



SELDI TECHNOLOGY

# ProteinChip® SELDI System Qualification and Calibration Kits

- Satisfy requirements for regulated environments
- Improve reproducibility over time with automatic instrument adjustments
- Ensure valid data collection by qualifying instrument on a regular basis

## Acquire Data With Confidence

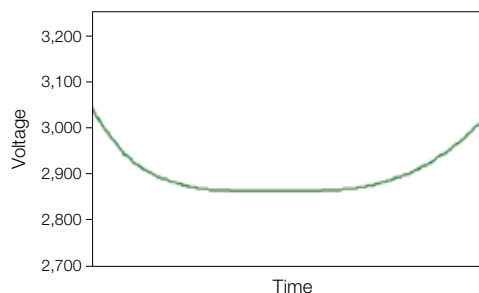
### Introduction

You can improve the reproducibility and reliability of your surface-enhanced laser desorption/ionization (SELDI) data by using the same products and techniques that Bio-Rad's quality control and system service teams use for testing. Bio-Rad offers three testing and calibration kits — the ProteinChip system check kit, ProteinChip OQ kit, and ProteinChip detector calibration kit. The kits use special ProteinChip arrays (detector calibration, detector qualification, and peptide standard arrays), developed specifically to test and calibrate the ProteinChip SELDI reader, Personal and Enterprise Editions. There is no need for matrix or sample addition — simply open the package and insert the arrays into the reader.

### Improved Reproducibility With Automatic Adjustments

Some components common to all mass spectrometers undergo a natural aging process that can alter performance over time. When seeking to improve the reproducibility and signal quality of collected data, it is important to consider the effects of aging components.

The detector is one component that can be adjusted to improve data collection. The detector receives ions and then amplifies the electrical signal that is later translated into a spectrum. Typically, detector output changes over time, producing variability in signal-to-noise ratio (S/N) and peak intensity values. Automatic adjustment of the detector voltage (Figure 1) will compensate for these variations and maintain comparable intensities from one experiment to the next.



**Fig. 1. Simulated aging of a detector.** The ProteinChip detector calibration array makes adjustments to the voltage to maintain constant signal output. Early in the life of the detector, the voltage is decreased; later, it is increased. Note: Different detectors may display different aging characteristics.



ProteinChip System Check Kit



ProteinChip OQ Kit



ProteinChip Detector Calibration Kit

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**Table 1. ProteinChip qualification and calibration kit usage guide.**

Test/Procedure	System Check Kit	OQ Kit	Detector Calibration Kit
Detector calibration	Up to 8 weeks of use	Up to 16 weeks of use	Up to 8 weeks of use
High-voltage conditioning	Unlimited use	Unlimited use	—
Detector sensitivity	1 test	6 tests	—
Resolution at 5.96 kD and mass drift	12 weeks of testing	12 weeks of testing	—
Resolution at 1 kD	—	12 weeks of testing	—
Mass accuracy	—	12 weeks of testing	—

### Qualification and Calibration Testing

All ProteinChip qualification and calibration kits include a ProteinChip detector calibration array. One or more kits (Table 1) perform or test for:

**High-voltage conditioning** — cycles the ion source voltage to decontaminate interior surfaces.

**Detector sensitivity (IgG S/N)** — ProteinChip detector qualification array verifies accurate reader response to both low (10 fmol) and high (140 fmol) concentrations of a test protein, IgG.

**Resolution at 5.96 kD and mass drift** — ProteinChip peptide standard array verifies resolution and mass precision across the array.

**Resolution at 1 kD** — ProteinChip peptide standard array measures resolution at the Arg8-vasopressin peak.

**Mass accuracy** — ProteinChip peptide standard array tests mass accuracy (match to theoretical mass) and mass precision (mass deviation in ppm); standard calibration protocol is applied both externally and internally.

**Compliance reports** — easily generate reports showing compliance using ProteinChip data manager software 3.5 or greater. The software processes the data and generates a complete report. ProteinChip data manager software 3.5 is available as a free update for users owning ProteinChip data manager software 3.0. Please contact your local Bio-Rad representative for your free update.



### Qualification and Calibration Kits

#### ProteinChip System Check Kit

The ProteinChip system check kit (catalog #C70-00081) allows laboratories to calibrate the detector, perform high-voltage conditioning, verify detector sensitivity, and evaluate mass drift and resolution. Use this kit to ensure your system is performing within specifications and to ensure the reliability of your data.

#### ProteinChip Operational Qualification (OQ) Kit

The ProteinChip OQ kit (catalog #C70-00080) is designed for use in regulated laboratories. This comprehensive evaluation tool includes all tests in the ProteinChip system check kit, plus two additional tests (resolution at 1 kD and mass accuracy).

#### ProteinChip Detector Calibration Kit

The ProteinChip detector calibration kit (catalog #C70-00082) is recommended as part of a weekly routine to keep the ProteinChip SELDI reader optimized for reproducibility. The detector calibration array automatically adjusts the voltage to stabilize signal output over the detector's lifetime. This affordable kit is highly recommended for researchers performing long-term studies and for others who obtain and compare data over time.

### Ordering Information

Catalog #	Description
C70-00080	<b>ProteinChip OQ Kit</b> , includes 2 detector calibration arrays, 6 detector qualification arrays, 2 peptide standard arrays, CD with protocols, instructions
C70-00081	<b>ProteinChip System Check Kit</b> , includes 1 detector calibration array, 1 detector qualification array, 1 peptide standard array, CD with protocols, instructions
C70-00082	<b>ProteinChip Detector Calibration Kit</b> , includes 1 detector calibration array, instructions

The SELDI process is covered by U.S. patents 5,719,060; 6,225,047; 6,579,719; and 6,818,411 and other issued patents and pending applications in the U.S. and other jurisdictions.

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