

Forensic Biology Operating Procedures
QIASymphony SP Module – Database Sample DNA Extraction
QIAgility – Sample Set-up for PCR Amplification

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DOCUMENT STRUCTURE

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Section 1 *Chemicals and Reagents*

If the laboratory changes the preparation/verification procedures for a particular chemical/reagent, this change will be reflected in the chemical/reagent log and/or the verification paperwork.

Similarly, variations in vendor supplied materials (changes instituted by the vendor and outside of laboratory control) will be assessed to determine if the change adversely affects the laboratory analysis in which the reagent/chemical is used. This assessment will also be documented in the verification paperwork.

Such changes/modifications will be incorporated into this manual at the time of the next revision.

Please refer to Forensic Biology Work Instructions Manual for Reagent Verification information.

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Section 2 DNA Extraction – Database Samples

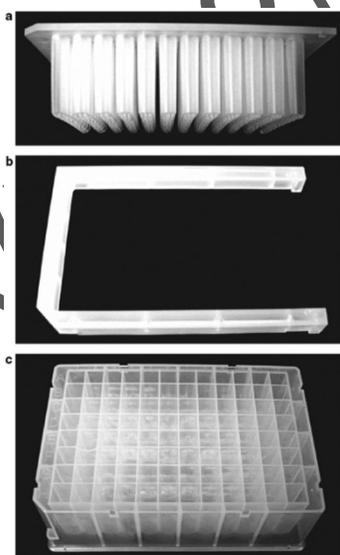
Qiagen QIASymphony SP

DNA Extraction using Promega Slicprep™ 96 Device

References:

- QIASymphony® SP/AS User Manual - Operating the QIASymphony SP, Software version 3.5, 10/2010.
- Database Sample “Slicprep™” Protocol using the QIASymphony DNA Investigator Kit.
- QIASymphony® SP/AS User Manual - General Description, 10/2010.
- QIASymphony® DNA Investigator Handbook, 10/2008.

The Slicprep™ 96 Device allows solid material to be incubated in a basket (a) that is placed in a deep-well plate (c). Following incubation, the basket is raised with a U-shaped collar (b) to allow for additional space below the basket during centrifugation. This allows removal of the incubation liquid and solubilized material from the solid support without having to transfer material to another tube or plate. Holes in the bottom of the basket allow rapid flow of liquid in and out of the baskets.



Note: All required reagents are provided as listed in QIASymphony® DNA Investigator Handbook.

Sample Preparation and Digestion

- Place Buffer ATL in a 56°C incubator until all precipitates dissolve. (May require occasional gentle agitation.)

- Prepare a master mix of Buffer ATL and Proteinase K as follows:
 - Obtain two 50ml conical vials
 - In each conical vial pipette the following:
 - 38220µl Buffer ATL (735µl Buffer ATL/sample)
 - 780 µl Proteinase K (15 µl Proteinase K/sample)
- Aliquot 750µl of the Buffer ATL / Proteinase K master mix into each well of a deep-well plate.
- Insert the basket into the deep-well plate ensuring it is properly seated. If desired, the basket may be labeled to assist in keeping track of well and/or sample placement.
- Place samples into the appropriate wells of the basket ensuring the sample is submerged in the liquid.

Note: See table below on how to appropriately load samples into the basket.

- For serrated buccal swabs, cut a portion of the swab into the appropriate well. For cotton swabs, cut a portion of the swab tip into the appropriate well. If two swabs were collected, the entire cotton tip of one swab may be snapped off and used. Dried blood stain cards are sampled with a 3mm hole punch (1-3 punches). The hole punch is cleaned by punching a clean piece of filter paper a few times.
- Each batch of extractions must include a minimum of five randomly placed internal control samples that have been previously typed.
- Allelic Ladders (AL) will eventually be added to wells A1, A4, A7, & A10; therefore, samples are not placed in these wells and will be run as place holders.
- Positive (Pos) and Negative (Neg) amplification controls will eventually be added to wells G12 & H12 respectively. These wells will be unselected when assigning Assay Control Sets on the QIA Symphony software.

	1	2	3	4	5	6	7	8	9	10	11	12
A	AL-1	8	16	AL-2	31	39	AL-3	54	62	AL-4	77	85
B	1	9	17	24	32	40	47	55	63	70	78	86
C	2	10	18	25	33	41	48	56	64	71	79	87
D	3	11	19	26	34	42	49	57	65	72	80	88
E	4	12	20	27	35	43	50	58	66	73	81	89
F	5	13	21	28	36	44	51	59	67	74	82	RB
G	6	14	22	29	37	45	52	60	68	75	83	Pos
H	7	15	23	30	38	46	53	61	69	76	84	Neg

- Seal the Slicprep device with plastic film and briefly vortex.
- Incubate the samples at 56°C (the acceptable range is 50°C - 60°C) for a minimum of 15 minutes. (A thermomixer set at 850rpm or shaker-incubator may also be used.)
- Place the U-shaped collar onto the device by lifting the basket just enough to place the collar between the basket and the deep well plate moving left to right. Ensure the 2 notches on the collar line up with the 2 indentations on the basket.
- Centrifuge the Slicprep device at 1500rpm for 5 minutes.
- Remove the basket containing the samples and save until batch has gone through technical review. (The basket may be placed on an empty pipette tip box lid and placed in the fume hood.) Discard the U-shaped collar.
- The deep well plate is now ready to be loaded onto the QIASymphony.

DNA Isolation and Purification

- Ensure that the power for the QIASymphony has been switched on. The power switch can be located on the left front of the instrument and is designated as a blue **ⓧ** button. The initialization of the instrument will take a few minutes.
- Using the touchscreen, login to the QIASymphony. Select “**AK Crime Lab**” and enter the password “**anchorage1**”. Press “**OK**”.
- In order to facilitate setting up a run, the QIASymphony SP wizard is a step-by-step guide to setting up a run. The wizard will take you through:
 - Loading the “Waste” drawer
 - Loading the “Eluate” drawer
 - Loading the “Reagent & Consumables” drawer
 - Loading the “Sample” drawer
 - Defining a batch/run

Note: It is possible to set up a run on the QIASymphony without the wizard.

- Press “**Wizard**” on the right hand of the “Sample Preparation” screen for step-by-step instructions.
- The “Wizard/ACS and Number of Samples” screen appears.

Note: When this screen is open, all drawers are locked. An error message will appear when “Wizard” is pressed in the following situations:

- If a plate carrier is already loaded in the “Sample” drawer
- If a plate carrier has not been loaded, but there are batches that are already defined to be loaded using the plate carrier
- 4 batches have already been queued

“Wizard/ACS and Number of Samples”

- Under “Available assay control sets” press “**Investigator**” to view choices. Select:
REF
200 SlicPrepV1
- Press “→” to move assay over to the Selected “assay control sets/number of samples”.
- Use the “+” and “-“ buttons to adjust the number of samples that will be processed. (89 samples, 4 blanks for allelic ladders, and 1 reagent blank for a total of 94 samples. Positive and negative amplification controls will be added at the amplification step.) Alternatively, press directly on the number and adjust the number using the virtual keypad. Press “**OK**”.
- Press “**Next**” to continue to “Load Waste Drawer”.

“Wizard/Load Waste Drawer”

The “Wizard/Load Waste Drawer” screen summarizes the items that need to be loaded into the “Waste” drawer.

Note: When the “Wizard/Load Waste Drawer” screen is open, it is only possible to open the “Waste” drawer. All other drawers are locked.

- Open the “Waste” drawer.
- Load “Waste” drawer as shown on the touch screen.

- Ensure the liquid waste container on the right side of the drawer has ample room for liquid waste. If necessary, empty and dispose of according to laboratory guidelines.
- Ensure tip disposal chute is attached and that there is ample room in the tip disposal bag in the container located under the QIASymphony in the cabinet.
- Insert partial or empty unit boxes into all four slots ensuring there is an empty unit box in slot 4).

Note: If the unit box contains a spacer, make sure to remove this. Do not empty partially filled unit boxes. Partially filled unit boxes will be detected during the inventory scan and can be used until they are full. It is recommended to move any partial boxes to the slot closest to the rear of the instrument. An empty unit box must be placed into slot 4. During initialization the handler goes down into the unit box in position 4. If it is not empty, the handler will crash.

- After loading the “Waste” drawer, close the drawer and press “**Next**”.
- The QIASymphony will now do an inventory scan of the “Waste” drawer.
- When the inventory scan is complete the “Wizard/Elution Slot/Configure Racks” screen appears.

“Wizard/Elution Slot/Configure Racks”

- Open the “Eluate” drawer.
- Highlight “**Slot 1**”.
- Under “Available rack types” on the right of the screen highlight “**Deep Well**” and scroll down to
QIA#19585
***S-Block96**
 Press to select.
- On the right of the screen select “**EDIT ID**”. Type in batch name i.e. DB12-1030KAH. Press “**OK**”.
- Place the deep well plate onto the metal transfer bracket in “slot 1” with well A1 in the upper left corner.
- Close the “Eluate” drawer and press “**Next**”. The QIASymphony will now perform an inventory scan of the “Eluate” drawer.

“Wizard/Load Reagents”

- Prepare the reagents:
 - Ensure the magnetic particles are fully re-suspended by removing the magnetic-particle trough from the reagent cartridge frame and vortex vigorously for at least 3 minutes. Replace the magnetic particles in the reagent cartridge frame.
 - Place the reagent cartridge into the grey holder. **Note:** cRNA is not utilized for the Database protocol and does not need to be added to the reagent cartridge holder.
 - Before using a reagent cartridge for the first time, place the piercing lid on top of the reagent cartridge so that the side with the opening fits against the magnetic particle trough. Gently push the piercing lid downward until it presses into place. **Note:** The piercing lid is sharp and care must be taken to ensure the lid is placed onto the reagent cartridge in the correct orientation.
 - Remove the magnetic-particle trough foil.
- Open the “Reagents and Consumables” drawer.
- Load the reagents by sliding the reagent holder with magnetic beads facing out towards analyst into rear position first. You may add a second set of reagents if necessary.
- Press “**Next**” to continue to the “Wizard/Load Consumables” screen.

“Wizard/Load Consumables”

- Uncap and load sample prep cartridges in the last three slots as shown on the screen. If there is a partial unit box, ensure it is loaded closest to the rear of the instrument. **Note:** Make sure that the sample prep cartridges are seated properly in the unit box and are not jammed.
- Uncap and load 8-Rod covers in the slot closest to you.

Note: Do not refill partially used unit boxes. The number of sample prep cartridges or 8-Rod Covers is detected during the inventory scan. Additionally, do not throw empty unit boxes away. Empty unit boxes will be used in the “Waste” drawer for collection of used sample prep cartridges and 8-Rod covers.

- Ensure there are enough tips available (8 blue racks and 10 black racks recommended) and reload if necessary. **Note:** it is ok if tips are missing within a tip rack as long as either the top left or the bottom right tip is missing. Do not refill partially used tip racks.

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OK

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	0	0	0
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0	0	0	0

Not OK

- Close the “Reagents and Consumables” drawer and press “**Next**”. The instrument will perform an inventory scan of the reagents and consumables drawer. **Note:** This scan will take approximately 5 – 10 minutes.

“Wizard/Sample Loading Summary”

This screen summarizes the number of samples and internal controls that are required for each sample rack. Press “**Next**” to continue to the “Wizard/Select Sample Carrier” screen.

“Wizard/Select Sample Carrier”

- In this screen select “**Use plate carrier**” to load samples using the plate carrier.
- Press “**Next**” to continue to the “Wizard/Load Sample Plate Carrier” screen.

“Wizard/Load Sample Plate Carrier”

This screen indicates which samples should be loaded into which sample rack area.

- Load plates into the carrier with well A1 oriented to the upper left of the slot. The plates are held in place by white pins located to the right and bottom of each slot.
- Open “Sample” drawer by pulling the door toward you.
- Load the carrier to the solid line and wait for the sound of a click and the flashing of the green LED lights. Slide the carrier into the QIASymphony. Note: On successful loading, the LEDs change from green to orange.

- Close the “Sample” drawer and press “**Next**” to continue to the “Wizard/Define Sample Rack Type” screen.

“Wizard/Define Sample Rack Type”

- To manually assign a rack ID select the appropriate slot where samples have been added. The selected sample slot becomes active and the sample rack can be assigned using the displayed list of available sample racks.
- Select the sample rack type in the “Available rack types” list.
- Press “**Tool for Storage Plate**” and select:
PR#V1391
Slicprep96device
- Press “**Next**” to continue to the “Wizard/Define Sample Rack Area” screen.

“Wizard/Define Sample Rack Area”

- Select the block of samples contained in the first quadrant (wells A01-H03).
Note: Quadrants 2-4 will be assigned later.
- Press “**Next**” to continue to the “Wizard/Batch X/Define Samples” screen.

“Wizard/Batch X/Define Samples”

Note: All wells will be assigned a sample ID including the blanks. There is no need to change this to align with the database worksheets.

- Press “**Next**” to continue with the batch definition process and the “Wizard/Batch X/Select Assay Control Sets” screen

“Wizard/Batch X/Select Assay Control Sets”

To process samples, Assay Control Sets must be assigned.

- Press “**Select All**” to highlight all the samples in the quadrant.
- Under “Application/ACS” under “Investigator” select:
REF
200 SlicPrep V1
- Press “**Next**” to continue with the “Wizard/Elution Slot & Volume” screen.

“Wizard/Elution Slot & Volume”

- Select the elution volume by selecting “**200**”.
- Select the appropriate slot to assign to the batch.
- Next to Batch you will now see a “**①**” showing that the first quadrant of samples has been assigned to the batch.
- Select “**Queue**”.

Repeat the above 4 steps beginning with the “Wizard/Define Sample Rack Area” to assign Assay Control Sets to the remaining 3 quadrants. **Note:** For wells A10-H12 unselect samples 95 & 96 by pressing “**Select All**” and then de-selecting sample 95 & 96 (these wells are reserved for the amplification positive and negative controls).

- Verify that you have “**①②③④**” next to Batch.
- Press “**Finish**”. As soon as a batch is queued, the “Run” button appears.
- Press “**Run**” to start the QIASymphony.
- Run will take approximately 3 hours.

Note: Reference the QIASymphony® SP Recovery Procedure for DNA Applications in the event the QIASymphony protocol is interrupted or aborted during sample processing.

Note: For troubleshooting, reference section 10 in the QIASymphony® SP/AS User Manual-General Description for further information.

End of batch processing, unloading the QIASymphony SP

Unloading the “Eluate” drawer

- Open the “Eluate” drawer.
- The “Eluate Drawer/Elution Slot” screen appears.
- Select the elution slot from which the elution rack will be removed.
- The “Eluate Drawer/Elution Slot/Change Rack X” screen appears.
- Press the “**Remove**” button in the “Configure” tab to remove the elution rack. A message appears asking whether you want to remove the elution rack from the selected slot. Press “**Yes**” to continue.
- Remove the S-Block containing the eluates from the elution slot/metal transfer bracket. Cover with a plastic seal and store at 4°C or proceed to amplification preparation using Qiagen’s QIAgility.
- Close the “Eluate” drawer.
- The “Eluate Drawer/Elution Slot/Configure Rack X” screen appears.
- Press the “**OK**” button.

- The QIASymphony SP performs an inventory scan of the “Eluate” drawer. Afterwards the “Sample Preparation/Overview” screen is displayed.

Unloading reagents and consumables

- Remove the reagent cartridge by opening the “Reagents & Consumables” drawer and sliding the reagent cartridge out. Reseal the troughs using the reuse seal strips provided in the QIASymphony kit. Remove the reagent cartridge from the holder and discard the reagent cartridge.
- Remove empty tip racks.
- Remove empty unit boxes left in the “Reagents and Consumables” drawer and save for collection of used sample prep cartridges and 8-Rod Covers in the “Waste” drawer.
- Close the “Reagents & Consumables” drawer.

Unloading samples

- Press the “**S**” button at the bottom of the touchscreen. The “Sample Preparation/Define Sample Rack Type” screen appears. Select the sample slot of the rack to be removed. Press the “**Remove**” button. The sample rack is removed from inventory and can now be removed from the “Sample” drawer.

Unloading waste

- Empty the liquid waste container if necessary according to laboratory guidelines.
- Dispose of any unit boxes that are full.
- Dispose of tip waste if necessary.

Maintenance

The table below describes the types and frequencies of maintenance required and the personnel who will routinely perform the maintenance.

Type of task	Frequency	Personnel
Daily maintenance	At the end of each day the instrument is in use	DNA analyst
Weekly maintenance	Once per week, if the instrument is in use, after the daily maintenance	Laboratory technician
Monthly maintenance	Once per month, if the instrument is in use, after the daily and weekly maintenance	Laboratory technician
Annual preventive maintenance and servicing	Once per year	QIAGEN Field Service Specialists only

Daily maintenance procedure

After performing the last run of the day, perform the daily maintenance procedure, described below.

- Remove all removable objects (plate carriers, adapters, inserts, liquid waste station, tip park station, tip disposal chute, liquid waste bottle, waste bag holder, reagent box holder) from the drawers.
- Wipe the drawers, the removed objects, and the lysis station with ethanol. Then wipe with a cloth moistened with water and dry with paper towels. Return the objects to the drawers.

Note: There are spikes below the piercing device in the “Reagents and Consumables” drawer that ensure that the reagent cartridge is correctly positioned. Take care when cleaning the “Reagents and Consumables” drawer.

- Clean the robotic gripper

- Wipe the robotic gripper with a lint-free cloth moistened with ethanol.
 - Important:** Only wipe the weight. Do not wipe the rods otherwise the ball mechanism may become jammed.
- Wipe with a lint-free cloth moistened with water and dry with paper towels.
- Clean the pipetting system tip guards
 - Open the “**Main Menu**” and press “**Maintenance SP**”.
 - Move the robotic arm to the cleaning position by pressing “**Tip guards**”.
 - Remove all 4 tip guards by pushing each tip guard upward until it clicks out of place and can be removed.
 - Rinse with ethanol.
 - Rinse with water and wipe dry with paper towels.
- Check the magnetic-head guards. Clean if necessary:
 - Open the “**Maintenance SP**” menu and run the service protocol “**Magnetic head guards**”.
 - Gently raise the catches to release the magnetic-head guards.
 - Wipe the magnetic-head guards with ethanol.
 - Wipe with a lint-free cloth moistened with water and wipe dry with paper towels. Replace the magnetic head guards.
- Open the “**Maintenance SP**” menu and run the service protocol “**Open Magnetic head guards**”.
- You may now switch off the QIASymphony SP instrument.
- Empty Liquid waste container.
 - Remove the liquid waste container from the “Waste” drawer.
 - Empty the liquid waste container according to laboratory guidelines.
 - Rinse the liquid waste container with ethanol.
 - Rinse the liquid waste container with deionized water.
 - Replace the liquid waste container in the “Waste” drawer.
- UV decontamination of the worktable
 - Before starting the UV irradiation procedure ensure that all samples, eluates, reagents, and consumables have been removed from the worktable. Close all drawers and the hood.
 - Enter the “Maintenance” Screen. Press “**Main Menu**” then press “**Maintenance SP**” in the “Main Menu” screen.
 - To start the UV cleanup procedure, press the “**Start UV light**” button. Enter the duration of the decontamination in minutes (minimum one hour).
 - A message appears asking you to check whether all plastic ware and consumables have been removed from the worktable. Press “**OK**” to start the UV irradiation procedure. Confirm that all removable objects have been removed from the worktable by pressing “**OK**”. The UV lamp then starts and the robotic arm sweeps over the worktable surface for the set irradiation time.

Note: To stop the UV irradiation procedure before the defined period of time has elapsed, press “**Cancel**”. The procedure will stop as soon as the robotic arm completes the current movement.

- Document completion of daily maintenance on the QIASymphony® SP Maintenance Log.

Weekly maintenance procedure

- Delete result files older than 10 days:
 - Press “**File Transfer**” in the “Main Menu”.
 - Select the “**In-/Output Files**” tab.
 - Press “**Delete Old Files**” in the command bar of the screen. A message appears asking if you want to delete files. Press “**Yes**” to delete the old files. After the files have been successfully deleted, a message will appear confirming the deletion. Press “**OK**” to confirm the message.
- Clean the touchscreen by wiping with ethanol. Then wipe with a cloth moistened with water and dry with paper towels.
- Clean the QIASymphony SP hood by wiping the surface with a soft lint-free cloth moistened with deionized water. Then wipe dry with a dry soft lint-free cloth or paper towel. **Important:** Do not use ethanol only use distilled water.
- Check the tightness of the tip adapter O-ring
 - In the “Main Menu” screen, press “**Service SP**”.
 - Select the service script “**CheckPipettingChannelORing.lua**”.
 - Press “**Start**” to start the tightness test.
 - Follow the instructions in the messages displayed on the touchscreen. When instructed to do so by the software, place an empty tip-rack containing 4 test tips into the tip rack slot given in the software message (see picture below).



Note: Do not start an inventory scan during the protocol run. When the inventory scan message appears, press **“No, nothing changed”**.

- If after running the tightness test for a particular tip adapter a message is displayed with “Failed”, the O-ring must be changed. If one tip-adapter fails the tightness test, we recommend changing all 4 O-rings at the same time.
- Replace the tip-adapter O-ring if necessary
 - Reference 9.5 Maintenance of the tip adapter O-ring in the QIASymphony® SP/AS User Manual — General Description for instructions.
- Document completion of weekly maintenance on the QIASymphony® SP Maintenance Log.

Monthly maintenance procedure

- Replace the tip-adapter O-rings
 - Reference Section 9.5 Maintenance of the tip adapter O-ring in the QIASymphony® SP/AS User Manual - General Description for instructions.
- Document completion of monthly maintenance on the QIASymphony® SP Maintenance Log.

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Section 3 Database Sample DNA Amplification Set-up using QIAgility

Note: Quantification prior to amplification is not required or optional for these samples.

Technical references:

- QIAgility® User Manual, 11/2011
- PowerPlex® 16 System Technical Manual, 05/2008

Cycling parameters for database samples (program pp16-32cyc) are as follows:

95°C for 11 minutes, then:

96°C for 1 minute, then:

ramp 100% to 94°C for 30 seconds
ramp 29% to 60°C for 30 seconds
ramp 23% to 70°C for 45 seconds
for 10 cycles, then:

ramp 100% to 90°C for 30 seconds
ramp 29% to 60°C for 30 seconds
ramp 23% to 70°C for 45 seconds
for 22 cycles, then:

60°C for 30 minutes
4°C hold

Before setting up the QIAgility:

- Ensure AB GeneAmp® PCR System 9700 thermal cycler has been turned on to ensure the instrument has time to properly warm up.
- If samples have been stored at 4°C prior to loading on the QIAgility, allow the samples to warm to room temperature and spin briefly using a centrifuge.
- Transfer the amplification reagents to the designated PCR set-up area.

Note: Do not expose reagents to light for extended periods of time.

- Ensure that all kit components have thawed completely before use. Vortex reagents and centrifuge briefly to ensure uniform mixing and collection of tube contents.

Note: Centrifugation of the primer mix should be minimal to avoid primers collecting at the bottom of the tube.

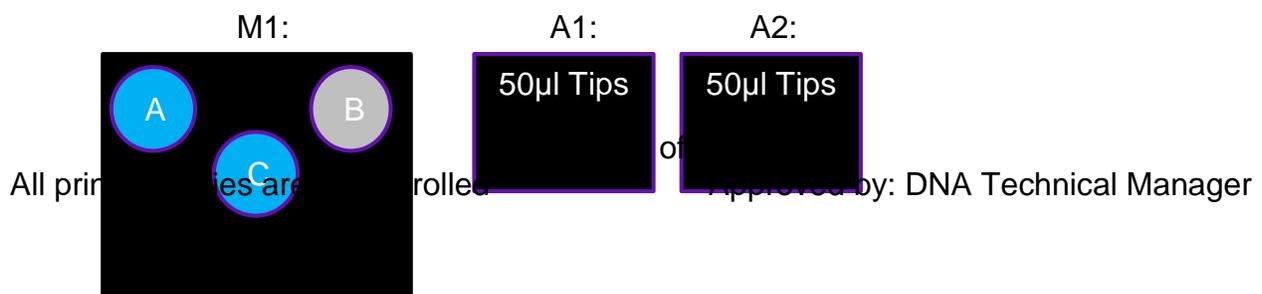
- Prepare the following sized tubes labeled A-E as follows:
 - A) Using a 5ml tube, pipette 1720 μ l of water into this tube.
(Water used to dilute samples)
 - B) Using a 1.5ml tube, pipette 20 μ l of working (diluted) positive control into this tube.
 - C) Using a 1.5ml tube, pipette 34.2 μ l of water into this tube.
(Water used for negative control)
 - D) Using a 1.5ml tube, prepare a PCR master mix by adding the following volumes of reagents:
 - 295 μ l Gold ST^{*}R 10x Buffer (2.5 μ l per sample)
 - 295 μ l PowerPlex[®] 16 10x Primer Pair Mix (2.5 μ l per sample)
 - 94.4 μ l AmpliTaq Gold[™] DNA Polymerase (0.8 μ l per sample)
 - E) Using a 1.5ml tube, pipette 29.2 μ l of water into this tube.
(Water used for positive control)

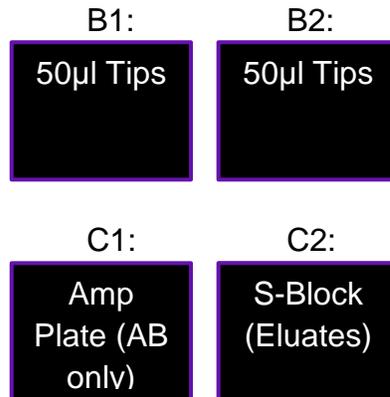
Note: All volumes include additional reagents and/or water necessary to run the protocol.

- Obtain an Applied Biosystems MicroAmp[®] Optical 96-well Reaction Plate. (Note: the use of an alternate plate has not been calibrated for this protocol.)
- Ensure that the power for the QIAgility has been switched on. The power switch can be located on the rear left of the instrument. A blue light on the front of the instrument will indicate the instrument is powered on.
- Click on the QIAgility icon to launch the software; it may take a minute to initialize.
- Navigate to the database amplification protocol by clicking **Recent** → **Browse** → **Alaska** → **Database Norm and amp in SBlocks_1 μ l**.

Setting up the QIAgility

- Open the QIAgility and load the deck as follows:





Note: When loading tips, there is only one correct orientation. Ensure tips are loaded correctly.

- To reset the tips, hover over the block of tips to reset. Using the mouse, right click and select **“Set all tips on current plate to available”**.

Note: Tips designated in blue are available and white are unavailable.

- Ensure tip waste box is attached and there is ample room for waste.
- Click the green arrow at the top of the screen. The “Save As” window appears. Enter the batch name under “File name:” and click **“Save”**.
- The “Checklist” screen appears. Review the messages and follow the prompts.

Note: A “Pre-Run Report” may be previewed by clicking **“Pre-Run Report”**. Click **“Close”** to return to the “Checklist” screen.

- Click **“OK”**.
- The run will begin and will take approximately 1 hour to process. Upon completion, the samples will be ready for amplification using Applied Biosystems 9700 thermal cyclers.
- Remove the S-Block containing the eluates and cover with a plastic seal. Store at 4°C. All extracts will be disposed of upon completion of the reviews and upload of the batch.
- Transfer the Amp Plate to the PCR room and place directly into the thermal cyclers.

- Store amplified products at 2-8°C. All amplified product will be disposed of upon completion of the reviews and upload of the batch.

Maintenance

The table below describes the types and frequencies of maintenance required and the personnel required to carry out the maintenance.

Type of task	Frequency	Personnel
Daily maintenance	At the end of each run and at the end of each day the instrument is in use	DNA analyst
Weekly maintenance	Once per week, if the instrument is in use, after the regular and daily maintenance	Laboratory technician

Daily maintenance procedure

Daily maintenance is required after each run on the QIAgility and at the end of the day.

- Wipe down with ethanol.
- Wipe with water and wipe dry with paper towels.

Note: Do not wipe the rails. These rails support the pipetting head and allow it to slide backwards and forwards easily. Wiping the rails will remove the grease and make them more susceptible to rust.

- You may now run another protocol or switch off the QIAgility instrument.

Weekly maintenance procedure

- Remove all loading blocks and the tip ejector chute from the worktable.

Note: Reference Section 8.2.2 of the QIAgility® User Manual for instructions on how to remove and replace the tip ejector chute.

- Rinse the blocks and the tip ejector chute with ethanol and rinse with de-ionized water.
- Dry with a soft paper towel.
- Replace the tip ejector chute.
- UV decontaminate the worktable for a minimum of one hour ensuring all samples, reagents, and consumables have been removed.
 - Click the light bulb button on the top bar of the software screen.
 - Use the arrows to adjust the time.
 - Press **“Start”**. An alert window appears. Verify all conditions are met and press **“Yes”** to start.
- Return all components to the worktable and close the hood.
- Document the completion of the weekly maintenance on the QIAgility® Maintenance Log.
- Switch off the QIAgility instrument.

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DNA Critical Reagent Verification Form
(to be completed as required for QIASymphony SP operation)

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All printed copies are uncontrolled

Approved by: DNA Technical Manager

Analyst:

Date:

Lot #

Expiration Date

QIASymphony Kits (for Database samples)

QIASymphony Reagent Cartridges

Buffer ATL

Proteinase K

Buffer ATL (if purchased separately)

Proteinase K (if purchased separately)

Note: Verification of reagents will be performed similar to EZ1 reagent cartridges. Please see FBWI 2012 (active version).

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QIASymphony® SP Maintenance Log for Calendar Year _____

Alaska State Tag # _____

S/N: _____

Day of	Task Completed (analyst initial in box)	Comments
	<input type="checkbox"/> QIASymphony maintenance completed <input type="checkbox"/> daily <input type="checkbox"/> weekly <input type="checkbox"/> monthly <input type="checkbox"/> preventative maintenance <input type="checkbox"/> service call	
	<input type="checkbox"/> QIASymphony maintenance completed	

	<input type="checkbox"/> daily <input type="checkbox"/> weekly <input type="checkbox"/> monthly <input type="checkbox"/> preventative maintenance <input type="checkbox"/> service call	
	<input type="checkbox"/> QIASymphony maintenance completed <input type="checkbox"/> daily <input type="checkbox"/> weekly <input type="checkbox"/> monthly <input type="checkbox"/> preventative maintenance <input type="checkbox"/> service call	
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	<input type="checkbox"/> QIASymphony maintenance completed <input type="checkbox"/> daily <input type="checkbox"/> weekly <input type="checkbox"/> monthly <input type="checkbox"/> preventative maintenance <input type="checkbox"/> service call	

QIAgility® Maintenance Log for Calendar Year _____
Alaska State Tag # _____
S/N: _____

Day of	Task Completed (analyst initial in box)	Comments
	<input type="checkbox"/> QIAgility maintenance completed <input type="checkbox"/> daily <input type="checkbox"/> weekly <input type="checkbox"/> service call	
	<input type="checkbox"/> QIAgility maintenance completed <input type="checkbox"/> daily <input type="checkbox"/> weekly <input type="checkbox"/> service call	
	<input type="checkbox"/> QIAgility maintenance completed <input type="checkbox"/> daily <input type="checkbox"/> weekly <input type="checkbox"/> service call	
	<input type="checkbox"/> QIAgility maintenance completed	

	<input type="checkbox"/> daily <input type="checkbox"/> weekly <input type="checkbox"/> service call	
	<input type="checkbox"/> QIAgility maintenance completed <input type="checkbox"/> daily <input type="checkbox"/> weekly <input type="checkbox"/> service call	
	<input type="checkbox"/> QIAgility maintenance completed <input type="checkbox"/> daily <input type="checkbox"/> weekly <input type="checkbox"/> service call	
	<input type="checkbox"/> QIAgility maintenance completed <input type="checkbox"/> daily <input type="checkbox"/> weekly <input type="checkbox"/> service call	
	<input type="checkbox"/> QIAgility maintenance completed <input type="checkbox"/> daily <input type="checkbox"/> weekly <input type="checkbox"/> service call	

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