February 2019

# QIAsymphony® SP Protocol Sheet

## Reference_500_V6 protocol

This document is the Reference_500_V6 *QIAsymphony SP Protocol Sheet*, R1, for QIAsymphony DNA Investigator® Kit.

## General information

The QIAsymphony DNA Investigator Kit is intended for molecular biology applications. This product is not intended for the diagnosis, prevention, or treatment of a disease.

These protocols are for purification of total DNA from samples encountered in forensic, human identity, and biosecurity applications using the QIAsymphony SP and the QIAsymphony DNA Investigator Kit.

Since the type of samples that can be processed using the QIAsymphony DNA Investigator Kit can vary greatly, there is also a variety of different pretreatments, optimized for specific sample types. For the REF_500_V6 protocol, samples are lysed under denaturing conditions in the presence of proteinase K and Buffer ATL in a total volume of 500 µl.

**Note**: It is the user's responsibility to validate performance using this combination for any procedures used in their laboratory.

| | |
|---|---|
| **Kit** | QIAsymphony DNA Investigator Kit |
| **Sample material** | Buccal swabs |
| **Protocol name** | REF_500_V6 |
| **Default Assay Control Set** | ACS_REF_500_V6 |
| **Editable** | Elution volume: 100 µl, 150 µl, 200 µl, 400 µl<br>Elution solution: Buffer ATE |
| **Required software version** | Version 5.0 or higher |

## Materials required but not provided

### For all sample types

- Vortexer
- Thermomixer or shaker-incubator

For buccal swabs

- Plastic swabs with cotton or Dacron® tips (Puritan® applicators with plastic shafts and cotton or Dacron tips are available from: Hardwood Products Company, **www.hwppuritan.com**, item nos. 25-806 1PC and 25-806 1PD; and from Daigger, **www.daigger.com**, cat. nos. EF22008D and EF22008DA). Nylon cytology brushes and other swab types may also be used.*
- Microcentrifuge
- Scissors or appropriate cutting device
- Optional: QIAshredder spin columns (for maximum yields) (cat. no. 79654)

## "Sample" drawer

| | |
|---|---|
| **Sample type** | Buccal swabs |
| **Sample volume** | 500 µl |
| **Primary sample tubes** | See **www.qiagen.com/goto/qsdnainvestigator** for more information |
| **Secondary sample tubes** | See **www.qiagen.com/goto/qsdnainvestigator** for more information |
| **Inserts** | See **www.qiagen.com/goto/qsdnainvestigator** for more information |
| **Other** | n/a |

n/a = not applicable.

## "Reagents and Consumables" drawer

| | |
|---|---|
| **Position A1 and/or A2** | Reagent cartridge (RC) |
| **Position B1** | n/a |
| **Tip rack holder 1–17** | Disposable filter-tips, 200 µl |
| **Tip rack holder 1–17** | Disposable filter-tips, 1500 µl |
| **Unit box holder 1–4** | Unit boxes containing sample prep cartridges |
| **Unit box holder 1–4** | Unit boxes containing 8-Rod Covers |

n/a = not applicable.

## "Waste" drawer

| | |
|---|---|
| **Unit box holder 1–4** | Empty unit boxes |
| **Waste bag holder** | Waste bag |
| **Liquid waste bottle holder** | Liquid waste bottle |

* This is not a complete list of suppliers and does not include many important vendors of biological supplies.

## Eluate" drawer

| | |
|---|---|
| **Elution rack (we recommend using slot 1, cooling position)** | See **www.qiagen.com/goto/qsdnainvestigator** for more information |

## "Required plasticware

| | One batch, 24 samples* | Four batches, 96 samples* |
|---|---|---|
| Disposable filter-tips, 200 µl†‡ | 26 | 98 |
| Disposable filter-tips, 1500 µl†‡ | 56 | 200 |
| Sample prep cartridges§ | 15 | 60 |
| 8-Rod Covers¶ | 3 | 12 |

* Use of less than 24 samples per batch decreases the number of disposable filter-tips required per run.
† There are 32 filter-tips/tip rack.
‡ Number of required filter-tips includes filter-tips for 1 inventory scan per reagent cartridge.
§ There are 28 sample prep cartridges/unit box.
¶ There are twelve 8-Rod Covers/unit box.

**Note**: Numbers of filter-tips given may differ from the numbers displayed in the touchscreen depending on settings, for example, number of internal controls used per batch.

## Preparation of sample material

When working with chemicals, always wear a suitable lab coat, disposable gloves, and protective goggles. For more information, consult the appropriate material safety data sheets (MSDSs), available from the product supplier.

### Important points before starting

- QIAsymphony magnetic particles copurify RNA and DNA if both are present in the sample. If RNA-free DNA is required, add RNase A to the sample in the step indicated in the respective pretreatment protocol.
- Before beginning the procedure, read "Important Notes", page 12 of the *QIAsymphony DNA Investigator Handbook*.

### Buccal swabs

This protocol is for isolation of total (genomic and mitochondrial) DNA from buccal swabs. The pretreatment includes lysis of samples using proteinase K.

## Things to do before starting

- Before using Buffer ATL, check that it does not contain a white precipitate. If necessary, incubate for 30 minutes at 70°C with gentle agitation.
- Set a thermomixer or shaker–incubator to 56°C for use in step 4.
- Let the swab air dry for at least 2 h after sample collection.
- Optional: To harvest lysate remaining in the swab, QIAshredder spin columns may be required.

## Pretreatment protocol for buccal swabs

1. Place the swab into a 2 ml microcentrifuge tube (not provided).

   If using a Whatman® Omni Swab, eject the swab by pressing the end of the stem towards the swab.

   If using a cotton or Dacron swab, separate the swab from its shaft by hand or using scissors.
2. Add 475 µl Buffer ATL.
3. Add 25 µl proteinase K, and mix by vortexing.
4. Place the tube in a thermomixer or heated orbital incubator, and incubate with shaking at 900 rpm at 56°C for 15 min.
5. Briefly centrifuge the tube in a microcentrifuge to remove drops from the inside of the lid.
6. Carefully transfer the lysate to sample tubes or plates that are compatible with the sample rack of the QIAsymphony SP.

   See **www.qiagen.com/QIAsymphony/Resources** for a full list of compatible vessels. We recommend using 2 ml tubes (e.g., Sarstedt, cat. no. 72.693 or 72.608) or S-Blocks (cat. no. 19585).

   **Note**: Do not transfer any solid material as this may clog the tips during automated DNA purification.

   Lysate remaining in the swab can be harvested by transferring the material to a QIAshredder spin column (not supplied) and centrifuging at full speed for 2 min in a microcentrifuge. Transfer the flow-through to the sample tube.
7. Continue with the protocol "DNA Purification from Casework and Reference Samples" (page 19 in the *QIAsymphony DNA Investigator Handbook*).

## Revision history

| Document revision history | |
|---|---|
| R1 02/2019 | Update for QIAsymphony Software version 5.0 |

For up-to-date licensing information and product-specific disclaimers, see the respective QIAGEN® kit handbook or user manual. QIAGEN kit handbooks and user manuals are available at **www.qiagen.com** or can be requested from QIAGEN Technical Services or your local distributor.

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