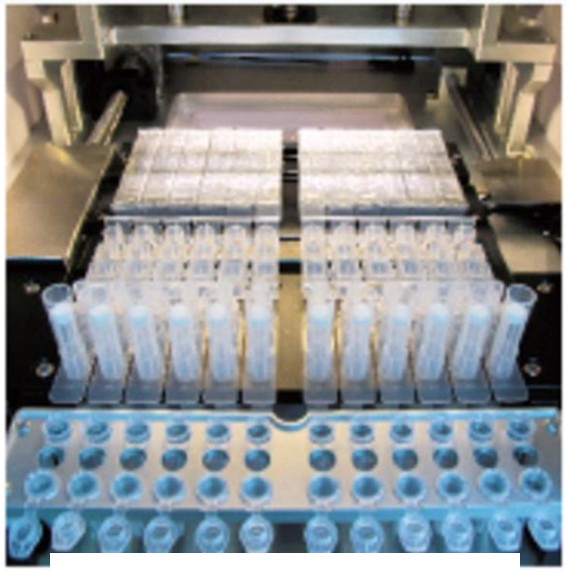
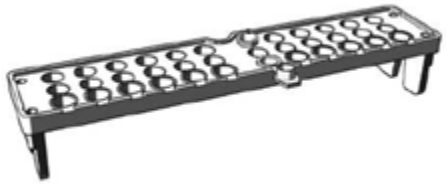
Sa2Res™ Extraction module





Special rack For 0,2 ml PCR tube (HCV/HBV DX lyophilized kits)

Standard rack For 1,5 ml elution tubes

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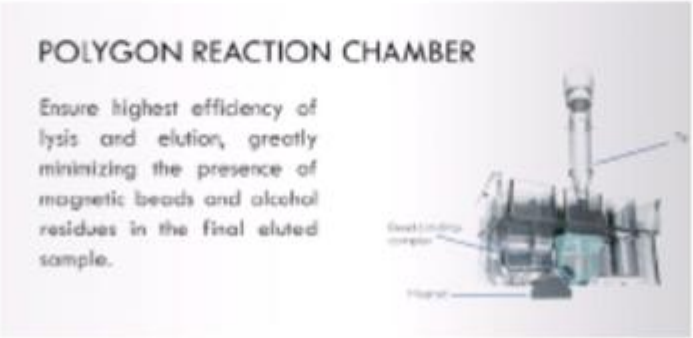
Sa2Res™ Extraction module

Magnetic Beads based technology



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Sa2Res™ Features

Consumables supported

Tecan tips
1000 µl
conductive

Tecan tips
200 µl
conductive

FROM TECAN

Sa2Res
PCR caps

Sa2Res
PCR strips

FROM SACACE

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Sa2Res™ Features

Sa2Res main features

- Fully **automatic** system
- **One single software** handling DNA/RNA extraction, qPCR setup, qPCR Amplification and Results Analysis
- **Full compatibility** with SaMag-12 extraction reagents
- Barcode reader for **sample traceability**
- **LIS** import and export support
- Support for **primary sample** tubes

- 4 channels **Real Time PCR** multiplexing, up to 4 targets in a single reaction well
- Import **standard curve** from previous runs
- Up to 48 samples/run processed
- ~6 hours for 1 full run
- Refrigerated block for reagents

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Versatility of Assay Type

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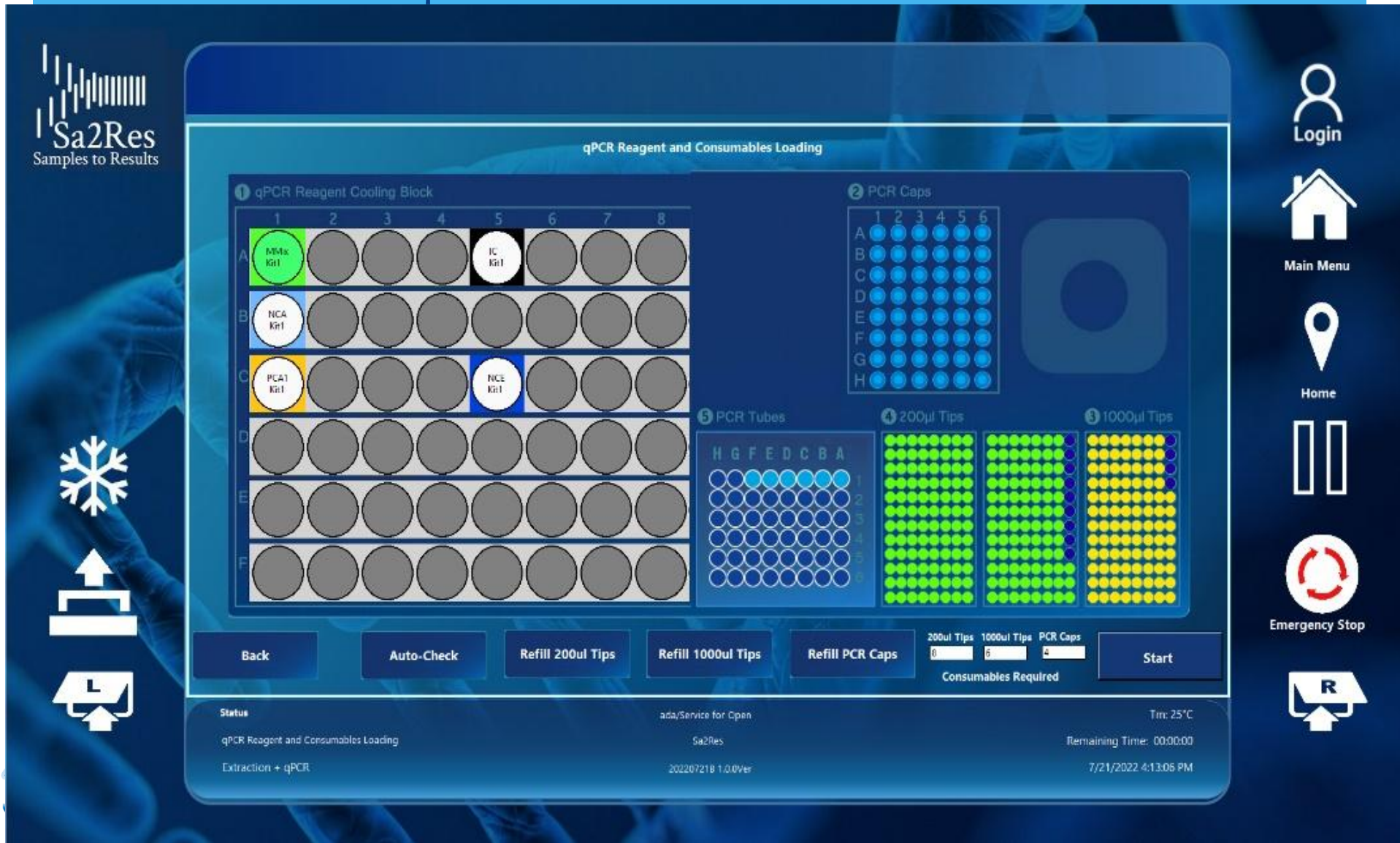
Run Set up

Sa2Res™

Run Set up

Sa2Res™

Run Set up



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Run Set up

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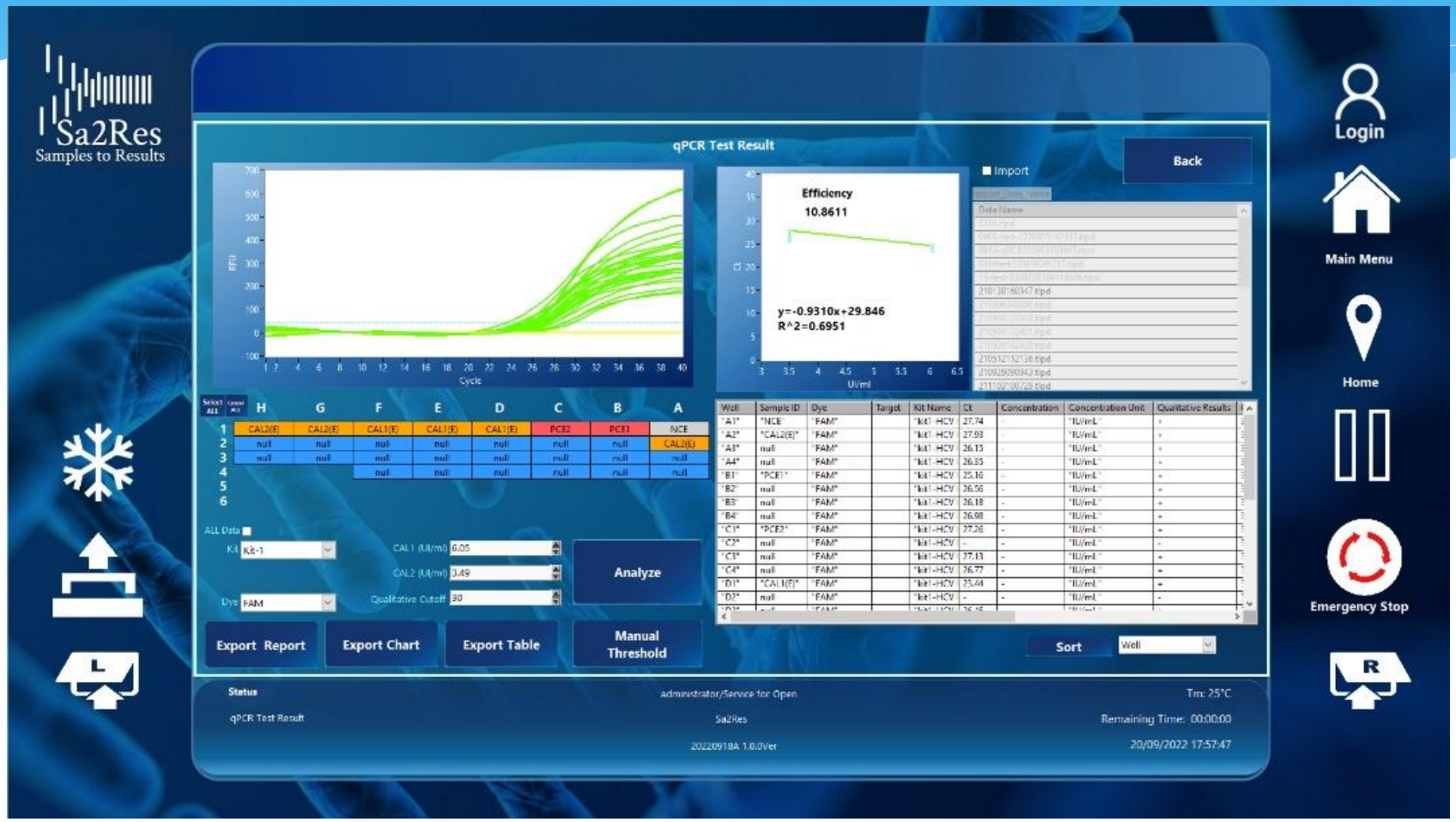
Results Analysis



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Sa2Res™ workflow

Extraction part

Insert Reaction Cartridges

Insert Reaction Chambers

Insert Tip Holder

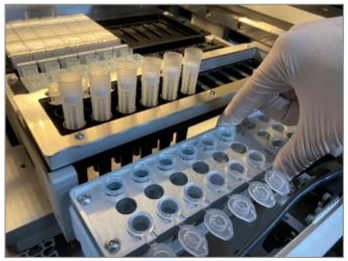
Put Holder Lid on (arrows facing to the inside)

Put Piercing Pins and Filter Tips into Tip Holder

Place the Sample Tubes onto the Sample Tube Rack

Place Elution Tubes onto the Sample Tube Rack

Place the Sample Tube Rack into the extraction module



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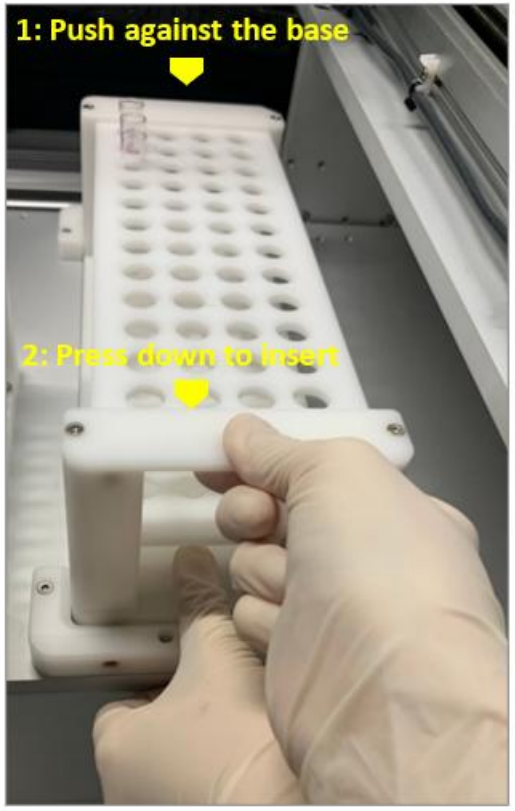
Sa2Res™ workflow

Sample preparation

Primary Samples Rack



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Sa2Res™ workflow

qPCR consumables and reagents

Tecan Tips Rack

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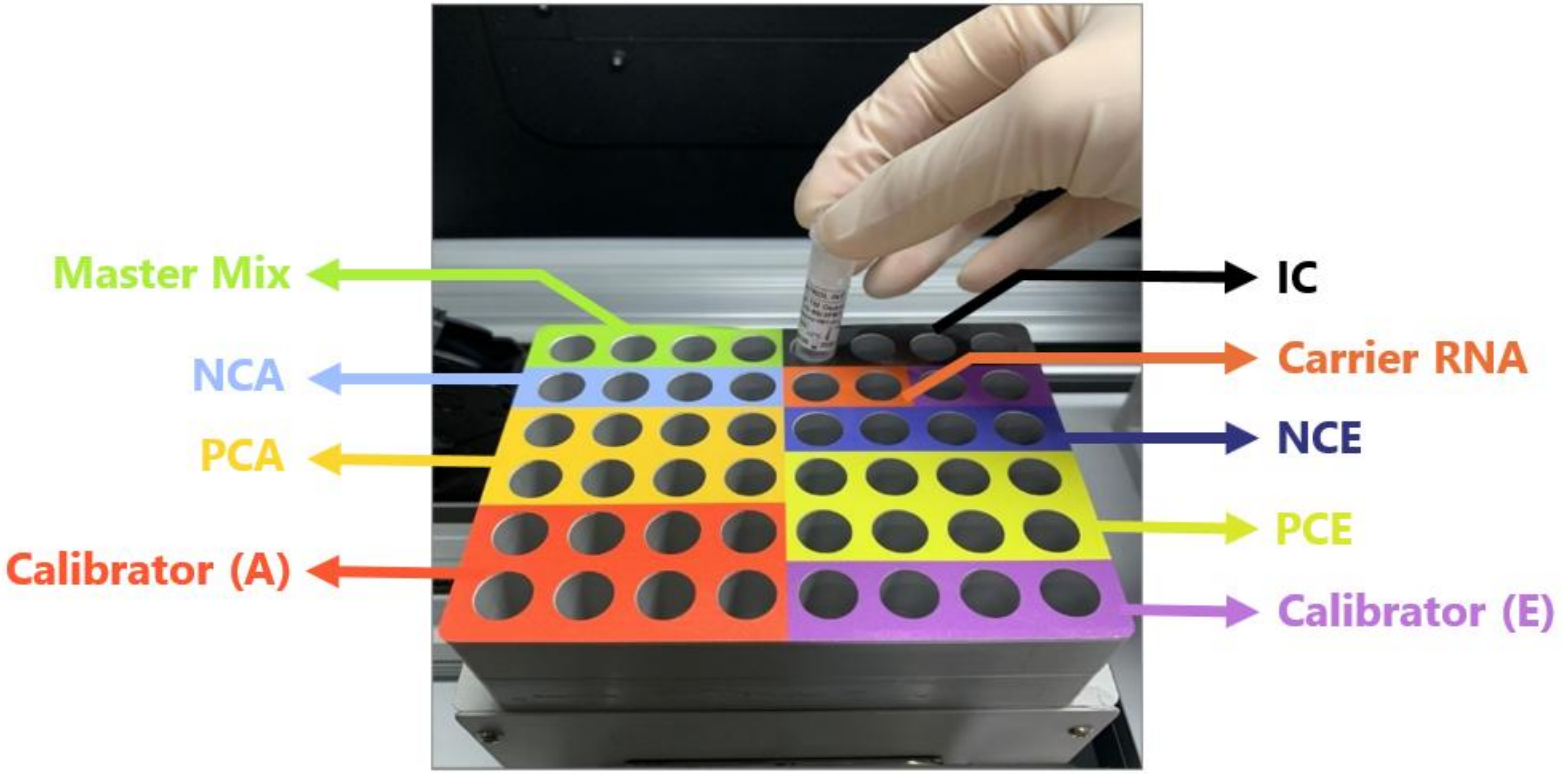
Sa2Res™ workflow

qPCR consumables and reagents



Reagents Rack

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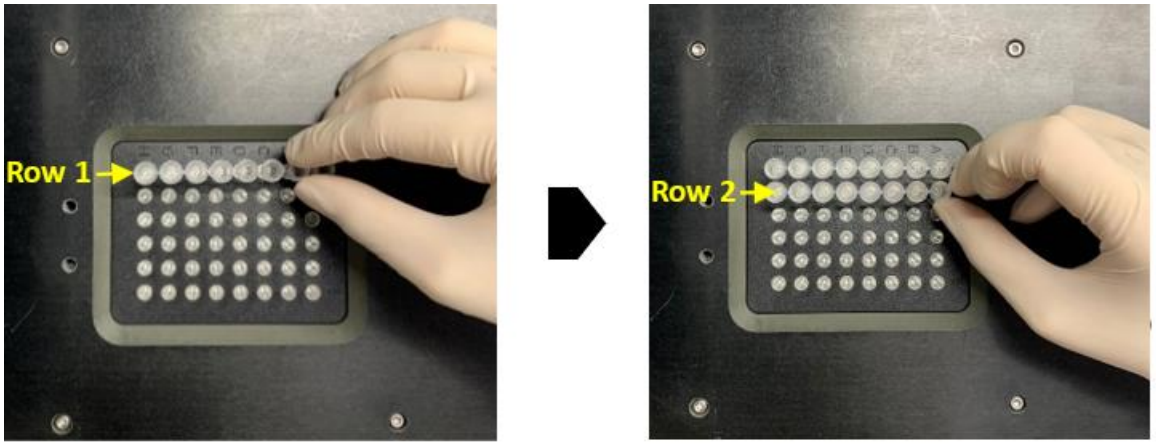
Sa2Res™ workflow

qPCR consumables and reagents



Sa2Res qPCR Tubes (0.2 ml 8-strip)

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Sa2Res™ workflow

qPCR consumables and reagents

Sa2Res qPCR caps

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Sa2Res™ tech spec: extraction

* **Extraction system:** Liquid handling technology, proprietary piston system, magnetic beads separation technology
* **Capacity:** 1 - 12 samples / run
* **Sample input volume:** 100 - 400 µl
* **Elution volume:** 50 - 300 µl
* **Extraction consumables:** Prefilled extraction plates with all necessary plastics
* **Extraction time:** 30 - 60 minutes, dependent on extraction protocol
* **Heat block temperature:** RT - 70°C
* **UV decontamination:** Built in

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Sa2Res™ tech spec: liquid handling

* **Module design:** 1-channel pneumatic pipetting module (ADP), incl. Liquid-level detection
* **Functionality:** Liquid transfer, PCR tube capping, PCR tube transfer
* **Pipetting volume:** 10 – 1,000 µl
* **Pipetting precision (CV):** 200 µl tip: at 10 µl ≤ 2%
  at 50 µl ≤ 0.75%
  at 200 µl ≤ 0.75%

* **Pipetting precision (CV):** 1,000 µl tip: at 100 µl ≤ 0.75%
  at 1,000 µl ≤ 0.75%

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Sa2Res™ tech spec: qPCR

- **Capacity:** 1 - 48 samples / run
- **qPCR reaction volume:** 10 - 100 µl
- **Supported consumables:** 0.2 ml 8-strip PCR tubes
- **Temperature control range:** 40 - 99°C
- **Temperature accuracy:** ≤ 0.1°C
- **Temperature homogeneity:** ≤ ±0.1°C
- **Heating rate:** 8°C / s
- **Cooling rate:** 8°C / s
- **Optical system – light source:** High-brightness LED, 4-channels
- **Optical system – detection system:** Photodiodes
- **Optical system – Excitation wavelengths:** 470 nm ± 10 nm
  525 nm ± 10 nm
  570 nm ± 10 nm
  620 nm ± 10 nm
- **Optical system – Detection wavelengths:** 520 nm ± 10 nm
  570 nm ± 10 nm
  620 nm ± 10 nm
  670 nm ± 10 nm

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Sa2Res™ qPCR Comparison

	ABI 7500	BioRad CFX96	Qiagen RotorGene Q	Sa2Res
Thermal System	Peltier	Peltier	air cooled	Peltier
Average ramp rate (°C/s)	1.6	3.3	15-20	8
Temperature accuracy (°C)	±0.25	±0.2	±0.25	±0.1
Uniformity of thermal block temperature (°C)	±0.5	±0.4	±0.01	±0.1
Range of temperature (°C)	4-100	0-100	ambient-99	40-99
Optical System	Tungsten halogen lamp	LED	LED	LED
Excitation spectrum	5 filters	450-684 nm	365-680	470-750
Detector	CCD camera	Photodiodes	PMT	Photodiodes
Emission filters/channels	5	6	6	4
Compatible dyes	FAM, JOE, VIC, NED, TAMRA, Rox, TexasRed, Cy3, Cy5	FAM, JOE, VIC, NED, TAMRA, Rox, TexasRed, Cy3, Cy5	FAM, JOE, VIC, NED, TAMRA, Rox, TexasRed, Cy3, Cy5	FAM, JOE, HEX, R6G, ROX, TexasRed, Cy5
Format	96-well plates	96-well plates	rotor disk	48-well format
Test tube type (ml)	0.2	0.2	0.1 - 0.2	0.2
Supported volumes (µl)	20-100	up to 50	10-50	10-100
Weight (Kg)	64	21.4	14	-

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Sa2Res qPCR kits

Protocols available in Sa2Res at launch:

HCV Real-TM Quant Dx
HBV Real-TM Quant Dx

STD-1 kits (e.g. Chlamydia trachomatis Real-TM)
STD-2 kits (e.g. Ureaplasma parvum/urealyticum Real-TM)
STD-3 kits (e.g. Chlamydia trachomatis/Ureaplasma/ M.genitalium Real-TM)
HPV Genotypes 14 Real-TM
CMV Real-TM Quant
EBV Real-TM Quant
MTB Real-TM
Rubella Real-TM Qual
Toxoplasma Real-TM

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Sa2Res extraction kits

Extraction kits for Sa2Res and SaMag:

SaMag Viral Nucleic Acids Extraction kit

To be used with SaMag or Sa2Res instruments for extraction of viral nucleic acids from plasma, serum or cell-free body fluids

SaMag STD Nucleic Acids Extraction kit

To be used with SaMag or Sa2Res instruments for extraction and purification of sexually transmitted pathogens nucleic acids, starting from biological samples such as cervical, uretral swabs, urine sediment, seminal liquid, prostatic liquid

SaMag Blood DNA Extraction kit

To be used with SaMag or Sa2Res instruments for extraction and purification of genomic DNA from whole blood, peripheral blood mononuclear cells or buffy coat

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Thank you!

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