### Step 2: Using the ProteinChip Cassette-Compatible Bioprocessor

1. Add samples to the bioprocessor reservoir using a multichannel pipet or Biomek 2000 or 3000 laboratory automation workstation. Be extremely careful not to form bubbles at the bottom of the wells.*
2. Use a MicroMix 5 shaker to mix the sample and to ensure adequate sample exposure to the active surface of the ProteinChip array. When using the MicroMix 5, we recommend using form 20, amplitude 5.
3. Liquid can be removed from the reservoir using a multichannel pipet or any vacuum aspirator. In either case, as much of the liquid as possible should be removed by placing the tip of the removal device as far down into the well as possible without touching the active chemistry spots.
4. Addition of EAMs is performed after removal of the bioprocessor reservoir. Use the cassette hold-down frame provided with the bioprocessor assembly in place of the reservoir to ensure the array cassette remains flat in the bioprocessor assembly.

### Step 3: Disassembling the ProteinChip Bioprocessor

1. Place the bioprocessor on a lab bench or other flat surface with the solid (back) surface of the bioprocessor down.
2. Unlatch the hinged leg assemblies and remove the reservoir from the base clamp assembly by holding the base clamp assembly down with one hand, while lifting the reservoir from the base with the other hand.
3. Remove any excess water from the arrays by blotting the arrays with a lint-free lab wipe.
4. Allow the arrays to air-dry for approximately 10 minutes prior to adding EAMs according to your protocol. To keep the cassette flat in the bioprocessor, use the cassette hold-down frame provided with this assembly.

* To avoid forming bubbles at the bottom of the well, place the pipet tip as far down in the well as possible without touching the active chemistry spot of the ProteinChip array. For convenience, the tip of the pipet can be placed lightly against the side of the well near the bottom (not on the spot) when dispensing the sample.



## Ordering Information

| Catalog # | Description |
|---|---|
| C50-30011 | **ProteinChip Cassette-Compatible Bioprocessor,** includes ProteinChip array forceps, cassette hold-down frame, 12 blank ProteinChip arrays |
| C50-30012 | **ProteinChip Cassette-Compatible Bioprocessor Reservoirs**, 5 |
| C70-00069 | **ProteinChip Array Assortment Pack**, includes 3 each of H50, CM10, IMAC30, and Q10 ProteinChip arrays |
| C57-30075 | **ProteinChip CM10 Arrays**, A–H format, 12 |
| C55-30033 | **ProteinChip Gold Array**, A–H format |
| C57-30028 | **ProteinChip H4 Arrays**, A–H format, 12 |
| C57-30065 | **ProteinChip H50 Arrays**, A–H format, 12 |
| C57-30078 | **ProteinChip IMAC30 Arrays**, A–H format, 12 |
| C57-30043 | **ProteinChip NP20 Arrays**, A–H format, 12 |
| C55-30058 | **ProteinChip PG20 Array**, A–H format |
| C55-30044 | **ProteinChip PS10 Array**, A–H format |
| C57-30045 | **ProteinChip PS20 Arrays**, A–H format, 12 |
| C57-30080 | **ProteinChip Q10 Arrays**, A–H format, 12 |
| C55-30082 | **ProteinChip RS100 Arrays**, A–H format, 6 |
| C57-30081 | **ProteinChip SEND ID Arrays**, A–H format, 12 |
| C20-10002 | **ProteinChip Array Forceps,** 1 pair |
| C30-00001 | **ProteinChip CHCA Energy Absorbing Molecules (EAMs)**, 5 mg/vial, 20 |
| C30-00002 | **ProteinChip SPA Energy Absorbing Molecules (EAMs)**, 5 mg/vial, 20 |
| C30-00003 | **ProteinChip EAM-1 Energy Absorbing Molecules (EAMs)**, 5 mg/vial, 20 |

## Appendix

### Biohazard Precautions

The ProteinChip cassette-compatible bioprocessor can be used with biohazardous materials such as serum or urine. When using these samples in the bioprocessor, appropriate personal protective equipment (at a minimum, barrier gloves, eye protection, and lab coat) should always be worn.

Bio-Rad does not recommend reusing the bioprocessor reservoirs.

### Solvent Compatibility

The ProteinChip bioprocessor is compatible with all buffers recommended in the ProteinChip SELDI System Applications Guide. However, some solvents may be incompatible with the reservoir and integrated gasket:

- Acetone (limited compatibility)
- Benzene (incompatible)
- Toluene (incompatible)





BIO-RAD

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***New Zealand*** *0508 805 500* ***Norway*** *23 38 41 30*
***Poland*** *48 22 331 99 99* ***Portugal*** *351 21 472 7700*
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*10008250 US/EG Rev D* *06-0731 1206 Sig 1106*

# ProteinChip® Cassette-Compatible Bioprocessor

## Instruction Manual

Catalog #C50-30011

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

BIO-RAD

## Introduction

Transiently expressed and low-abundance proteins are often difficult to detect, and present an analytical challenge for researchers. Nonetheless, these proteins are fundamental to biological processes and may be potential drug targets or disease biomarkers. The ability to reliably analyze and profile low-abundance proteins allows researchers valuable insight into disease processes and metabolic pathways.

The ProteinChip cassette-compatible bioprocessor is designed for use with a ProteinChip cassette-compatible bioprocessor reservoir (shipped with ProteinChip arrays). The bioprocessor was developed to increase the detection limit sensitivity of the ProteinChip SELDI system, and to improve reproducibility and assay throughput. Using the ProteinChip bioprocessor, larger sample volumes can be applied to a ProteinChip array surface. Increasing the sample volume applied to the array improves the detection limit by exposing the active surface of the array to a higher quantity of protein. The ProteinChip cassette-compatible bioprocessor enables simultaneous processing of up to 12 ProteinChip arrays and is compatible with robotic or liquid handling systems used for 96-well format assays.

## Materials

### Materials Included

- Base clamp assembly
- ProteinChip array cassette (for holding 12 arrays)
- Cassette hold-down frame (for energy absorbing molecule (EAM) addition)
- ProteinChip array forceps (catalog #C20-10002)
- 12 blank ProteinChip arrays

### Materials Needed but Not Included

- MicroMix 5 shaker (Diagnostics Products Corporation)*
- Calibrated multichannel pipet
- ProteinChip arrays with ProteinChip cassette-compatible bioprocessor reservoir

* Recommended; however, an equivalent microtiter plate mixer may be used.



## Shipping

The ProteinChip cassette-compatible bioprocessor is shipped assembled with the cassette hold-down frame in place. The frame can be replaced with the reservoir provided with your ProteinChip arrays.

## Bioprocessor Components

Figure 1 shows the components of the ProteinChip cassette-compatible bioprocessor assembly. ProteinChip arrays (not included) are supplied in cassettes with a disposable bioprocessor reservoir. There is no need to remove the arrays from the cassette to use them in the bioprocessor. Individual arrays can be removed if needed, but should be removed with the forceps provided to avoid touching the surface of the array. Hold the cassette with the spots of the array facing upwards, and use the forceps with the logo facing upwards to ensure a good grip on the array. Remove the bioprocessor reservoir from the top of the cassette before removing arrays. To prevent arrays from sliding out of the cassette during handling, it is recommended that blank arrays (provided with kit) be inserted into unused slots.

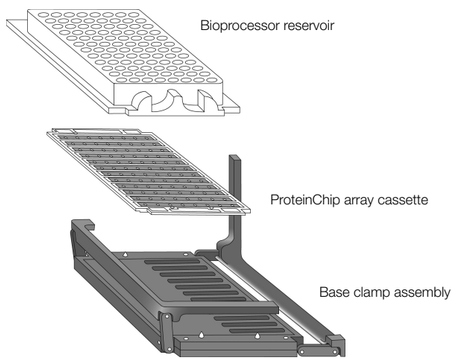


**Fig. 1. The ProteinChip cassette-compatible bioprocessor assembly.**



## Detailed Use Protocol

### Step 1: Assembling ProteinChip Arrays in the ProteinChip Cassette-Compatible Bioprocessor

1. Place the bioprocessor on a lab bench or other flat surface with the solid (back) surface of the bioprocessor down. If you are using the bioprocessor for the first time, you will need to remove the cassette hold-down frame from the bioprocessor base clamp assembly.
2. Extend the leg assembly so that the legs are parallel with the body of the base clamp assembly, and lay the bioprocessor flat on the benchtop (see Figure 2).

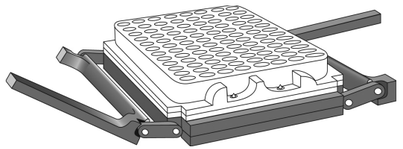

**Fig. 2. The ProteinChip cassette-compatible bioprocessor with its legs extended flat on the benchtop.**

3. Place the ProteinChip array cassette and bioprocessor reservoir on the bioprocessor. The cassette fits in the assembly in only one orientation because of the asymmetric locator pins on the cassette, reservoir, and clamp assembly. This asymmetry ensures that column numbers and row letters are properly oriented.
4. Stabilize the bioprocessor against the bench with one hand to prevent it from tipping. Lift the hinged leg assembly and place it over the reservoir (which has been assembled into the base clamp assembly). Ensure that both of the leg assemblies sit over the edge of the reservoir before attempting to close the assembly as shown in Figure 3.
5. Snap the leg assemblies closed over the bioprocessor reservoir as shown in Figure 4.
6. When assembled correctly, the bioprocessor should look identical to the one shown in Figure 5.



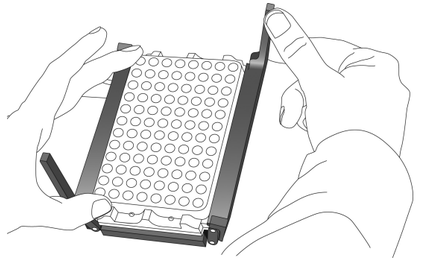

**Fig. 3. Securing the leg assemblies over the reservoir.**

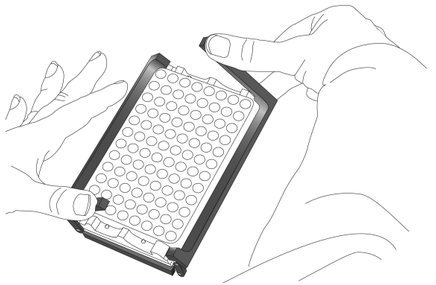

**Fig. 4. Closing the ProteinChip cassette-compatible bioprocessor assembly.**

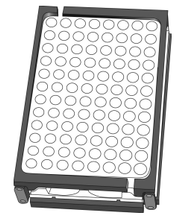

**Fig. 5. The ProteinChip cassette-compatible bioprocessor fully assembled.**