Coronavirus RNA extraction research kit.

Suggested sample types:

1. **Swabs in Viral Transport Medium**
2. **Sputum / Saliva Samples**
3. **Swabs without Transport Medium (Dry Swabs)**

Not for re-sale.

For Research Use Only, not for diagnostic purposes.

Please follow appropriate laboratory safety policies and use laboratory technique consistent with local law and guidelines. Inactivation of coronavirus or any other respiratory pathogen has NOT been tested.

Contents

Bottle	Volume	Protocols used
Reagent 1 RTU	10 mL	For swabs directly, viral transport media, or saliva and sputum
Reagent 1 10×	7 mL	For swabs in viral transport media
Reagent 2a conc	120 µl	

All reagents should be stored at room temperature.
The reagents are compatible with manual or automated pipetting.
Arcis reagents are NOT compatible with solutions containing Guanidine Thiocyanate

Suggested Protocol for Swabs in Viral Transport Medium

NOTE 1: Reagent 1 RTU (Ready-To-Use) is recommended for this protocol. The protocol below is for guidance only and suitable volumes should be determined empirically.

NOTE 2: Reagent 1 10× is supplied in this kit and should only be used if Reagent 1 RTU does not give suitable performance.

NOTE 3: Arcis reagents are NOT compatible with viral inactivation solutions containing Guanidine Thiocyanate

Step One

Add 90µl liquid sample (Transport Medium) to 6µl Reagent 1 RTU to yield 96µl lysate

Agitate sample by briefly shaking or vortex mixing

Optional: Heat lysate for 5 minutes at 60°C

Proceed to Step Two

Step Two

Mix lysate with Reagent 2a conc in order to prepare for testing.

Reagent 2a conc will chelate common PCR inhibitors; the level of inhibition can vary between sample types and the volumes used. Therefore, the volume of Reagent 2a conc may require optimisation, and suggested volumes are shown below:

Lysate Volume (µl)	Reagent 2a conc volume (µl)
40	2

Material is ready for downstream molecular testing (e.g. reverse transcription, RT-PCR, qRT-PCR)

NOTE 3: Arcis prepared samples may be added at up to 50%v/v in qPCR reactions without loss of performance.

Suggested Protocol for Sputum/Saliva Samples

Collect sample according to current public health authority guidelines

NOTE 1: Reagent 1 RTU is recommended for this procedure. The protocol below is for guidance only and suitable volumes should be determined empirically.

NOTE 2: Reagent 2a conc is recommended for this procedure.

NOTE 3: Viscous samples may need to be pre-liquefied to aid sample handling. For viscous saliva, the sample can be liquefied with a freeze/thaw cycle, or by pipetting up and down ten (10) times after adding Reagent 1 RTU. For viscous sputum, the sample can be liquefied with mucolytic agents such as dithiothreitol (DTT) or N-Acetyl-L-Cysteine (NALC).

NOTE 4: Viral lysis efficiency should be determined empirically; the amount of Reagent 1 RTU can be adjusted to affect lysis.

NOTE 5: Arcis reagents are NOT compatible with viral inactivation solutions containing Guanidine Thiocyanate

Step One

Add 90µl of sample to 150µl of Reagent 1 RTU to lyse sample.

Reagent 1 RTU may be pre-diluted 1 in 50 in PCR-grade water (RNA/DNA/RNase/DNase-free) prior to use. This dilution can help overcome inhibition in downstream reactions and should be tested empirically if Reagent 1 RTU is not giving acceptable results.
The volume of sample added can be optimised. A range of sample inputs from 30-150µl is suggested ranging from 1 volume sample into 5 volumes of Reagent 1 RTU, down to 1 volume sample into 1 volume of Reagent 1 RTU, see below:

This may help if the dilution is causing loss of sensitivity

Ratio	Sample Volume (µl)	Reagent 1 RTU volume (µl)
1:5	30	150
2:5	60	150
3:5	90	150
4:5	120	150
1:1	150	150

Vortex briefly and Proceed to Step Two.

Step Two

Lysate should be mixed with Reagent 2a conc in order to prepare for testing. The volume of Reagent 2a conc may require optimisation but preferred option is shown below:

Lysate Volume (µl)	Reagent 2a conc volume (µl)
40	2

Material is ready for downstream molecular testing; it is possible to increase or decrease the volume as long as the ratio is maintained

NOTE 4: Arcis prepared samples may be added at up to 50%v/v in qPCR reactions without loss of performance

Suggested Protocol for Swabs Without Transport Medium (Dry Swabs)

Collect swab sample according to current public health authority guidelines

NOTE 1: Use Reagent 1 RTU for this procedure. The protocol below is for guidance only and suitable volumes should be determined empirically.

NOTE 2: Arcis reagents are NOT compatible with viral inactivation solutions containing Guanidine Thiocyanate

Preparation of Reagents

Reagent 1 RTU may be pre-diluted 1 in 50 in PCR-grade water PCR-grade water (RNA/DNA/RNase/DNase-free) prior to use. This dilution can help overcome inhibition in downstream reactions and should be tested empirically if undiluted Reagent 1 RTU is not giving acceptable results.

Step One

Add swab to 150µl* of Reagent 1 RTU (or pre-diluted); twirl swab to mix; snap off shaft.

Optional: Heat sample for 5 minutes at 60°C

Optional: Pulse Vortex for 30-60 seconds

Prior to swab removal, press swab head against the side of the vessel to squeeze out any remaining lysate liquid. Remove swab from tube.

Proceed to Step Two.

*Suggested volume. Suitable volume should be determined empirically depending on swab type and dimensions. Use minimum but sufficient volume of Reagent 1 RTU to just cover the head of the swab, 150µl is recommended as a starting point. Synthetic swabs are recommended for this procedure.

Step Two

Lysate should be mixed with Reagent 2a conc in order to prepare for testing. The volume of Reagent 2a conc should be optimised with suggested volumes shown below:

Lysate Volume (µl)	Reagent 2a conc volume (µl)
40	2

Material is ready for downstream molecular testing.

NOTE 2: Arcis prepared samples may be added up to 50%v/v in qPCR reactions without loss of performance