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# **Profinia™ Native IMAC and GST Starter Kits**

## **Instruction Manual**

**(Step-by-Step Guide to  
Profinia Operation)**



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For technical support, call your local Bio-Rad office or, in the U.S.,  
call **1-800-4BIORAD** (1-800-424-6723)



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# Section 1

## Introduction

### 1.1 Background

The Profinia protein purification system includes a complete line of consumables to use with an automated, user-friendly instrument for the purification of immobilized metal affinity chromatography (IMAC) and glutathione-S-transferase (GST) affinity-tagged proteins. The system has been designed to use standard purification buffers, resins, and reagents packaged into an easy-to-use kit. The two most common purification applications, native IMAC and GST, have been packaged into starter kits that contain all components necessary to purify a control affinity-tagged protein. The buffers are supplied as concentrates and are diluted by the instrument; no predilution is required. Profinia IMAC and GST starter kits can be used after instrument installation and setup to familiarize the user with the instrument or when troubleshooting purification problems. See Section 10 for starter kit information and the complete list of Profinia products.

### 1.2 Product Information

Profinia starter kits are used to get started with the Profinia protein purification system. The kits also help diagnose proper operation of the system. The Profinia starter kits contain a lyophilized 51 kD dual-tagged protein that contains an N-terminal GST sequence tag and a C-terminal tag with histidine (His) residues.\* Once resuspended in diluted equilibration buffer, the lysate yields sufficient protein for two independent purifications. Each kit contains a complete set of buffers and solutions (affinity, desalting, cleaning, and storage solutions), reagents (glutathione), and cartridges (1 ml affinity paired with a 10 ml desalting) required for two affinity purifications only. However, additional Bio-Scale™ Mini IMAC or GST cartridges can be purchased separately, as the buffers provided in the starter kits are sufficient to perform 10 purification runs. See Proper Storage of Solutions and Kits on page 15. Table 1 summarizes the reagents contained within the two starter kits available for the Profinia system.

\* The C-terminal histidine tag contains alternating histidine units and is not recognized by 6x histidine antibodies.

**Table 1. Profinia IMAC and GST starter kits.**

Kit	Catalog #	Solutions			Reagents		Cartridges	
		Purification Buffers	Desalting Buffer	Storage Solutions	Lysate	Glutathione	Affinity	Desalting
Native IMAC starter kit	620-0229	✓	✓	✓	✓		✓	✓
GST starter kit	620-0230	✓	✓	✓	✓	✓	✓	✓

### 1.3 Storage Conditions

Profinia starter kits are shipped at room temperature and can be safely stored for short periods (up to 2 weeks) at room temperature. For long-term storage, the kits should be stored at 4°C. The individual components and outside kit box labels provide exact expiration dates.

## Section 2 Native IMAC and GST Starter Kits

### 2.1 Native IMAC Component Descriptions

The affinity buffers provided in the native IMAC kit are formulated from potassium salts and buffers, and contain increasing concentrations of imidazole for optimized washing and eluting of His-tagged proteins. Native IMAC buffers are used for proteins soluble in *E. coli* lysates and that have accessible tags containing histidine residues. Table 2 provides a list of buffer compositions. The native lysis buffer is used for preparing sample lysates; is not used in the instrument. This buffer can be used for subsequent purifications of target protein outside of the starter kit applications.

The IMAC cartridges are shipped in 20% ethanol and are packed with 1 ml Profinity™ IMAC resin. The desalting cartridges are provided in 20 mM Bis-Tris, pH 6.5 with 0.05% azide as a preservative. The control lysate is provided as a lyophilized sample prepared from 50 ml *E. coli* culture. When resuspended in 12 ml of 1x IMAC lysis buffer, ~4 mg of tagged target protein can be purified from a 5 ml sample load. All components supplied with the native IMAC starter kit are shown in Table 2.

**Table 2. Formulations for buffers and solutions provided in the native IMAC starter kit.**

Profina Solution	Supplied As	Concentrated Formulation	Working 1x Formulation	Volume	Position #
Native IMAC lysis buffer	2x	600 mM KCl, 100 mM KH <sub>2</sub> PO <sub>4</sub> , 10 mM imidazole, pH 8.0	300 mM KCl, 50 mM KH <sub>2</sub> PO <sub>4</sub> , 5 mM imidazole, pH 8.0	125 ml	N/A
Native IMAC wash buffer 1	2x	600 mM KCl, 100 mM KH <sub>2</sub> PO <sub>4</sub> , 10 mM imidazole, pH 8.0	300 mM KCl, 50 mM KH <sub>2</sub> PO <sub>4</sub> , 5 mM imidazole, pH 8.0	125 ml	1
Native IMAC wash buffer 2	2x	600 mM KCl, 100 mM KH <sub>2</sub> PO <sub>4</sub> , 20 mM imidazole, pH 8.0	300 mM KCl, 50 mM KH <sub>2</sub> PO <sub>4</sub> , 10 mM imidazole, pH 8.0	100 ml	2
Native IMAC elution buffer	2x	600 mM KCl, 100 mM KH <sub>2</sub> PO <sub>4</sub> , 500 mM imidazole, pH 8.0	300 mM KCl, 50 mM KH <sub>2</sub> PO <sub>4</sub> , 250 mM imidazole, pH 8.0	100 ml	3
Desalting buffer	5x	685 mM NaCl, 13.5 mM KCl, 21.5 mM Na <sub>2</sub> HPO <sub>4</sub> , 40.5 mM KH <sub>2</sub> HPO <sub>4</sub> , pH 7.0 (pH 7.4 upon dilution)	137 mM NaCl, 2.7 mM KCl, 4.3 mM Na <sub>2</sub> HPO <sub>4</sub> , 8.1 mM KH <sub>2</sub> PO <sub>4</sub> , pH 7.4	200 ml	4
Cleaning solution 1	2x	1,000 mM NaCl, 100 mM Tris, pH 8.0	500 mM NaCl, 50 mM Tris, pH 8.0	125 ml	5
Cleaning solution 2	4x	2,000 mM NaCl, 400 mM NaOAc, pH 4.5	500 mM NaCl, 100 mM NaOAc, pH 4.5	125 ml	6
Storage solution	2x	4% C <sub>6</sub> H <sub>5</sub> CH <sub>2</sub> OH (benzyl alcohol)	2% C <sub>6</sub> H <sub>5</sub> CH <sub>2</sub> OH (benzyl alcohol)	200 ml	7

## 2.2 GST Component Descriptions

The lysis and wash buffers contained in the GST kit are formulated from sodium salts, phosphate buffers, and EDTA, and provide optimized binding, washing, and eluting of GST-tagged proteins. EDTA is included as a chelating compound that protects against metalloproteases, which can be present in *E. coli* lysates. GST fusion proteins must be in a native conformation prior to purification. The buffers used in this system are designed for the purification of proteins that are soluble in *E. coli* lysates and that have accessible, native GST sequence tags. Table 3 provides a list of buffer compositions. The lysis buffer is used for preparing sample preparations; it is not used in any of the instrument ports. This buffer can be used for subsequent purifications of target protein outside of the starter kit applications.

The GST cartridges are shipped in 20% ethanol and are packed with 1 ml Profinity GST resin. The desalting cartridges are provided in 20 mM Bis-Tris, pH 6.5 with 0.05% azide as a preservative. The vial of lyophilized lysate is described in sections 1.2 and 2.1, and when resuspended in 12 ml 1x GST lysis buffer, provides adequate sample for two independent purification runs.

**Table 3. Formulations for buffers and solutions provided in the GST kits.**

<b>Profinia Solution</b>	<b>Supplied As</b>	<b>Concentrated Formulation</b>	<b>Working 1x Formulation</b>	<b>Volume</b>	<b>Position #</b>
GST lysis buffer	2x	300 mM NaCl, 20 mM Na <sub>2</sub> HPO <sub>4</sub> , 10 mM EDTA, pH 7.4	150 mM NaCl, 10 mM Na <sub>2</sub> HPO <sub>4</sub> , 5 mM EDTA, pH 7.4	125 ml	N/A
GST wash buffer	2x	300 mM NaCl, 20 mM Na <sub>2</sub> HPO <sub>4</sub> , 10 mM EDTA, pH 8.0	150 mM NaCl, 10 mM Na <sub>2</sub> HPO <sub>4</sub> , 5 mM EDTA, pH 7.4	200 ml	1
GST elution buffer	2x	40 mM glutathione, 200 mM Tris, 10 mM EDTA, pH 8.0	20 mM glutathione, 100 mM Tris, 5 mM EDTA, pH 8.0	100 ml	3
Desalting buffer	5x	685 mM NaCl, 13.5 mM KCl, 21.5 mM Na <sub>2</sub> HPO <sub>4</sub> , 40.5 mM KH <sub>2</sub> HPO <sub>4</sub> , pH 7.0 (pH 7.4 upon dilution)	137 mM NaCl, 2.7 mM KCl, 4.3 mM Na <sub>2</sub> HPO <sub>4</sub> , 8.1 mM KH <sub>2</sub> PO <sub>4</sub> , pH 7.4	200 ml	4
Cleaning solution 1	2x	1,000 mM NaCl, 100 mM Tris, pH 8.0	500 mM NaCl, 50 mM Tris, pH 8.0	125 ml	5
Cleaning solution 2	4x	2,000 mM NaCl, 400 mM NaOAc, pH 4.5	500 mM NaCl, 100 mM NaOAc, pH 4.5	125 ml	6
Storage solution	2x	4% C <sub>6</sub> H <sub>5</sub> CH <sub>2</sub> OH (benzyl alcohol)	2% C <sub>6</sub> H <sub>5</sub> CH <sub>2</sub> OH (benzyl alcohol)	200 ml	7



## Section 3

# Equipment and Materials

### 3.1 Profinia Instrument and Accessories

The instrument comes packaged with nearly all materials necessary for the setup and purification of the control protein provided in the starter kit. The instrument is shipped with all the key bottles and plasticware needed to run the system: waste and diluent bottles, a bottle starter pack, and a cleaning tray. See Figure 1 for a picture of the accessories. Materials not provided in the package include standard 15 ml or 50 ml tubes that are required for the sample and collection ports. Most standard 15 and 50 ml tubes fit the required dimensions of the Profinia system.



**Fig. 1. Accessories for the Profinia instrument.** Items shown include waste and diluent bottles (top), bottle starter pack (left), sample cooling device (right), cleaning tray (bottom), sample loop (bottom left), 15 ml and 50 ml sample lids and buffer bottle lids (middle).

## Section 4

# Setup and Running of the Profinia IMAC Starter Kit

### 4.1 Reagent Preparation

Open the starter kit and remove the vial of lyophilized lysate. Dilute 6 ml of IMAC lysis buffer with 6 ml distilled water to make 12 ml of a 1x solution. Resuspend the vial of lyophilized lysate with the 12 ml 1x lysis buffer, swirl to mix, and let stand 5 min at room temperature to completely dissolve. **Note:** Do not use lysis buffer from the GST starter kit for IMAC purification because 10 mM EDTA is included in the GST lysis buffer and will strip the nickel from the IMAC cartridge. Transfer 6 ml of the resuspended sample to a 15 ml conical tube and place on ice until ready to start purification. The remaining 6 ml of resuspended sample can be frozen for later use and thawed once prior to purification. The frozen sample should be used within 3 months.

The IMAC buffers and cartridges are ready for insertion into the instrument and require no advanced preparation.

## 4.2 Instrument Startup, User Interface, and Method Selection

Turn on the instrument using the recessed on/off switch at the right lower panel. The Profinia home screen will appear. Make sure the cleaning tray is in place and that filtered water is in buffer positions 1–7. Choose Data/Utilities, Diag/Maint Functions, and Clean All Inlet and Outlet Lines. This will flush ethanol or air from the system prior to starting a chromatography run. After the system is rinsed press Home to return to the Profinia home screen. Choose Bio-Rad Methods. The user interface guides users through the setup and running of the preprogrammed method. A brief description of each key screen and necessary actions to take to perform a purification using the 51-D lysate are outlined below.

### Select Method System Screen

The Select Method System screen allows the user to choose among different purification systems (IMAC, GST, Desalting, Protein A&G, eXact). (Figure 2)

- IMAC

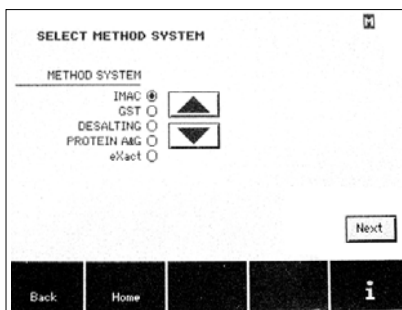


Fig. 2. Method selection for affinity purification.

### Select Method Type and Options Screen

The Select Method Type and Options screen allows the user to quickly choose the method of purification, number of samples to be purified, and volumes for the affinity and/or desalting cartridges. The selection in Figure 3 are:

- Method type: Native IMAC + Desalting
- Sample type: 1 sample
- Cartridge selection: 1 ml + 10 ml

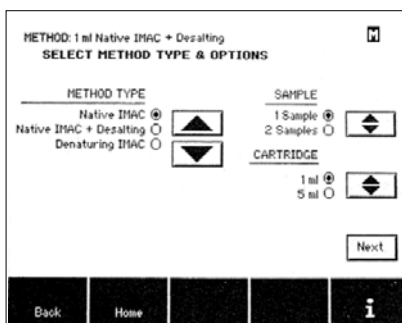


Fig. 3. Method selection for native IMAC and desalting application.

## Select Sample Parameters Screen

The Select Sample Parameters screen gives users the option of increasing/decreasing the rate of flow or the number of column volumes of wash used. The selections in Figure 4 are.

- Flow rate: Standard\*
- Wash time: Standard

\* Standard flow rates for IMAC purifications are 2 ml/min. Proteins that are very large (>100 kD), have His residues that are not fully exposed, or require cold room purifications, typically bind with slower kinetics. In these situations, the slow flow rate option (0.5 ml/min) increases binding efficiency.

## Enter Run and Sample Information Screen

Users can customize the method by adding user-specific details that distinguish samples from one another (Figure 5). Such details may include user and run name, sample name and volume, and  $A_{280}$  of a 1 mg/ml protein solution. Selections in Figure 5 are:

- Username: Anonymous
- Run name: UNTITLED
- Lot tracking: BLANK
- Sample 1 name: 3/4 vial51kd
- Volume: 5.00 ml
- $A_{280}$  of 1 mg/ml\*: 1.33

\*All proteins absorb UV light based upon amino acid composition. The  $A_{280}$  of a 1 mg/ml protein solution can be calculated if the specific amino acid sequence is known. For 51-D in the control lysate, the  $OD_{280}$  of a 1 mg/ml solution is 1.33. By entering this value, the Profinia instrument automatically calculates and converts the concentration of the purified protein from the absorbance values. The concentrations given by the Profinia system are estimates of the purified protein. Analytical determination of protein concentration using a spectrophotometer or Bradford analysis following purification is always good practice.

METHOD: 1 ml Native IMAC + Desalting  
SELECT SAMPLE PARAMETERS

SAMPLE 1

FLOW RATE: Standard  Low

WASH TIME: Standard  Extended

Next

Back Home i

Fig. 4. Method selection for sample flow rate and wash times.

METHOD: 1 ml Native IMAC + Desalting  
ENTER RUN & SAMPLE INFORMATION

Method Name: 1 ml Native IMAC + Desalting  
USERNAME: Anonymous

RUN NAME: UNTITLED

External fc: N/A

LOT # TRACKING: BLANK

SAMPLE 1 Name: 3/4 vial51kd  
Volume: 5.00 ml

A280 of Inhibit: 1.33

Edit Next

Back Home Saved Methods Edit Method i

Fig. 5. Run and sample information selection screen.

## Install Reagents, Sample, and Fraction Tubes Screen

Installation of reagents, samples, and fraction tubes is specific to the method type chosen. On one screen, necessary components are shown if needed (or crossed out, Figure 6) so that the user can quickly and easily proceed with the setup of the instrument.

Reagent and bottle icons: Install the buffer bottles, sample tubes, waste and water diluent containers, and collection tubes as illustrated by the icons on the screen. The number of buffer or water volume indicates the minimal volume needed for this size of the containers to avoid introducing of bubble due to insufficient fluid.

### Select Cartridge Status Screens

a user interface screen that describes cartridge installation shown in Figure 7.

**Select Cartridge Status:** The system must be primed with buffer before installing cartridges to prevent air or storage ethanol from being pumped into the cartridges. On the Select Cartridge Status menu choose NO if the lines have not yet been primed and cartridges are not installed. Pressing the NO button brings you to the Prepare For Cartridge Line Priming screen.

Choose YES only if you have just completed a run of the same type and have not removed the chromatography cartridges. Choosing YES will send you to the Start Run Screen.

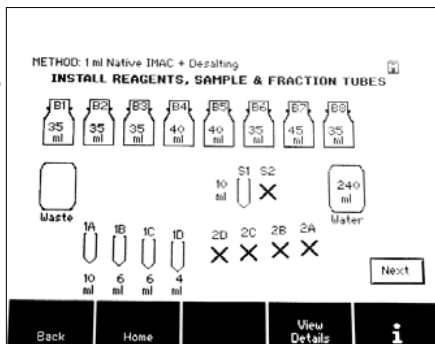


Fig. 6. Reagents, sample, and fraction tubes screen.

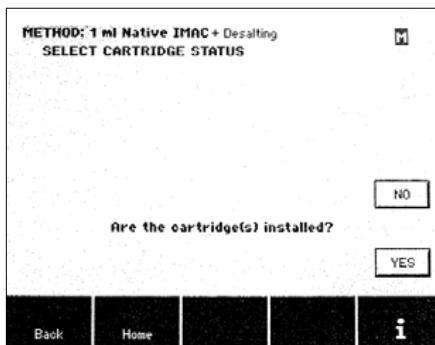


Fig. 7. Cartridge installation screens.

## Prepare For Cartridge Line

**Priming:** This screen directs users to make sure the fittings for both cartridge positions 1 and 2 are connected without any cartridges in place (Figure 8). Pressing Start primes the cartridge lines with buffer at high flow rate and then brings users to the Install Cartridges screen.

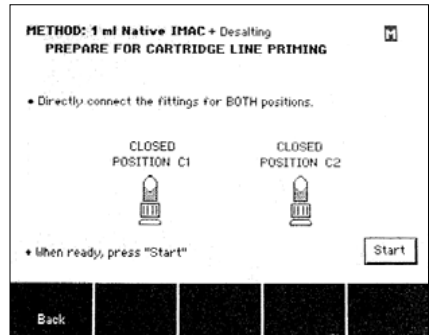


Fig. 8. Instruction screen for cartridge line priming before cartridge installation.

## Install Bio-Scale Mini Cartridges:

Disconnect the upper and lower cartridge holder fittings. Unscrew the bottom luer cap of a cartridge and attach it by rotating; clockwise. Remove the top luer cap of the cartridge. Attach it by lowering the top holder and tightening the fitting into place (Figure 9).

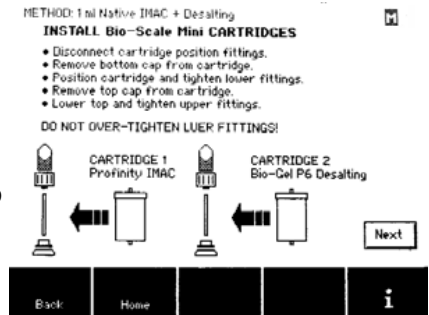
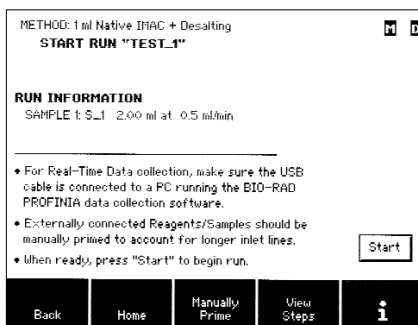


Fig. 9. Installation of cartridges on the Profinia system.

## Run Screens

A run is commenced by pressing the Start button. Once started, the run in progress screen provides the approximate elution time for the sample (typically 37 minutes for a demo run). Return to the instrument at this time to retrieve the purified sample. (Figure 10)

**Start run:** This screen initiates the purification run and notifies the user how to view data in real time with the Profinia data collection software package.



**Run in progress:** A Run in Progress screen is displayed for each method selection. Features such as a status bar, current step in the protocol (for example, Equilibrate, Wash 1, Elute), and expected time to sample elution are all specified, so it is easy to identify where the sample is at any given point in the protocol.

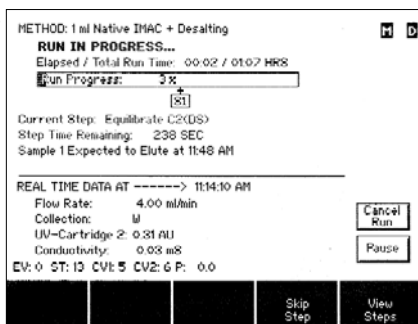


Fig. 10. Start run and run in progress screens.

## Section 5 Setup and Running of the Profinia GST Starter Kit

### 5.1 Reagent Preparation

Open the starter kit and remove the vial of lyophilized lysate. Dilute 6 ml GST lysis buffer 1:1 with 6 ml distilled water to make 12 ml of a 1x solution. Resuspend the vial of lyophilized lysate with the 12 ml of 1x lysis buffer, swirl to mix, and let stand 5 min at room temperature to completely dissolve. Transfer 6 ml of the resuspended sample to a 15 ml

conical tube and place on ice until ready to start the purification. The remaining 6 ml of resuspended sample can be frozen for later use and thawed once prior to purification. The frozen sample should be used within 6 months.

Remove the bottle of GST elution buffer and vial of reduced glutathione. Transfer 10 ml elution buffer to the vial of glutathione, shake to mix, and let stand 5 min at room temperature to completely dissolve. Transfer the resuspended glutathione to the 125 ml bottle of elution buffer. The elution buffer (2x) now contains 40 mM glutathione, which is necessary to elute GST-tagged proteins. The remaining bottles of GST buffers and cartridges require no advance preparation.

## 5.2 Instrument Startup, User Interface, and Method Selection

Turn on the instrument using the recessed on/off switch at the right lower panel. Make sure the cleaning tray is in place and that filtered water is in buffer positions 1–7. Choose Data/Utilities, Diag/Maint Functions, and Clean All Inlet and Outlet Lines. This will flush ethanol or air from the system prior to starting the chromatography run. After the system is rinsed press Home to return to the Profinia home screen. Choose Bio-Rad Methods. The user interface for the GST starter kit is similar to that described in Section 12. Choose GST on the select method screen. The method screen for the GST method type and options should look like Figure 11.

### Select Method Type and Options Screen

The Select Method Type and Options screen allows the user to quickly choose the method of purification, number of samples to be purified, and the column volume (ml) for the affinity and/or desalting cartridges. The selections in Figure 11 are:

- Method type: GST + Desalting
- Sample type: 1 sample
- Cartridge selection: 1 cartridge

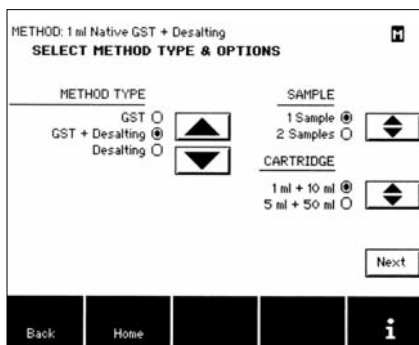


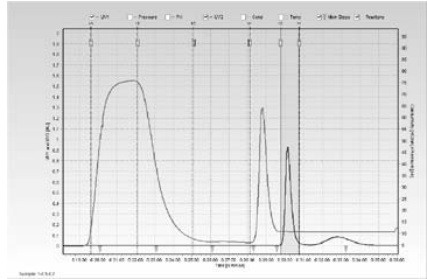
Fig. 11. Method selection for GST application.

# Section 6 Software and Analysis

## 6.1 Viewing Starter Kit Data

Software is an optional accessory to the Profinia instrument and is required to visualize chromatographic data from the purification profile. A representative chromatogram from the 51-D control lysate purification is shown in Figure 12.

The y-axis displays the absorbance units (AU) and the x-axis displays the run time (h:mm:ss). The first peak traced by UV-1 illustrates the unbound protein found in all fractions: load (L), flowthrough (FT), wash 1 and wash 2 (W-1, W-2), and elution. The second peak traced by UV-1 contains the affinity purified protein, which is then diverted to the desalting cartridge. The final peak traced by UV-2 contains the purified and desalted protein collected in the elution fraction. A gel showing the protein from each of the main purification steps is shown in Figure 13.



**Fig. 12. Representative chromatogram displayed on Profinia software.**

The standard software report presents key sample data collected throughout the run. The sample name, fraction location and volume, and estimated total protein eluted into collection tube D are displayed in the table in Figure 13. The report can be formatted and printed in a variety of formats. The table in Figure 13 highlights a partial section of the report.

Sample	Frac. Loc. & Vol	Conc. & (A280)	Total Protein	Eluted after	FI
(1) 51D IMAC 4C 2	1D 4.0 ml	1.27 mg/ml (1.33)	5.07 mg	0:33:14 [h:mm:ss]	St

**Fig. 13. Standard software report.**



The standard report also summarizes key run parameters such as time to elution, flow rate, wash time, and volume loaded. If the software package is not part of your Profinia system, the end of run summary screen presents the key sample data directly on the user interface screen (Figure 14).

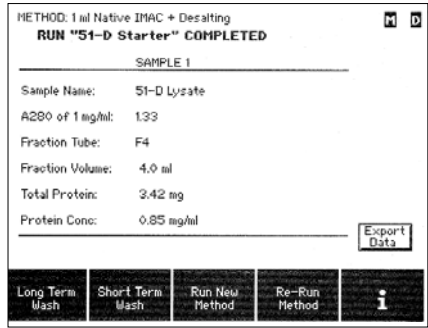


Fig. 14. Data report screen on user interface screen.

## 6.2 Analysis of Purified Protein

Purified affinity-tagged proteins are typically analyzed by gel electrophoresis. For IMAC purifications, samples of starting material (L, resuspended lysate, or load), flowthrough (FT, tube A), wash 1 (W-1, tube B), wash 2 (W-2, tube C), and purified protein (E, tube D) are diluted 1:7 in Laemmli buffer, boiled, and 10–20  $\mu$ l is then loaded onto a gel. The IMAC buffers contain potassium salts and must be diluted at least 1:7 to prevent potassium-SDS precipitates from forming in Laemmli buffer. The gel in Figure 15 shows a representative purification from the 51-D IMAC purification.

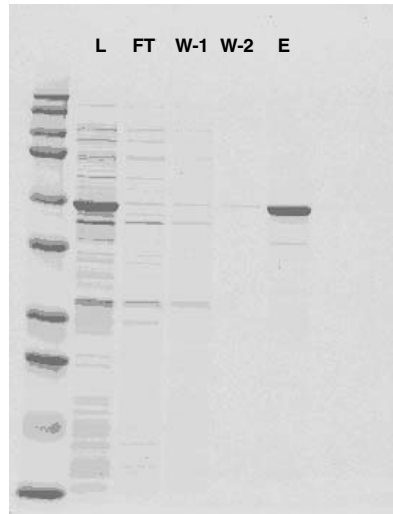


Fig. 15. Gel analysis of purified 51-D with native IMAC.

## Section 7

# Shutdown, Cleaning, Storage Sequence, and Data Export

After the run is completed, the instrument will instruct the user to begin the proper cleaning and storage sequence. **To maintain the instrument in proper working order and to prevent mechanical breakdown, always follow the short- or long-term storage commands.** Short-term storage is used when the instrument will be run within 2 days, and long-term storage is appropriate when the instrument will be used in 2 or more days.

### Prepare System to Clean Lines

- Remove sample tubes, install tubes filled with water, and install the cleaning tray. Press Start to begin the cleaning process. Refer to Figure 16 for the screen associated with this command

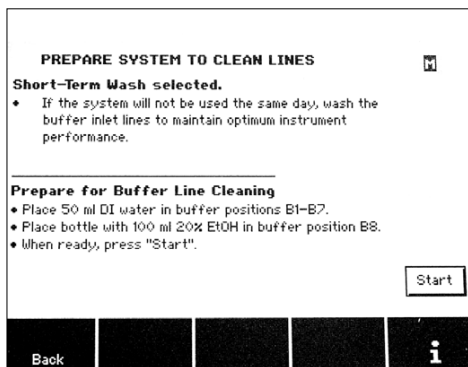


Fig. 16. Preparing the system for cleaning.

### Export Data

- Once the sample and fraction lines are cleaned, the data can be exported through a USB drive. Install a USB drive into the USB port located on the front of the instrument, and press Export Data
- The exported data can be viewed on any PC using the Profinia software package

### Short-Term/Long-Term Wash

- Choose Short-Term Wash to store for <2 days. Choose Long-Term Wash to store for >2 days

- Remove the buffer bottles in positions 1–7 and replace with bottles that contain water (the bottles in the starter pack should be used for this purpose)
- Remove the cartridges and connect the upper and lower cartridge fittings. Press Start to begin the cleaning cycle
- If the long-term wash cycle is chosen, install 20% ETOH in buffer positions 1–8, sample positions 1 and 2, and at the DI water inlet. The ethanol will be used as a long-term storage solution in the lines

## **Section 8**

### **Frequently Asked Questions and Troubleshooting**

For an extensive and comprehensive list of troubleshooting tips for protein expression, sample prep, purification, and analysis, refer to the Profinia Protein Purification Instrument Instruction Manual. Questions and tips below focus on the use of the starter kits and solutions.

#### **Proper Storage of Solutions and Kits**

- Both kits can be stored at 22°C (room temperature) for short periods of time, either upon receipt or during normal usage. Due to the sensitivity of some of the more labile reagents (control lysate, glutathione, GST cartridges), the kits should be kept at 4°C for long-term storage
- Once opened and used with the instruments, all reagents should be stored at 4°C for up to 3 months. After insertion into the instrument, the solutions are no longer sterile and require 4°C storage
- After opening and use with the instrument, check the solutions for particulates and clarity before reusing. If there is any indication of particulates, contamination, or microbial growth, the solutions should be discarded

#### **Use of Excess Reagents**

- The limiting reagent in the kit is the control lysate, which is sufficient for two purifications yielding ~4 mg of target protein. The lysate can be loaded at lower or higher amounts to mimic the purification of low-level or high-level target proteins

- There are sufficient buffers and reagents provided for ten 1 ml purification runs. If it is desirable to use the remaining reagents on proteins other than the supplied control, the reagents should be stored at 4°C and used within 6 months. The elution buffer, which contains glutathione, must be stored at -20°C and used within 6 months. The solution should be thawed only once

### **Reuse of Cartridges**

- The 1 ml affinity and 10 ml desalting cartridges provided in the starter kit can be used up to five times. Since the lysate provided in the kit is sufficient for only two purifications, cartridges could theoretically be used three more times. However, as with any type of affinity purification, it is suggested that individual cartridges be dedicated to the purification of a unique protein, in this case the control lysate protein. Cross-contamination can always pose a risk if more than one protein is purified over the same cartridge
- If the user chooses to use the same 1 ml affinity and 10 ml desalting cartridge for a different protein, Section 7 provides the appropriate cleaning and storage protocols for cartridge reuse
- Alternatively, and if cross-contamination is a concern, Bio-Scale™ Mini IMAC or GST cartridges may be purchased separately can buffers provided in the starter kit are provided in sufficient quantity to perform 10 purification runs

## **Section 9 Legal Notices**

Purification and preparation of fusion proteins and affinity peptides containing at least two adjacent histidine residues may require a license under U.S. patent 5,284,933 and U.S. patent 5,310,663, including foreign patents (assignee Hoffman-LaRoche).

Expression and purification of GST fusion proteins may require a license under U.S. patent 5,654,176 (assignee Chemicon International).

# Section 10

## Ordering Information

Catalog #	Description
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### Profinia Systems

620-1005	<b>Profinia Instrument with Accessory Kit and Native IMAC Starter Kit</b> , 100–240 V
620-1006	<b>Profinia Instrument with Accessory Kit and GST Starter Kit</b> , 100–240 V
620-1010	<b>Profinia System with Software, Accessory Kit and Native IMAC Starter Kit</b> , 100–240 V
620-1011	<b>Profinia System with Software Accessory Kit and GST Starter Kit</b> , 100–240 V

### Profinia Accessories

620-0010	<b>Profinia Software with usb cable</b>
620-0401	<b>Profinia Cooling Accessory</b>
620-0402	<b>Profinia Desalting Sample Loop</b> , 2.0 ml
620-0403	<b>Profinia Desalting Sample Loop</b> , 10.0 ml
620-0404	<b>Profinia Instrument Inline Filter Assembly Pack</b>
620-0410	<b>Profinia Instrument Accessory Kit</b> , includes cleaning tray, inline filter assembly replacement, 8 buffer lids, 2 x 50 ml sample lids, 2 x 15 ml lids, bottle starter pack, waste/diluent bottle set
620-0231	<b>Bottle Starter Pack</b> , 4 x 125 ml and 4 x 250 ml bottles and 8 buffer lids
620-0411	<b>Profinia pH Monitor Kit with mounting accessory kit</b> , includes pH electrode, flow cell, mounting accessories
732-0112	<b>Adaptor Kit</b> , connecting to GE Healthcare, Pierce pre-packed cartridges

### Profinia Purification Kits

620-0225	<b>Profinia Native IMAC Purification Kit</b> , 1 ml, includes Profinia native IMAC buffer kit, 2 x 1 ml IMAC and 2 x 10 ml desalting cartridges
620-0235	<b>Profinia Native IMAC Purification Kit</b> , 5 ml, includes 2 Profinia native IMAC buffer kits, 1 x 5 ml IMAC and 1 x 50 ml desalting cartridges
620-0226	<b>Profinia GST Purification Kit</b> , 1 ml, includes Profinia GST buffer kit, 2 x 1 ml GST and 2 x 10 ml desalting cartridges
620-0236	<b>Profinia GST Purification Kit</b> , 5 ml, includes 2 Profinia GST buffer kits, 1 x 5 ml GST and 1 x 50 ml desalting cartridges

<b>Catalog #</b>	<b>Description</b>
620-0228	<b>Profinia Desalting Purification Kit</b> , 10 ml, includes desalting and cartridge cleaning buffer kit, 2 x 10 ml desalting cartridges
620-0238	<b>Profinia Desalting Purification Kit</b> , 50 ml, includes 2 desalting and cartridge cleaning buffer kits, 1 x 50 ml desalting cartridge

### **Profinia Buffer Kits**

620-0221	<b>Profinia Native IMAC Buffer Kit</b> , includes purification buffers, cleaning and storage solutions; sufficient for 10 applications for 1 ml cartridge
620-0223	<b>Profinia GST Buffer Kit</b> , includes purification buffers, cleaning and storage solutions, glutathione reagent; sufficient for 10 applications for 1 ml cartridge
620-0224	<b>Desalting and Cartridge Cleaning Buffer Kit</b> , includes desalting buffer, cleaning and storage solutions; sufficient for 10 applications for 10 ml cartridge

### **Profinia Starter Kits**

620-0229	<b>Profinia IMAC Starter Kit</b> , includes Profinia native IMAC buffer kit, 1 x 1 ml IMAC and 1 x 10 ml desalting cartridges, <i>E. coli</i> lysate
620-0230	<b>Profinia GST Starter Kit</b> , includes Profinia GST buffer kit, 1 x 1 ml GST and 1 x 10 ml desalting cartridges, <i>E. coli</i> lysate, glutathione reagent

### **Profinia Reagents**

620-0203	<b>His Antibody</b> , 100 $\mu$ l, 1 mg/ml
620-0204	<b>GST Antibody</b> , 100 $\mu$ l, 1 mg/ml
620-0233	<b>His and GST Purification <i>E. coli</i> Control Lysate</b> , Lyophilized
620-0202	<b>Glutathione Pack</b> , 1.23 g

### **Bio-Scale™ Mini Affinity and Desalting Cartridges**

732-4610	<b>Bio-Scale Mini Profinity IMAC Cartridges</b> , 5 x 1 ml
732-4612	<b>Bio-Scale Mini Profinity IMAC Cartridge</b> , 1 x 5 ml
732-4614	<b>Bio-Scale Mini Profinity IMAC Cartridges</b> , 5 x 5 ml
732-4620	<b>Bio-Scale Mini Profinity GST Cartridges</b> , 5 x 1 ml
732-4622	<b>Bio-Scale Mini Profinity GST Cartridge</b> , 1 x 5 ml
732-4624	<b>Bio-Scale Mini Profinity GST Cartridges</b> , 5 x 5 ml
732-5304	<b>Bio-Scale Mini Bio-Gel® P-6 Desalting Cartridges</b> , 5 x 10 ml
732-5312	<b>Bio-Scale Mini Bio-Gel P-6 Desalting Cartridge</b> , 1 x 50 ml
732-5314	<b>Bio-Scale Mini Bio-Gel P-6 Desalting Cartridges</b> , 5 x 50 ml
732-4600	<b>Bio-Scale Mini Aff-Prep Protein A Cartridges</b> , 5 x 1 ml

<b>Catalog #</b>	<b>Description</b>
732-4602	<b>Bio-Scale Mini Affi-Prep Protein A Cartridge</b> , 1 x 5 ml
732-4200	<b>Bio-Scale Mini UNOsphere SUPrA™ Cartridge</b> , 1 x 1 ml
732-4201	<b>Bio-Scale Mini UNOsphere SUPrA Cartridges</b> , 5 x 1 ml
732-4202	<b>Bio-Scale Mini UNOsphere SUPrA Cartridge</b> , 1 x 5 ml
732-4646	<b>Bio-Scale Mini Profinity eXact Cartridges</b> , 2 x 1 ml
732-4647	<b>Bio-Scale Mini Profinity eXact Cartridges</b> , 4 x 1 ml
732-4648	<b>Bio-Scale Mini Profinity eXact Cartridge</b> , 1 x 5 ml



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Laboratories, Inc.**

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