# Axiom™ Propel Fast Wash Workflow, 96-Array Format

## SITE PREPARATION GUIDE

for use with:
Axiom™ Array Plates
Axiom™ Propel Fast Reagent Kits
Multidrop™ Combi Reagent Dispenser

**Catalog Numbers** 952371 and 952372
**Publication Number** MAN0019451
**Revision** D00



ThermoFisher SCIENTIFIC

| | |
|---|---|
| Affymetrix Pte Ltd \| 7 Gul Circle #2M-01 \| Keppel Logistics Building \| Singapore 629563 | Axiom™ Array Plates |
| Thermo Fisher Scientific Baltics UAB \| V.A. Graiciuno 8, LT-02241 \| Vilnius, Lithuania | Axiom™ Propel Fast Reagent Kits |
| Thermo Fisher Scientific Oy \| Ratastie 2 \| FI-01620 Vantaa \| Finland | Multidrop™ Combi Reagent Dispenser |

**Revision history: MAN0019451 D00 (English)**

| Revision | Date | Description |
|---|---|---|
| D00 | 10 March 2025 | Added note stating, "If using the Heratherm™ Advanced Protocol Microbiological Incubator, the convection setting should be turned off." |
| C.0 | 2 November 2023 | • Added Axiom™ 96-format Consumables Kit for QC (Windows™ 7) (Cat. No. 902909) as an additional option for UV-plates.<br>• Updated publication numbers in *Related documentation*.<br>• Added information for the GeneTitan™ MC Fast Scan Instrument. |

The information in this guide is subject to change without notice.

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# Contents

# Assay equipment and supplies required



This chapter includes the supplier and ordering information for the equipment, software, reagents, arrays, labware, and other consumables that have been verified for use with the Applied Biosystems™ Axiom™ Propel Fast Wash Workflow, 96-Array Format.

**Note:** Using equipment, labware, and consumables from sources other than those listed have not been verified with this assay and, therefore, assay performance can not be guaranteed.

## Arrays, reagents, and software required

Unless otherwise indicated, all materials are available through **thermofisher.com**. "MLS" indicates that the material is available from **fisherscientific.com** or another major laboratory supplier.

| ✓ | Item | Source |
|---|---|---|
| **Arrays** | | |
| ☐ | Axiom™ Array Plates or Axiom™ myDesign™ Array Plates (96-array format plate) | Contact Thermo Fisher Scientific |
| **Reagents** | | |
| ☐ | Axiom™ Propel Fast Reagent Kit, 4x96F (sufficient to process four 96-array format plates) or<br>Axiom™ Propel Fast Reagent Kit, 8x96F (sufficient to process eight 96-array format plates) | 952371<br>952372 |
| ☐ | Reduced EDTA TE Buffer | AAJ75793AE |
| ☐ | Genomic DNA Standard (Ref 103), 10 ng/µL | 951957 |
| ☐ | 2-Propanol, anhydrous, 99.5% (Isopropanol) | Sigma-Aldrich™, 278475 |
| ☐ | E-Gel™ *48* Agarose Gels, 4% | G800804 |

*(continued)*

| ✓ | Item | Source |
|---|---|---|
| ☐ | TrackIt™ Cyan/Orange Loading Buffer | 10482028 |
| ☐ | QIAGEN™ Multiplex PCR *Plus* Kit (100) | Fisher Scientific™, 206152 |
| ☐ | 25-bp DNA Ladder | 931343 |
| ☐ | UltraPure™ DNase/RNase-Free Distilled Water | 10977023 |
| ☐ | Reagent Alcohol, Certified, 70% (v/v) (Ethanol solution 70%, reagent grade) | Fisher Scientific™, LC222102 |
| **Software** | | |
| ☐ | GeneChip™ Command Console™ (GCC) | version 6.1.1 or later |
| ☐ | Axiom™ Analysis Suite | version 5.0 or later |

## Axiom™ Propel Fast Reagent Kits

**IMPORTANT!** The Applied Biosystems™ Axiom™ Propel 96F Fast Reagent Kits are for single use only. These large fill reagent kits are configured to include priming volumes for the Multidrop™ Combi cassettes and have been incorporated into the master mix formulations. Discard all excess reagents after use.

- Each Axiom™ Propel Fast Reagent Kit, 8x96F , Cat. No. 952372, is sufficient for 8 Axiom™ Array Plates (96-array format)
- Each Axiom™ Propel Fast Reagent Kit, 4x96F , Cat. No. 952371, is sufficient for 4 Axiom™ Array Plates (96-array format)

| Component | 4X kit[1] | 8X kit[1] | Storage |
|---|---|---|---|
| **Axiom™ Propel Reagent Kit Module 1 for 96F array plates only, 4x96F** or **Axiom™ Propel Reagent Kit Module 1 for 96F array plates only, 8x96F** | **952262** | **952269** | –25°C to –15°C |
| Axiom™ Propel 10X Denat Solution | | | |
| Axiom™ Propel Neutral Solution | 952176 | 951968 | |
| Axiom™ Propel Water | 952173 | 951965 | |
| Axiom™ Propel Amp Solution | 952177 | 951969 | |
| Axiom™ Propel Amp Enzyme | 952174 | 951966 | |
| | 952175 | 951967 | |
| **Axiom™ Propel Reagent Kit Module 2-1 for 96F or 384HT** or **Axiom™ Propel Reagent Kit Module 2-1 for 96F array plates only**—Box 1 of 2 | **952263** | **952337** | –25°C to –15°C |
| Axiom™ Propel Frag Enzyme | | | |
| Axiom™ Propel 10X Frag Buffer | 952181 | 951972 | |
| Axiom™ Propel Precip Solution 2 | 952179 | 951971 | |
| Axiom™ Propel Hyb Buffer | 952178 | 951970 | |
| Axiom™ Propel Hyb Solution 1 | 952182 | 951973 | |
| | 952183 | 951974 | |
| **Axiom™ Propel Reagent Kit Module 2-2 for 96F or 384HT** or **Axiom™ Propel Reagent Kit Module 2-2 for 96F array plates only**—Box 2 of 2 | **952265** | **952338** | 2°C to 8°C |
| Axiom™ Propel Frag Diluent | | | |
| Axiom™ Propel Frag Reaction Stop | 952184 | 951975 | |
| Axiom™ Propel Precip Solution 1 | 952190 | 951976 | |
| Axiom™ Propel Resuspension Buffer | 952203 | 951977 | |
| Axiom™ Propel Hyb Solution 2 | 952206 | 951978 | |
| | 951979 | 951979 | |
| **Module 3** | — | — | Room temperature |
| Axiom™ Wash Buffer A | 901446 | 901446 | |
| Axiom™ Wash Buffer B | 901447 | 901447 | |
| Axiom™ Water | 901578 | 901578 | |

*(continued)*

| Component | 4X kit[1] | 8X kit[1] | Storage |
|---|---|---|---|
| **Axiom™ Propel Fast Wash Reagent Kit Module 4-1 for 96F or 384HT** or **Axiom™ Propel Fast Wash Reagent Kit Module 4-1 for 96F array plates only**—Box 1 of 2 | **952369** | **952370** | –25°C to –15°C |
| Axiom™ Propel Ligation Buffer | 952208 | 951980 | |
| Axiom™ Fast Ligation Enzyme | 952367 | 952368 | |
| Axiom™ Propel Ligation Solution 1 | 952212 | 951982 | |
| Axiom™ Propel Probe Mix 1 | 952213 | 951983 | |
| Axiom™ Propel Stain Buffer | 952214 | 951984 | |
| Axiom™ Propel Stabilize Solution | 952215 | 951985 | |
| **Axiom™ Propel Reagent Kit Module 4-2 for 96F or 384HT** or **Axiom™ Propel Reagent Kit Module 4-2 for 96F array plates only**—Box 2 of 2 | **952268** | **952340** | 2°C to 8°C |
| Axiom™ Propel Wash A | 952218 | 951988 | |
| Axiom™ Propel Probe Mix 2 | 952217 | 951987 | |
| Axiom™ Propel Ligation Solution 2 | 952216 | 951986 | |
| Axiom™ Propel Stain 1-A | 952219 | 951989 | |
| Axiom™ Propel Stain 2-A | 952231 | 951990 | |
| Axiom™ Propel Stabilize Diluent | 952248 | 951991 | |
| Axiom™ Water | 952177 | 952177 | |
| Axiom™ Propel Hold Buffer | 952254 | 951992 | |
| Axiom™ Propel Stain 1-B | 952258 | 951993 | |
| Axiom™ Propel Stain 2-B | 952260 | 951994 | |

[1] Component Part Numbers are for identification puproses only. Kit components are not available for purchase separately.

# Equipment required

The following table lists the equipment required for the Axiom™ Propel Fast Wash Workflow, 96-Array Format Assay. Subsequent pages detail the specific requirements for each item.

| ✓ | Item | Details |
|---|---|---|
| ☐ | Preamplification/amplification staging area | page 9 |
| ☐ | GeneTitan™ Multi-Channel Instrument and the GeneTitan™ MC Fast Scan Instrument GeneChip™ Command Console™ software version 6.1.1 or later (GCC version 7.0.1 required for GeneTitan™ MC Fast Scan Instrument) | page 9 |
| ☐ | Microplate dispenser<br>• (Recommended) Multidrop™ Combi Reagent Dispenser with SMART 2 option<br>• Multidrop™ Combi Reagent Dispenser | page 10 |
| ☐ | Plate sealer<br>• Thermo Scientific™ ALPS™ 3000 Automated Microplate Heat Sealer | page 11 |
| ☐ | Plate centrifuge<br>• Sorvall™ X4R Pro-MD Centrifuge<br>• Eppendorf™ Centrifuge 5810 R | page 12 |
| ☐ | Oven requirements<br>• Thermo Scientific™ Heratherm™ Advanced Protocol Microbiological Incubator, capacity 66 L<br>• BINDER™ ED 56 Drying and Heating Chamber<br>• BINDER™ BD 56 Standard-Incubator with natural convection | page 12 |
| ☐ | Shakers | page 13 |
| ☐ | Vortex mixer | page 14 |
| ☐ | Mini centrifuge | page 14 |
| ☐ | Liquid handler<br>• VIAFLO™ 96 Base Unit or VIAFLO™ 384 Base Unit | page 14 |
| ☐ | Thermal cycler recommendations<br>• Applied Biosystems™ ProFlex™ 96-well PCR System<br>• Applied Biosystems™ ProFlex™ 2 × 96-well PCR System | page 15 |
| ☐ | Spectrophotometer<br>• Multiskan™ Sky Microplate Spectrophotometer | page 15 |
| ☐ | Fume hood | page 15 |

**Table 1 Equipment, reagents, and gels required to run QC steps.**

| Item | Source |
|---|---|
| E-Gel™ Power Snap Plus Electrophoresis Device | G9110 |
| iBright™ CL750 Imaging System | A44116 |
| Invitrogen™ E-Gel™ *48* Agarose Gels, 4% (for Axiom™ QC) | G800804 |
| Invitrogen™ E-Gel™ *48* Agarose Gel, 1% (for gDNA QC) | G800801 |
| Invitrogen™ E-Gel™ 96 High Range DNA Marker (for gDNA QC) | 12352019 |
| Invitrogen™ *Redi*Load™ Loading Buffer (for gDNA QC) | 750026 |
| Applied Biosystems™25-bp DNA Ladder or equivalent (for Axiom™ QC) | 931343 |
| Invitrogen™ TrackIt™ Cyan/Orange Loading Buffer (for Axiom™ QC) | 10482028 |
| UltraPure™ DNase/RNase-Free Distilled Water | 10977023 |

## Preamplification/amplification staging area

Precautions are required when manipulating genomic DNA to avoid contamination with foreign DNA amplified in other reactions and procedures. It is recommended that genomic DNA manipulations are performed in a dedicated preamplification room or in an area separate from the main laboratory.

This preamplification area must have a dedicated set of pipettes and plasticware. If no dedicated area is available, use of a dedicated bench or a dedicated biosafety hood and dedicated pipettes is suggested. If no dedicated bench or biosafety hood is available, a set of dedicated pipettes is recommended.

## GeneTitan™ Multi-Channel Instrument and the GeneTitan™ MC Fast Scan Instrument

The GeneTitan™ Multi-Channel (MC) Instrument and the GeneTitan™ MC Fast Scan Instrument automate array processing from target hybridization to data generation by combining a hybridization oven, fluidics processing, and state-of-the art imaging device into a single bench-top instrument.

When processing array plates from the Axiom™ Propel Fast Wash Workflow, 96-Array Format, the GeneTitan™ MC Instrument must be running with GeneChip™ Command Console™ software version 6.1.1 or later.

For a complete list of all equipment and supplies required for GeneTitan™ Multi-Channel Instrument installation and operation, consult the *GeneTitan™ Multi-Channel Instrument Site Preparation Guide* (Pub. No. 08-0305).

Contact Thermo Fisher Scientific for ordering information.

## Microplate dispenser

Unless otherwise indicated, all materials are available through **thermofisher.com**. "MLS" indicates that the material is available from **fisherscientific.com** or another major laboratory supplier.

**Table 2 Multidrop™ Combi Reagent Dispenser and cassette information.**

| Multidrop™ Combi Reagent Dispenser | Recommended Standard Tubing Cassette (with plastic tip) |
|---|---|
| Multidrop™ Combi+ Reagent Dispenser<br>5840330 | Standard tube plastic tip dispensing cassette<br>1-pack: 24072670<br>5-pack: 24072671<br>10-pack: 24072672 |
| Multidrop™ Combi SMART+ Reagent Dispenser (includes RFID)<br>5840340 | SMART+ standard tube dispensing cassette<br>1-pack: N22704 |

**Table 3 Discontinued Multidrop™ Combi Reagent Dispenser and cassette information: Existing Multidrop™ Combi Reagent Dispenser listed in the table below continue to be compatible with the Axiom™ Propel Fast Wash Workflow, 96-Array Format using the cassettes listed.**

| Discontinued Instrument Models | Recommended Standard Tubing Cassette (with plastic tip) |
|---|---|
| Multidrop™ Combi Reagent Dispenser<br>Cat. No. 5840300 | Standard tube plastic tip dispensing cassette<br>1-pack: 24072670<br>5-pack: 24072671<br>10-pack: 24072672 |
| Multidrop™ Combi Reagent Dispenser with SMART 2 option<br>Cat. No. 5840320 | Standard tube plastic tip dispensing cassette<br>1-pack: 24072670<br>5-pack: 24072671<br>10-pack: 24072672 |

**Note:** The Multidrop™ Combi SMART2 Reagent Dispenser no longer supports RFID tracking. All the cassettes, with RFID or without, can be used on either Combi+/Combi or Smart+/Smart2 instrument except that tracking capability is only available for matched RFID cassette and RFID Smart instrument.

**Note:** The Multidrop™ Combi Reagent Dispensers must be installed and tested by a Field Application Scientist before use.

Install the Multidrop™ Combi Reagent Dispensers in an area away from other instrument exhaust fans. Exhaust fans can generate particulates in the air and cause temperature fluctuations in the Multidrop™ Combi working environment.

## Compact in-Tool Ionizing Blower 6432E

Discharge specifications: 2 seconds at 12 in (30 cm), fan high (1,000—100V)

The following ionizing air blower meets the requirements for the Axiom™ Propel Fast Wash Workflow, 96-Array Format.

| Item | Source |
|---|---|
| Compact in-Tool Ionizing Blower 6432E or equivalent | Simco-Ion™ Technology, 6432E, or **MLS** |

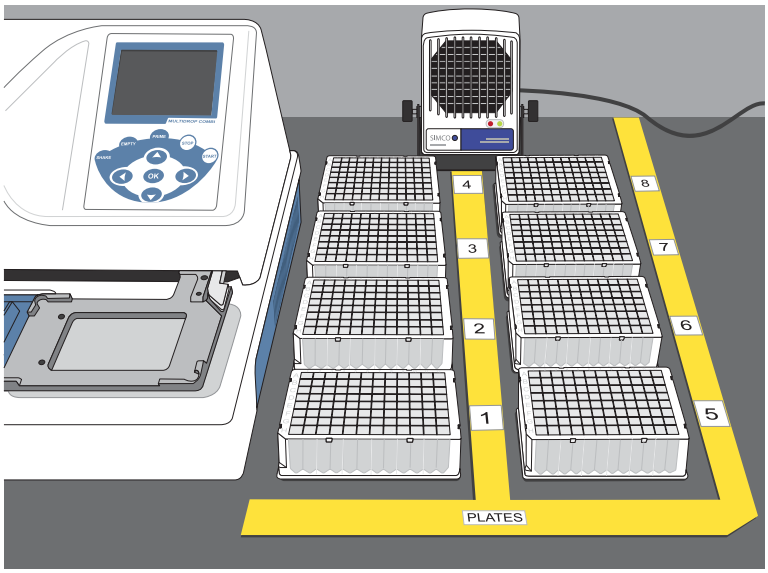


**Figure 1 Ionizing air blower placement.** Place consumables (96-deepwell plates, scan trays, and stain trays) to be ionized within a distance of 12" x 36" from the ion blower for at least 10 seconds before using.

## Plate sealer

The following plate sealer meets the requirements for the Axiom™ Propel Fast Wash Workflow, 96-Array Format.

| Item | Source |
|---|---|
| Thermo Scientific™ ALPS™ 3000 Automated Microplate Heat Sealer[1,2] | AB3000 |

[1] The Easy Peel Seal is the sealing material used in the ALPS™ 3000 Automated Microplate Heat Sealer.
[2] Clean dry air (CDA) is requireor the heat sealer.

On receipt of shipment, open the package to check for damage that might have occured during shipment. Contact your local Field Application Scientist to set up the heat sealer if the service is not provided by the local Field Service Engineer.

Ensure that proper air supply is available. Air requirements: 50L/min at 80–87psi.

## Plate centrifuge

The plate centrifuges listed are recommended for the Axiom™ Propel Fast Wash Workflow, 96-Array Format. (See Table 4.) When centrifuging and drying pellets, the centrifuge must be able to centrifuge plates at:

- Rcf: 3,200 × *g* with an appropriate rotor-bucket combination
- Temperature: 4°C

Relative centrifugal force (rcf) is calculated using the following formula:

$rcf = (1.118 \times 10^{-5}) R S^2$

Where R is the radius of the rotor in centimeters, and S is the speed of the centrifuge in revolutions per minute.

In addition, the bottom of the rotor buckets must be soft rubber to help ensure that the 96-deepwell plates do not crack. Do not use buckets where the plates sit directly on a metal or hard plastic bottom.

**Table 4 Plate centrifuge recommendations for the Axiom™ Propel Fast Wash Workflow, 96-Array Format.**

| Item | Source |
|---|---|
| Sorvall™ X4R Pro-MD Centrifuge, with: | 75009520 (220 V-240 V 50 Hz/230 V, 60 Hz)<br>75009521 (120 V, 50—60 Hz)<br>75009620 (220 V, 60 Hz) |
| • TX-1000 Swinging Bucket Rotor Body<br>• Adapter for TX-1000 Swinging Bucket Rotor<br>• Buckets for TX-1000 Rotor | • 75003017<br>• 75007303 (pack of 4)<br>• 75003001 (set of 4) |
| Eppendorf™ Centrifuge 5810 R, with: | Fisher Scientific™, 022625501 (120 V, 50—60 Hz, 15 A)<br>Fisher Scientific™, 022625101 (120 V, 50—60 Hz, 20 A) |
| • Rotor A-4-81, with 4 MTP/Flex buckets | • Fisher Scientific™, 022638807 (rotor) |

## Oven requirements

We recommend using either the Thermo Scientific™ Heratherm™ Advanced Protocol Microbiological Incubator, BINDER™ ED 56 Drying and Heating Chamber, or the BINDER™ BD 56 Standard-Incubator with natural convection that are listed in the following table. If another oven is used, it must meet the following requirements.

- Be able to maintain a constant temperature of 37°C for at least 24 hours, and have a temperature accuracy of ±1°C, and
- Be able to maintain a constant temperature of 48°C for at least 24 hours, and have a temperature accuracy of ±1°C.

| Item | Source |
|---|---|
| Thermo Scientific™ Heratherm™ Advanced Protocol Microbiological Incubator, capacity 66 L<br>• 120V, 60 Hz<br>• 230V, 50/60 Hz<br>See note below. | <br><br>• 51028066<br>• 51028133 |
| BINDER™ ED 56 Drying and Heating Chamber<br>• ED056UL-120V Voltage: 120 V 1~60 Hz<br>• ED056-230V Voltage: 230 V 1~50/60 Hz | <br>• BINDER™, 9010-0334<br>• BINDER™, 9010-0333 |
| BINDER™ BD 56 Standard-Incubator with natural convection<br>• BD056UL-120V Voltage: 120 V 1~60 Hz<br>• BD056-230V Voltage: 230 V 1~50/60 Hz | <br>• BINDER™, 9010-0324<br>• BINDER™, 9010-0323 |

**Note:** If using the Heratherm™ Advanced Protocol Microbiological Incubator, the convection setting should be turned off.

## Shakers

The following shakers are required for use in the Axiom™ Propel Fast Wash Workflow, 96-Array Format.

Unless otherwise indicated, all materials are available through **thermofisher.com**. "MLS" indicates that the material is available from **fisherscientific.com** or another major laboratory supplier.

**IMPORTANT!** Both types of shakers (Thermo Scientific™ Digital Microplate Shaker and VWR Signature™ High-Speed Microplate Shaker) are required and are not interchangeable. Use only the shaker specified in the instructions for the assay stage.

| Item | Source |
|---|---|
| **Shaker, 0—1,200 rpm** | |
| Thermo Scientific™ Digital Microplate Shaker | 88882005 or 88882006 |
| **High speed shaker, 0—2,500 rpm** | |
| VWR Signature™ High-Speed Microplate Shaker | VWR, 10027-220 |

## Vortex mixer

A vortex mixer is required for use in the Axiom™ Propel Fast Wash Workflow, 96-Array Format.

Unless otherwise indicated, all materials are available through **thermofisher.com**. "MLS" indicates that the material is available from **fisherscientific.com** or another major laboratory supplier.

| Item | Source |
|---|---|
| Vortex mixer | **MLS** |

## Mini centrifuge

A mini centrifuge is required for use in the Axiom™ Propel Fast Wash Workflow, 96-Array Format.

Unless otherwise indicated, all materials are available through **thermofisher.com**. "MLS" indicates that the material is available from **fisherscientific.com** or another major laboratory supplier.

| Item | Source |
|---|---|
| Mini centrifuge | **MLS** |

## Liquid handler

One VIAFLO™ liquid handler is recommended for the Axiom™ Propel Fast Wash Workflow, 96-Array Format.

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**Note:** If running both Axiom™ 96-array format plates and Axiom™ 384HT array plates and only one VIAFLO™ unit can be purchased, we recommend buying a VIAFLO™ 96 Base Unit to process both 96-array format and 384HT arrays. Refer to the Axiom™ Propel XPRES 384HT Workflow Site Preparation Guide for information on the VIAFLO™ 96 Base Unit. Contact your Field Application Scientist for more details.

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| Item | Source |
|---|---|
| VIAFLO™ 96 Base Unit, or<br>VIAFLO™ 384 Base Unit with: | INTEGRA Biosciences, 6001 or 6031 |
| ☐ 96 Channel Pipetting Head (5 µL to 125 µL) | INTEGRA Biosciences, 6102 |
| ☐ Plate Holder—Three position stage (for 96 and 384 well plates) | INTEGRA Biosciences, 6230 |
| ☐ Installation and Training VIAFLO (required) | INTEGRA Biosciences, 999110 |

## Thermal cycler recommendations

We have verified the performance of this assay using the thermal cyclers that are listed in the following table in their 96-well block configurations.

| Verified thermal cyclers | Source |
|---|---|
| Applied Biosystems™ ProFlex™ 96-well PCR System[1] | 4484075 |
| Applied Biosystems™ ProFlex™ 2 × 96-well PCR System[1] | 4484076 |

[1] The ramp rate on the thermal cycler can be programmed to 6.0C/sec (maximum).

### Thermal cycler protocol

**IMPORTANT!** Always use the heated lid option when programming a protocol. See the appropriate thermal cycler user guide for programming information.

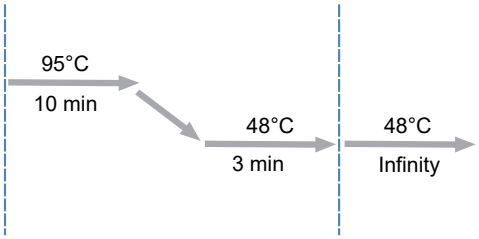



**Figure 2 Axiom Denature thermal cycler protocol (Stage 6)**

**WARNING!** Evaporation during denaturation can negatively affect assay performance. Use the recommended thermal cycler consumables and sealing film to eliminate condensation and evaporation.

## Spectrophotometer

Specifications: Must be able to read DNA samples using UV/VIS absorbance setting at 260 nm, 280 nm and 320 nm wavelengths.

We recommend using the following spectrophotometer, or equivalent.

| Item | Source |
|---|---|
| Multiskan™ SkyHigh Microplate Spectrophotometer | A51119500C |

## Fume hood

Some procedures in the assay require the use of adequate local or general ventilation to keep airborne concentrations low. A fume hood is a way to achieve the desired concentration. Therefore, a fume hood is strongly recommended for several steps of this assay.

# Labware and accessories required

## Labware and consumable ordering information

Unless otherwise indicated, all materials are available through **thermofisher.com**. "MLS" indicates that the material is available from **fisherscientific.com** or another major laboratory supplier.

**Table 5 Labware and consumable images and ordering information.**

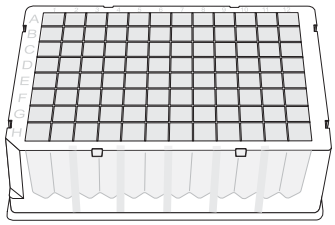
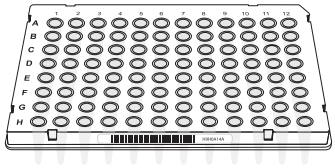
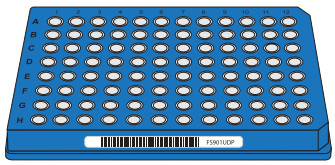
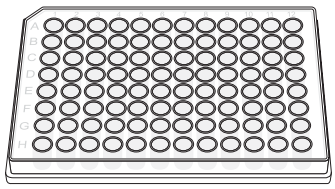
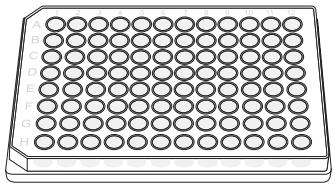
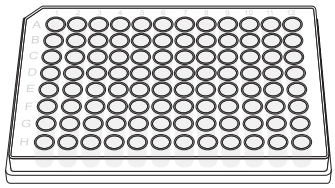
| Item | Source | Image |
|---|---|---|
| Abgene™ 96 Well 2.2 mL Polypropylene Deepwell Storage Plate, square wells, V-bottom<br>**Note:** This plate is referred to as “96-deepwell plate” throughout this document. | Fisher Scientific™, AB0932 |  |
| MicroAmp™ EnduraPlate™ Optical 96-Well Clear Reaction Plates with Barcode (half skirt)<br>**Note:** This plate is referred to as “half-skirted 96-well PCR plate” throughout this document. | 4483354 |  |
| MicroAmp™ EnduraPlate™ Optical 96-Well Full-Skirted Plates with Barcode, Blue | A31727 |  |
| **OD Plate, option 1:**<br>Corning™ UV-Transparent Microplate<br>Axiom™ 96-format Consumables Kit for QC, 902909.<br>Also available from Fisher Scientific™, 07-200-623 | **OD Plate, option 1:**<br>Corning™ UV-Transparent Microplate |  |
| **OD Plate, option 2:**<br>Greiner Bio-One™ UV-Star™ 96-Well UV Spectroscopy Microplate<br>Fisher Scientific™, 07-000-407 | **OD Plate, option 2:**<br>Greiner Bio-One™ UV-Star™ 96-Well UV Spectroscopy Microplate |  |
| Corning™ Clear Polystyrene 96-Well Microplate<br>**Note:** This plate is used as a reusable plate holder for the MicroAmp™ EnduraPlate™ Optical 96-Well Clear Reaction Plate on the INTEGRA Biosciences VIAFLO™ stage during Stage 5A: In-process QC to Stage 6: Denature the target and transfer to hybridization tray. | Fisher Scientific™, 07-200-103 |  |

**Table 5 Labware and consumable images and ordering information.** *(continued)*

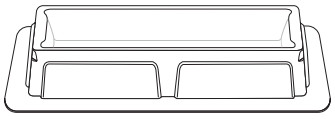
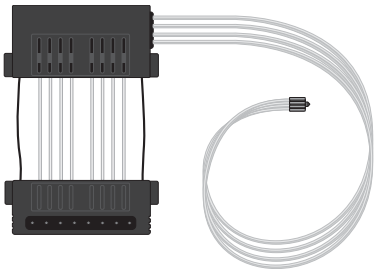
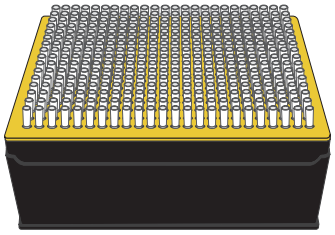
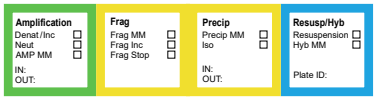
| Item | Source | Image |
|---|---|---|
| Matrix™ Reagent Reservoir, 25 mL | Fisher Scientific™, 809311 |  |
| SMART 2 Standard tube dispensing cassette | N15137, single cassette |  |
| Pipette tips, 1,000 µL | **MLS** | |
| Serological pipettes, following sizes<br>• 5 mL<br>• 10 mL<br>• 25 mL<br>• 50 mL | **MLS** | |
| Electronic pipettor (for serological pipettes) | **MLS** | |
| XYZ GripTips™, 125 µL, 5 XYZ Racks of 384 Tips, Sterile, Filter | INTEGRA Biosciences, 6465 |  |
| Axiom™ Propel 96F Tracker Label[1] | 952373 (Contains a sheet of 8 labels.) |  |
| 50-mL centrifuge tubes | **MLS** |  |

**Table 5 Labware and consumable images and ordering information.** *(continued)*

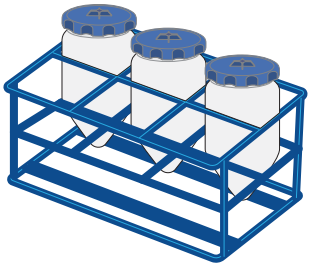
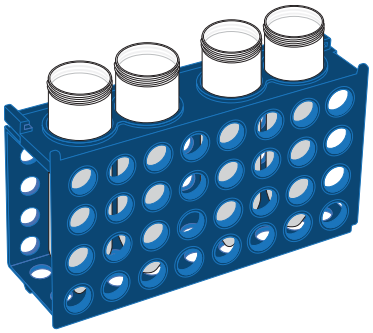
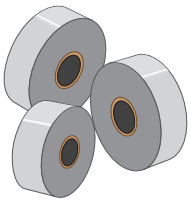
| Item | Source | Image |
|---|---|---|
| Nunc™ 250 mL Wide Mouth Conical Centrifuge Tube | 376814 |  |
| Nunc™ Conical Tube Rack | 374179 |  |
| Fisherbrand™ 4-Way Tube Rack | Fisher Scientific™, 03-448-12 |  |
| BTL Safety Carrier, black<br>**Note:** This carrier is recommended as the secondary liquid waste container for the Multidrop™ Combi. | Fisher Scientific™, 50-109-4650 |  |
| Easy Peel Seal<br>**Note:** The Easy Peel Seal is the sealing material used in the ALPS™ 3000 Automated Microplate Heat Sealer. | AB-3739 |  |

**Table 5 Labware and consumable images and ordering information.** *(continued)*

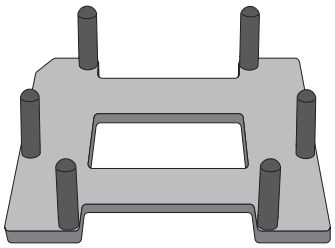
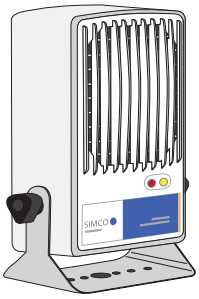
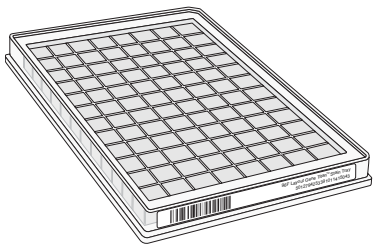
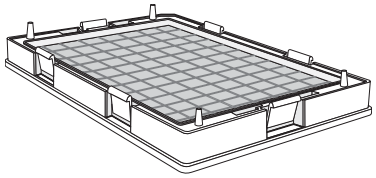
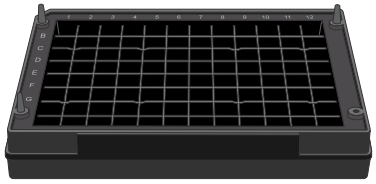
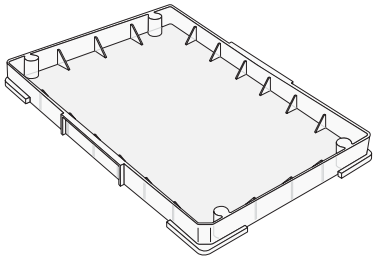
| Item | Source | Image |
|---|---|---|
| MicroAmp™ Clear Adhesive Film | 4306311 |  |
| Plate Alignment Tool | 13-0401 |  |
| minION™2 Ionizing Air Blower, or equivalent | **MLS** |  |
| GeneTitan™ ZeroStat AntiStatic Gun and Ion-Indicator Cap<br>**Note:** The GeneTitan™ ZeroStat AntiStatic Gun can be used as an alternative if the minION™2 Ionizing Air Blower is not available. | 74-0014 |  |
| Balance for gravimetric checks.<br>• readability of 0.01 g or finer<br>• maximum capacity of at least 300 g | **MLS** | |
| GeneTitan™ 96F Barcoded Stain Trays, bulk[2], quantity = 50 | 952376 |  |

**Table 5 Labware and consumable images and ordering information.** *(continued)*

| Item | Source | Image |
|---|---|---|
| GeneTitan™ Hybridization Trays, bulk[2], quantity = 40 | 952357 |  |
| GeneTitan™ Scan Trays, bulk[2], quantity = 40 | 952358 |  |
| GeneTitan™ Tray Covers, bulk[2] (for stain and scan trays), quantity = 50 | 952359 |  |

[1] The Axiom™ Propel 96F Tracker Label (Cat. No. 952373) contains 8 labels; 1 each is required to process using 1 Axiom™ Propel Fast Reagents kit.

[2] These trays are required for processing the Axiom™ Array Plates on the GeneTitan™ Multi-Channel Instrument.

## Multidrop™ Combi protocol names and parameters

**Table 6 Protocol names and parameters for the Axiom™ Propel Workflow, 96-Array Format**

| Protocol name | Cassette | Plate type | Set point | Speed | Plate name |
|---|---|---|---|---|---|
| 96-Den-20 | Standard tubing | 96 DW (44mm) | 20 µL | High | 96-deepwell plate |
| 96-Neu-130 | Standard tubing | 96 DW (44mm) | 130 µL | Medium | 96-deepwell plate |
| 96-Amp-230 | Standard tubing | 96 DW (44mm) | 230 µL | Medium | 96-deepwell plate |
| 96-Frag-60 | Standard tubing | 96 DW (44mm) | 60 µL | Medium | 96-deepwell plate |
| 96-Stop-20 | Standard tubing | 96 DW (44mm) | 20 µL | High | 96-deepwell plate |
| 96-Pre-220 | Standard tubing | 96 DW (44mm) | 220 µL | Medium | 96-deepwell plate |
| 96-Iso-660 | Standard tubing | 96 DW (44mm) | 660 µL | Medium | 96-deepwell plate |
| 96-Res-35 | Standard tubing | 96 DW (44mm) | 35 µL | Medium | 96-deepwell plate |
| 96-Hyb-80 | Standard tubing | 96 DW (44mm) | 80 µL | Medium | 96-deepwell plate |
| 96-Scan-150 | Standard tubing | 96_Scan_Tray | 150 µL | High | GeneTitan™ scan tray |
| 96-Stain-110 | Standard tubing | 96_Stain_Tray | 110 µL | High | GeneTitan™ stain tray |

**Table 6 Protocol names and parameters for the Axiom Propel Workflow, 96-Array Format** *(continued)*

| Protocol name | Cassette | Plate type | Set point | Speed | Plate name |
|---|---|---|---|---|---|
| 96-QC-Dil-55 | Standard tubing | 96 standard (15mm) | 55 µL | Medium | MicroAmp™ EnduraPlate™ Optical 96-Well Full-Skirted Plates with Barcode, Blue |
| 96-QC-OD-90 | Standard tubing | 96 standard (15mm) | 90 µL | Medium | OD plate |
| 96-QC-Gel-150 | Standard tubing | 96 standard (15mm) | 150 µL | Medium | MicroAmp™ EnduraPlate™ Optical 96-Well Full-Skirted Plates with Barcode, Blue |

## GeneTitan™ bulk consumables

GeneTitan™ trays are required for processing 96-array format plates on the GeneTitan™ MC Instrument or the GeneTitan™ MC Fast Scan Instrument.

**Table 7 GeneTitan™ consumables kit available.**

| Contents | Quantity | Source |
|---|---|---|
| GeneTitan™ 96F Barcoded Stain Trays, bulk | 50 | 952376 |
| GeneTitan™ Hybridization Trays, bulk | 40 | 952357 |
| GeneTitan™ Scan Trays, bulk | 40 | 952358 |
| GeneTitan™ Tray Covers, bulk (for stain trays) | 50 | 952359 |

**Note:** All covers must have barcodes. Discard any cover without a barcode.

**Table 8 Number of GeneTitan™ consumables required for processing.**

| Number of array plates | 96-layout hybridization tray | 96-layout stain tray | 96-layout scan tray | 96-layout scan and stain tray cover |
|---|---|---|---|---|
| 4 | 4 | 20 | 4 | 24 |
| 8 | 8 | 40 | 8 | 48 |

# Training kits

## Axiom™ Propel Fast Reagent Kit, 4x96F

The Axiom™ Propel Fast Wash Training Kit, 4x96F (Cat. No. 952416) is used for on-site customer training by the local field application scientist.

- Contains the reagents and GeneTitan™ consumables sufficient to process 1 training run and 1 proficiency run.
- The customer is required to provide 4 additional 96-array format plates of their choice (custom or catalog), and 4×96 customer samples (2 each for the training and proficiency runs).

  Optionally, the customer can purchase 4 additional Axiom™ PMD Array Plates and 4 additional Axiom™ DNA Training Plates, 96F. This additional PMD data may not be useful, thus, using the customer's own array plate and samples is highly recommended.
- Recommended training run: Two Axiom™ PMD Array Plates processed with samples from Axiom™ DNA Training Plate, 96F (25 µL) and 2 Axiom™ 96-array format plates of the customer's choice, processed with customer-provided DNA samples.
- Recommended proficiency run: Two Axiom™ PMD Array Plates processed with samples from Axiom™ DNA Training Plate, 96F (25 µL) and 2 Axiom™ 96-array format plates of customer's choice, processed with customer-provided DNA samples.
- Training evaluation is based on the data from the 2 Axiom™ PMD Array Plates processed with samples from Axiom™ DNA Training Plate, 96F (25 µL).

## Training kit content, 4x96F and 8x96F

**Table 9 Axiom™ Propel Fast Wash Training Kit, 4x96F (Cat. No. 952416) content**

| Quantity | Kit component |
|---|---|
| 2 | Axiom™ Propel Fast Reagent Kit, 4x96F (952371) |
| 2 | Axiom™ DNA Training Plate, 96F (25 µL) (902451) |
| 4 | Axiom™ Precision Medicine Diversity Research Array (PMD Array) (951958) |
| 8 | Axiom™ GeneTitan™ Barcoded Consumables Kit, 1x96 format (952375) |

**Note:** Optional purchase for Axiom™ training: Genomic DNA Standard (Ref 103), 10 ng/µL (Cat. No. 951957) x 2.

**Table 10 Axiom™ Propel Fast Wash Training Kit, 8x96F (Cat. No. 952417) content**

| Quantity | Kit component |
|---|---|
| 2 | Axiom™ Propel Fast Reagent Kit, 8x96F (952372) |
| 2 | Axiom™ DNA Training Plate, 96F (25 µL) (902451)[1] |

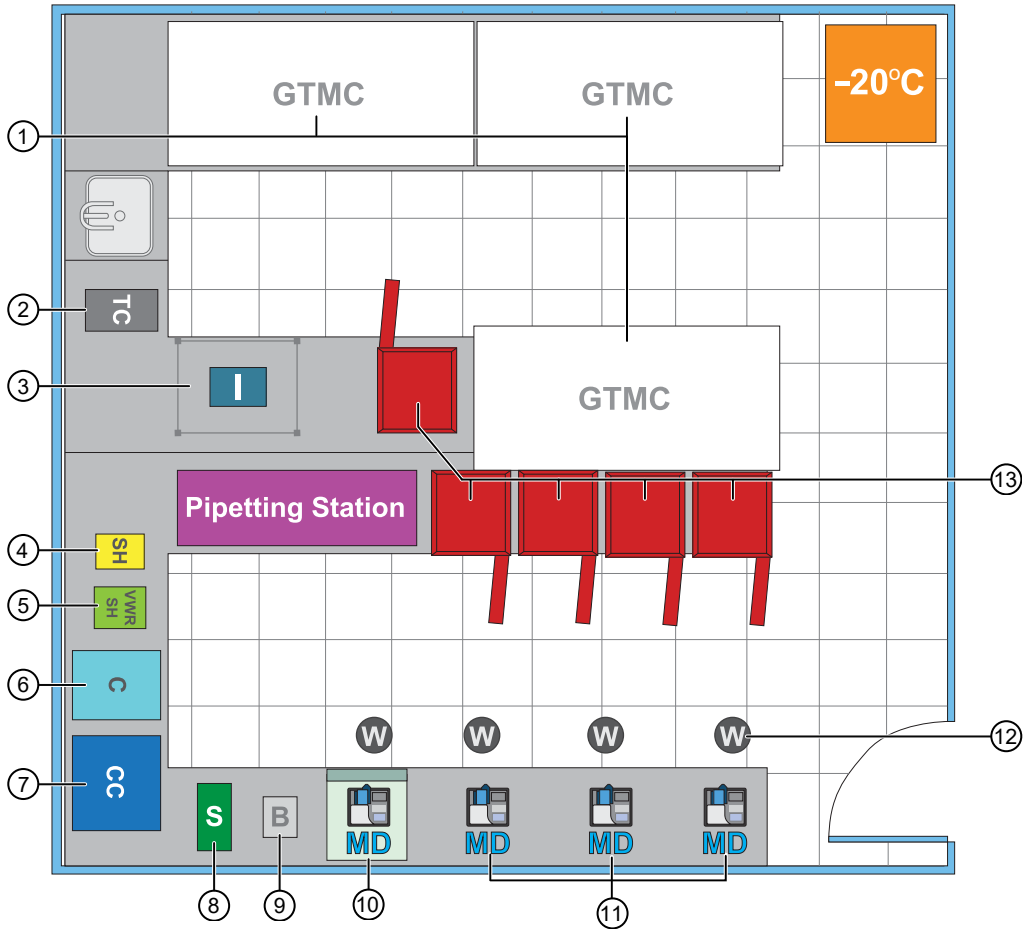
**Table 10 Axiom Propel Fast Wash Training Kit, 8x96F (Cat. No. 952417) content** *(continued)*

| Quantity | Kit component |
|---|---|
| 4 | Axiom™ Precision Medicine Diversity Research Array (PMD Array) (951958)[2] |
| 16 | Axiom™ GeneTitan™ Barcoded Consumables Kit, 1x96 format (952375)[3] |

[1] Can be customized with 1–2 kits, as needed.
[2] Can be customized with 2–4 PMD Array Plates, as needed.
[3] Can be customized with bulk consumable kits.

**Note:** The Axiom™ Propel Fast Wash Training Kit, 8x96F is intended for Propel customers that require scale up training. Thus, kit components can be customized as needed. Contact your Field Application Scientist and/or sales account manager for customization options.

# Laboratory layout example for 100K samples/year throughput




1. GeneTitan™ MC Instrument (7.7 x 3.8 $ft^2$)
2. Thermal cycler (1.1 x 1.8 $ft^2$)
3. INTEGRA Biosciences VIAFLO™ instrument (2 x 1 $ft^2$)
4. Shaker (0.8 x 1.1 $ft^2$)
5. VWR Shaker (1 x 1.3 $ft^2$)
6. Centrifuge (1.8 x 2.2 $ft^2$)
7. Cold Centrifuge (2.5 x 2.2 $ft^2$)
8. ALPS™ 3000 Automated Microplate Heat Sealer (0.6 x 1.4 $ft^2$)
9. Balance (0.7 x 0.8 $ft^2$)
10. Multidrop™ Combi (1.2W x 1.1D $ft^2$) under a fume hood
11. Multidrop™ Combi (1.2W x 1.1D $ft^2$)
12. Multidrop™ liquid waste bottle with secondary container
13. Oven with door open (1.9 x 2.1 $ft^2$ closed)

## Storage space requirements

**Table 11 Package dimensions for Axiom™ Propel 96F Reagent Kits**

| Module | Part No. | Storage | Height | Length | Width | Space |
|---|---|---|---|---|---|---|
| **Axiom™ Propel 8x96F Reagent Kit, Cat. No. 952342** | | | | | | |
| Axiom™ Propel Reagent Kit Module 1 for 96F array plates only, 8x96F | 952269 | –25°C to –15°C | 14.5 cm | 11.8 cm | 10.8 cm | 0.0018 $M^3$ |
| Axiom™ Propel Reagent Kit Module 2-1 for 96F array plates only | 952337 | –25°C to –15°C | 14.5 cm | 11.8 cm | 10.8 cm | 0.0018 $M^3$ |
| Axiom™ Propel Reagent Kit Module 2-2 for 96F array plates only | 952338 | 2°C to 8°C | 14.5 cm | 11.8 cm | 10.8 cm | 0.0018 $M^3$ |
| Module 3 | 901446, 901447, 901578 | Room temperature | 22 cm per bottle | 9 cm per bottle | 9 cm per bottle | 32 bottles required, 0.0570 $M^3$ |
| Axiom™ Propel Fast Wash Reagent Kit Module 4-1 for 96F array plates only | 952370 | –25°C to –15°C | 14.5 cm | 7.2 cm | 7.2 cm | 0.0008 $M^3$ |
| Axiom™ Propel Reagent Kit Module 4-2 for 96F array plates only | | 2°C to 8°C | 21.7 cm | 11.8cm | 10.8 cm | 0.0027 $M^3$ |
| **Axiom™ Propel 4x96F Reagent Kit, Cat. No. 952341** | | | | | | |
| Axiom™ Propel Reagent Kit Module 1 for 96F array plates only, 4x96F | 952262 | –25°C to –15°C | 14.5 cm | 11.8 cm | 10.8 cm | 0.0018 $M^3$ |
| Axiom™ Propel Reagent Kit Module 2-1 for 96F or 384HT | 952263 | –25°C to –15°C | 10 cm | 11.8 cm | 5.5 cm | 0.0006 $M^3$ |
| Axiom™ Propel Reagent Kit Module 2-2 for 96F or 384HT | 952265 | 2°C to 8°C | 14.5 cm | 11.8 cm | 10.8 cm | 0.0018 $M^3$ |
| Module 3 | 901446, 901447, 901578 | Room temperature | 22 cm per bottle | 9 cm per bottle | 9 cm per bottle | 16 bottles required, 0.0285 $M^3$ |
| Axiom™ Propel Fast Wash Reagent Kit Module 4-1 for 96F or 384HT | 952369 | –25°C to –15°C | 10 cm | 11.8 cm | 5.5 cm | 0.0006 $M^3$ |
| Axiom™ Propel Reagent Kit Module 4-2 for 96F or 384HT | 952268 | 2°C to 8°C | 14.5 cm | 11.8 cm | 10.8 cm | 0.0018 $M^3$ |

**Table 12 Storage space required for Axiom™ Propel 96F Reagent Kits**

| Kit | Number of kits | Total freezer space (–25°C to –15°C) | Total refrigerator space (2°C to 8°C) | Room temperature storage |
|---|---|---|---|---|
| Axiom™ Propel 8x96F Reagent Kit, Cat. No. 952342 | 1 | 0.0044 $M^3$ | 0.0046 $M^3$ | 0.0570 $M^3$ |
| Axiom™ Propel 4x96F Reagent Kit, Cat. No. 952341 | 1 | 0.0031 $M^3$ | 0.0037 $M^3$ | 0.0285 $M^3$ |

# Documentation and support

## Related documentation

| Document | Publication number | Description |
|---|---|---|
| Applied Biosystems™ *Axiom™ Propel Fast Wash Workflow, 96-Array Format Site Preparation Guide* | MAN0019451 | This document provides instruction on running the Axiom™ assay on 96-array format plates using the Axiom™ Propel Fast Wash Workflow with the Thermo Scientific™ Multidrop™ Combi Reagent Dispenser and array processing on the GeneTitan™ Multi-Channel Instrument. |
| Applied Biosystems™ *Axiom™ 2.0 gDNA Sample Preparation Quick Reference* | MAN0017720 | An abbreviated reference on preparing the genomic DNA sample. |
| Applied Biosystems™ *GeneTitan™ MC Protocol for Axiom™ Array Plate Processing Quick Reference* | MAN0017718 | An abbreviated reference for processing Axiom™ Array Plates with the GeneTitan™ Multi-Channel Instrument. |
| Thermo Scientific™ *Multidrop™ Combi User Manual* | N05616 | This document detailing the safety information, setup, use, maintenance, and troubleshooting for the Multidrop™ Combi Reagent Dispenser. |
| Applied Biosystems™ *GeneTitan™ Multi-Channel Instrument User Guide* | MAN0027694 | The GeneTitan™ Multi-Channel (MC) Instrument automates array processing from target hybridization to data generation by combining a hybridization oven, fluidics processing, and state-of-the-art imaging device into a single benchtop instrument. This document detailing the use, care, and maintenance for the GeneTitan™ MC. |
| Applied Biosystems™ *GeneTitan™ Multi-Channel Instrument Site Preparation Guide* | MAN0025571 | Provides guidance on creating and maintaining the proper environment needed for the GeneTitan™ MC Instrument. |
| Thermo Scientific™ *ALPS™ 3000 Automated Laboratory Plate Sealer User Manual* | EXT0002597 | Instructions about the setup and use of the ALPS™ 3000 Automated Microplate Heat Sealer. |
| *Recommended Alternative Microarray Consumables Quick Reference* | MAN0019853 | A quick reference document identifying recommended alternative replacement consumables for use in microarray assays. |

*(continued)*

| Document | Publication number | Description |
|---|---|---|
| **Software and analysis** | | |
| Applied Biosystems™ *GeneChip™ Command Console™ User Guide* | MAN0027771 | This user guide provides instructions about using Applied Biosystems™ GeneChip™ Command Console™ software (GCC) used to control GeneChip™ instrument systems. GeneChip™ Command Console™ software provides an intuitive set of tools for instrument control and data management used in the processing of GeneChip™ arrays. |
| Applied Biosystems™ *Axiom™ Analysis Suite User Guide* | MAN0027928 | Axiom™ Analysis Suite advances genotyping data analysis with a single-source software package to enable complete genotyping analysis of all Axiom™ arrays. This document provides instructions about using the software to automate the Best Practices Workflow to facilitate accurate results in a single step for export in PLINK, VCF, or TXT formats. |
| Applied Biosystems™ *Axiom™ Genotyping Solution Data Analysis User Guide* | MAN0018363 | This guide provides information and instructions for analyzing Axiom™ genotyping array data. It includes the use of Axiom™ Analysis Suite, Applied Biosystems™ Analysis Power Tools and SNPolisher R package to perform quality control analysis (QC) for samples and plates, SNP filtering before downstream analysis, and advanced genotyping methods. |

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  - Safety Data Sheets (SDSs; also known as MSDSs)

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