SMCxPRO™ Immunoassay System

Sensitivity You Can Count On



The life science business of Merck KGaA, Darmstadt, Germany operates as MilliporeSigma in the U.S. and Canada.

Fit for Your Purpose

Protein detection at every level.

Your research demands flexibility to move from platform to platform and assay to assay. Using single molecule counting (SMC™) technology, we offer you the ability to take the analysis of your protein of interest down to femtogram/mL levels using the ultrasensitive protein detection SMCxPRO™ platform. This improved level of sensitivity allows for previously undetectable proteins to now be quantified, including endogenous levels.

This expands our fit for purpose portfolio of immunoassay platform solutions from simple-to-run ELISAs, rich multiplex profiling data using Luminex® xMAP® technology, maximum throughput with the Gyrolab® workstation and now enhanced sensitivity using the SMCxPRO™ platform. You can count on our full range of platform options for unparalleled assay validation and improved insights into novel biological mechanisms.

Flexibility and sensitivity: our platforms fit your purpose

Protein Detection Platforms	Fit for Purpose	Quantitative	Sensitivity	Sample Volume	Dynamic Range	Multiplex Capability	Custom Assay Support
Luminex® platform							
	Multiplex detection Flexible platform	Yes	pg/mL	~25 µL	•••	✓	✓
SMCxPRO™ or Erenna® system							
	Ultrasensitivity High performance	Yes	fg/mL	5–100 µL	•••	–	✓
ELISA							
	Plate reader compatibility Most widely cited	Yes	pg/mL	50–100 µL	•	–	✓
Gyrolab® workstation							
	Fully automated High precision	Yes	pg/mL	< 5 µL	•••	–	✓

• Good Performance •• Strong Performance ••• Superior Performance

Discovery Depends on Detection

When the success of your research requires identifying and quantifying low-level proteins, you need technology you can rely on to detect your target.

With the SMCxPRO™ platform you can now detect extremely low-levels of established disease biomarkers and as a result monitor small changes in protein concentrations to accurately measure biomarkers associated with disease progression. In addition, the small sample volume requirements allow you to conserve valuable samples, reduce program costs and improve productivity. This affordable, fast and compact benchtop instrument allows research labs, including ones on a budget, to access reliable protein detection and expand the quest for drug discovery and development.

SMCxPRO™ Platform Benefits

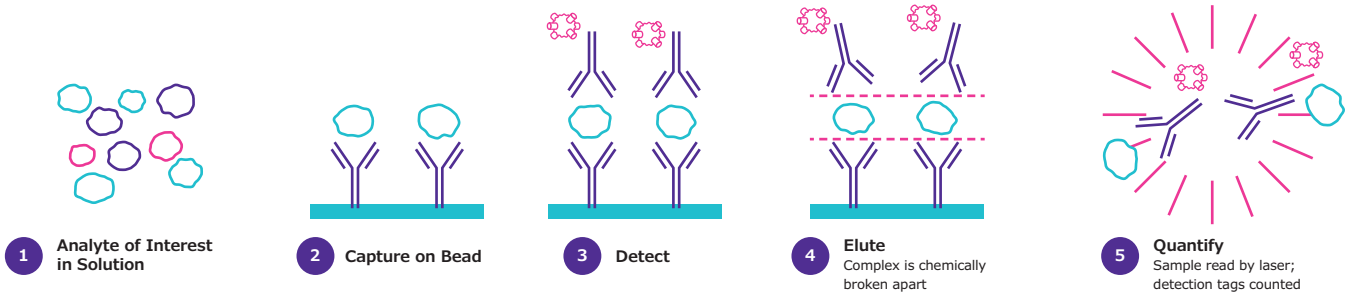
- High sensitivity (femtogram/mL) quantification
- Analysis in <1 hour
- Minimal bench space: 14” W x 16” H x 17.5” D
- Bead-based kits
- Access to over 600 proven antibody pairs



SMC™ Technology: Reduced Background + Increased Signal

Quickly detect low-levels of protein and expand your research to the next level, all within a benchtop device.

Standard | Proprietary



1 **Analyte of Interest in Solution**

2 **Capture on Bead**

3 **Detect**

4 **Elute**
Complex is chemically broken apart

5 **Quantify**
Sample read by laser; detection tags counted

Single molecule counting (SMC™) technology provides maximum immunoassay performance while following a workflow very similar to traditional ELISA technology. By combining a unique assay elution step and robust digital counting, SMC™ technology achieves improved signal-to-noise ratios over traditional immunoassay technologies, thus providing quantification at both low and high levels of expression on one complete system.



SMCxPRO™ Instrument Performance Specifications

The SMCxPRO™ immunoassay system offers a lower cost solution to meet your high sensitivity assay requirements. When quantifying low levels of proteins is critical to your research, you need equipment you can rely on to detect your target.

SMCxPRO™ Platform Specifications

Metric	Specifications
Slope	>1.2 response/fM
Background	< 3 response
Limit of detection (LoD)	<1 fM
Precision	<10% CV[1]
Dynamic range	>4 logs

[1]DE measurements from 30fM calibrator, n=20

Read Plate Format

- 384-well plate

Network/PC Requirement

- Microsoft Windows® 10 Operating Systems
- A static IP address and an FTP server
- xPRO software included

Power Requirement

- U.S.: 115 VAC, 50-60 Hz (operating range 90-125 V)
- Int.: 230 VAC, 50-60 Hz (operating range 180-250 V)



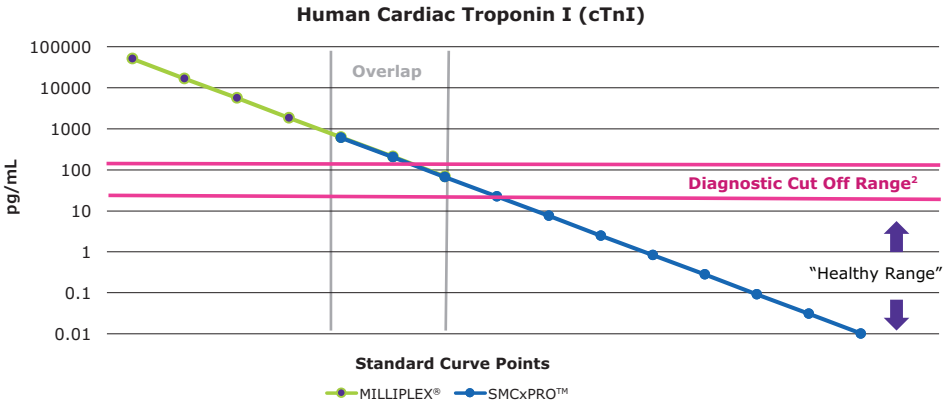
Meeting Your Changing Needs with a High Sensitivity Option

When your work demands higher sensitivity, it's time to make the move to the SMCxPRO™ platform. Our best-in-class MILLIPLEX® MAP assays allow you to quickly and easily screen multiple markers and the SMCxPRO™ platform allows you to take this even further, to the femtogram/mL level.

With access to over 600 proven antibody pairs, our portfolio enables a seamless transition from platform to platform.

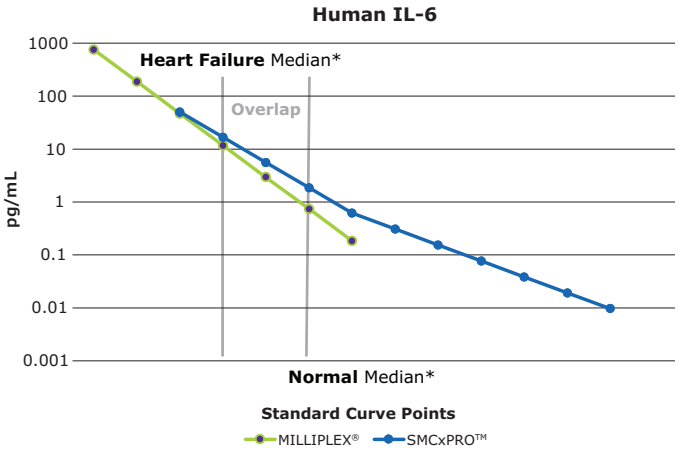
Taking the next step from MILLIPLEX® to the SMCxPRO™ platform

With MILLIPLEX® and SMCxPRO™ platforms you can now cover the complete quantitative measurement of diseased states. This improved sensitivity range allows for early recognition of marker changes which will ultimately improve diagnostic and patient care.



A combination of the MILLIPLEX® Human cTnI (Cat. No. HCVD1MAG-67K) and SMCxPRO™ Human cTnI (Cat. No. 03-0092-00) assays provide a 7 log range of detection. This allows for the exploration of patient samples both pre and post myocardial infarction.

[2] The Journal of the International Federation of Clinical Chemistry and Laboratory Medicine. Prof. Mauro Panteghini, MD, PhD http://www.ifcc.org/ifccfiles/docs/1402062003014.pdf



Both the MILLIPLEX® Human IL-6 (Cat. No. HSTCMAG-28SK) and the SMCxPRO™ Human IL-6 (Cat. No. 03-0089-01) assays provide detection and resolution of the cytokine within a study population. The combination of platforms allows for the detection and exploration of the biomarker on a multiplex platform, with detailed detection and resolution of the underlying changes in the marker by an ultra-sensitive technology.

* As defined in a population of;
- Normal N =125 40-65 year olds
- Heart Failure N = 32 age matched
- Data generated using the Erenna® platform

"Reference range and short- and long-term biological variation of interleukin (IL)-6, IL-17A and tissue necrosis factor-alpha using high sensitivity assays."[3]

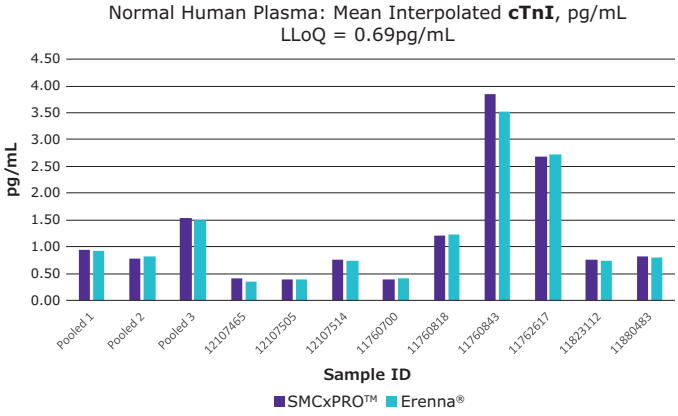
[3] Todd et al, Cytokine, 64, p 600-605, 2013.

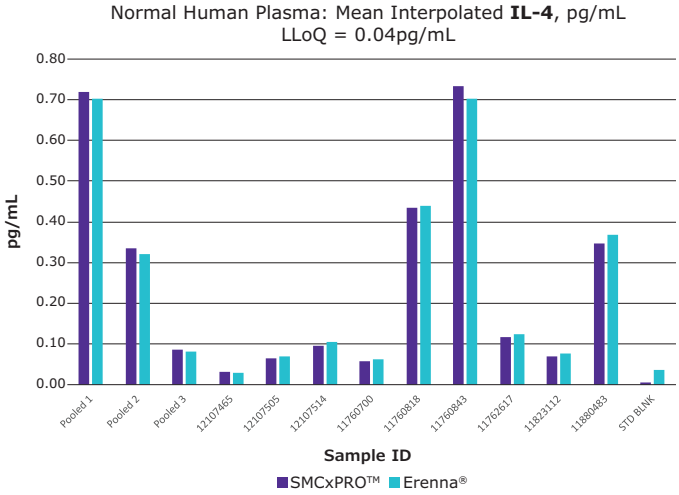
Move from the Erenna® to SMCxPRO™ Platform with Confidence

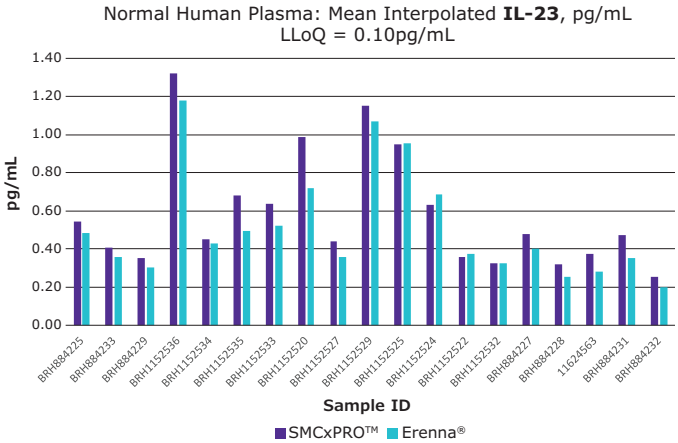
SMC™ technology has utilized the Erenna® instrument for years as a proven, reliable instrument for high sensitivity protein measurement. The SMCxPRO™ platform expands our portfolio to provide a compact affordable option to achieve the same high sensitivity. We provide an extensive offering of highly validated immunoassay kits as well as hands-on assay development training to allow you to develop assays that fit your own needs. **For a full listing of assays for the SMCxPRO™ platform visit EMDMillipore.com/smcxpro**.

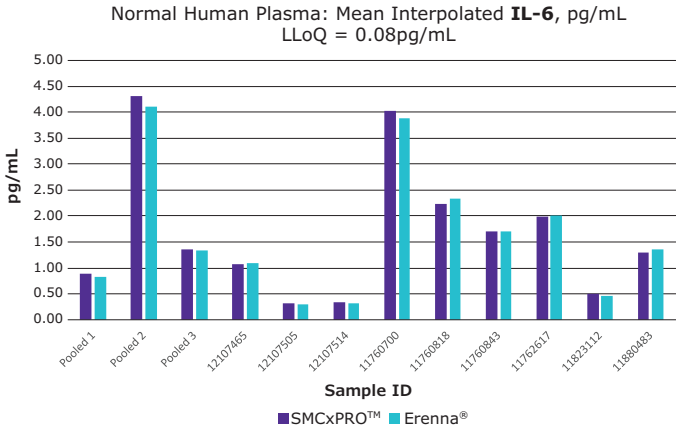
SMCxPRO™ vs. Erenna® Platform Comparison

Individual and pooled plasma samples from four SMC™ immunoassay kits were analyzed on both the SMCxPRO™ and Erenna® platforms. For all four analytes measured, the mean interpolated concentration of each sample (R^2) was nearly identical between the two instruments. Human cTnI (Cat. No. 03-0092-00), R^2=0.9944, Human IL-6 (Cat. No. 03-0089-01), R^2=0.9972, Human IL-4 (Cat. No. 03-0052-00), R^2=0.9976, and Human IL-23 (Cat. No. 03-0112-00) R^2=0.9413. These results demonstrate that the SMCxPRO™ instrument gives similar sample results to those from the Erenna® system and you can confidently move from one platform to the other.









Service Support Programs

The SMCxPRO™ system provides a highly sensitive, affordable and easy to use protein quantification solution for your research. This instrument is backed by expert technical support and advanced processes to ensure smooth operation, reliability and consistency.

Instrument Service Plans

Get the most out of your SMCxPRO™ platform. Choose one of our best-in-class service plans and be confident that your system is always in excellent condition and able to meet your needs.

We offer a wide range of service agreements and preventative maintenance plans that are supported by highly-trained service professionals and technical support representatives.

As part of our complete solution, our service agreements are structured, yet flexible, allowing you to select the level of support that you prefer.

	Three Service Plans to Choose From All Include One Year Onsite Service		
	Total Service Plan	Advanced Service Plan	Essential Service Plan
	Benefits	Benefits	Benefits
Service Visits	Unlimited	1 Floating	–
Coverage	All parts	–	–
Preventative Maintenance Visit	1 Visit	1 Visit	1 Visit
Preventative Maintenance Kit	1 Kit	1 Kit	1 Kit
Calibrator	One 5-set	One 5-set	One 5-set

Advantages of maintaining a service plan

- Best-in-class service support maintains optimal performance, enabling high quality data
- Planned instrument maintenance reduces overall service costs
- Service plans are the best protection for your instrument and its long-term operation

Product Warranty and Limitation of Liability

The applicable warranty and limitation of liability for the products listed in this publication may be found at **www.EMDMillipore.com** within the “Conditions of Sale” applicable to your purchase transaction.

Custom Assay / Sample Testing Services

Offering Scientific Partnership and Support

When time and resources require an expert outsource partner to help accelerate programs from discovery into clinical trials, we offer an experienced scientific team of custom assay professionals that will work with you to develop a customized project work plan unique to your needs.

Throughout the project, you will receive progress updates, with easy access to the team for questions and discussion related to the project. Final study reports may be personalized to meet your specific needs. If your program requires good laboratory practice (GLP) services, we can facilitate the technical method transfer to a contract research organization (CRO) of your choice.

Custom Services Capabilities:

Collaborative Biomarker Discovery and Development

- Fit-for-purpose sample testing (non-GLP) – preclinical to early clinical studies
- Immunoassay development
- Biomarker validation (to sponsor requirements)

Biotherapeutic Discovery

- Pharmacokinetics
- Pharmacodynamics
- Immunogenicity

Reagent Labeling and Characterization

- Antibody screening and selection
- Antibody labeling
- Assay stability testing

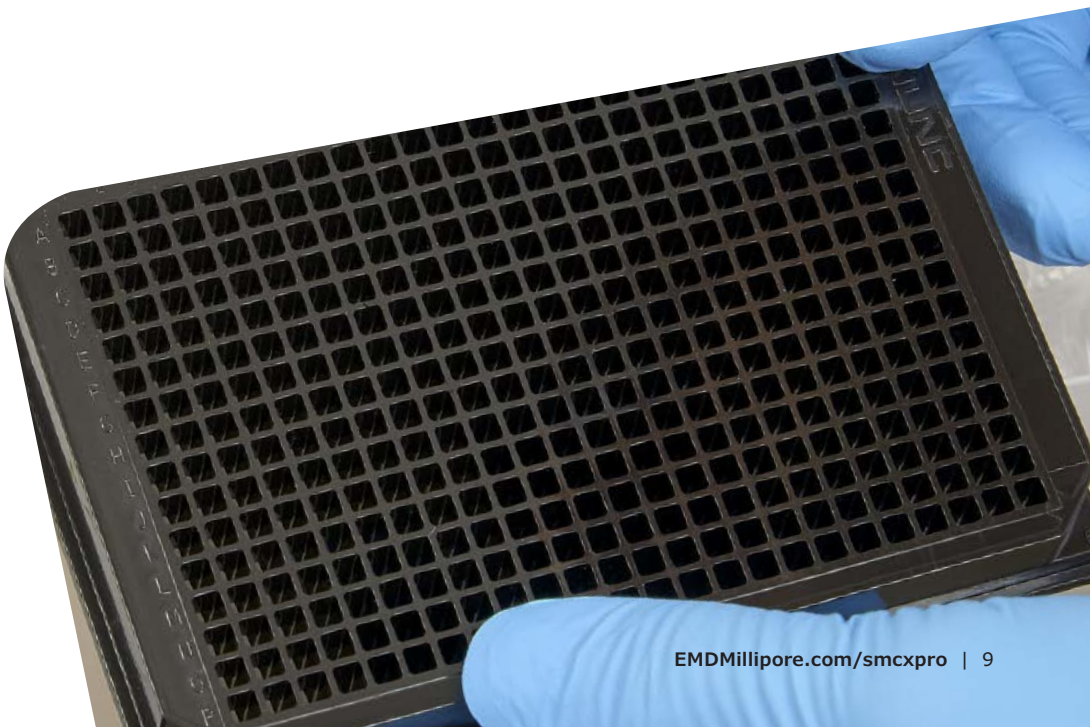
SMC™ Assay Kit Development

- Proprietary or commercial SMC™ assay kit development
- Assay kit verification and validation
- Assay kit manufacturing
- Method transfer to CRO

Sample Testing

- R&D and prototype assay kit sample testing
- Commercial assay kit sample testing
- To assess potential biological relevance in real samples
- To assess biological anomalies that may occur due to such things as drug interference or matrix effect

For more information, contact Custom Assay Development Services at **customassay@EMDMillipore.com**



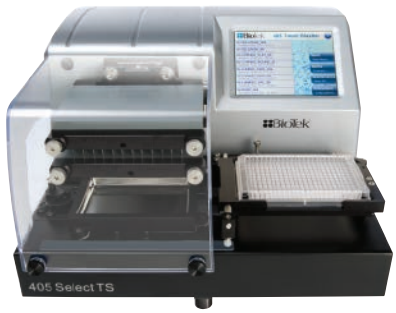
Let's Get Started

However you wish to build your experiment, we provide you with experienced technical support to advance your research every step of the way. In addition to our portfolio of kits, we offer affordable hands-on custom assay development training to help you develop an assay to your own protein of interest.



SMCxPRO™ Instrument and Installation Services

Description	Cat. No.
SMCxPRO™ System	**95-0100-00**
Standard SMCxPRO™ Installation	**96-2011-00**
SMCxPRO™ IQ/OQ Installation	**96-2012-00**
SMCxPRO™ Service	**96-2013-00**
PQ Kit for SMCxPRO™	**96-2020-00**
SMCxPRO Training—System/Software Only - 1 day	**96-2022-00**
SMCxPRO Advanced Training—System/Software and IL-6 Assay - 2 days	**96-2023-00**
SMC Assay Development Training	**96-2024-00**
SMC Assay Development Training - extra per day	**96-2025-00**
Shipping, Handling & Logistics Fee	**96-2026-00**



Immunoassay Kits

Available kits for SMCxPRO™ system are continuously expanding, so check regularly for updates at **EMDMillipore.com/smcxpro**

Ancillary Equipment for the SMCxPRO™ System

Description	Cat. No.
SMC™ Automation Optimization	**96-0019-00**
BioTek® 405TS, Gauge, Vacuum, MagPlate	**95-0004-05**
Tecan HydroFlex™ with MagPlate	**95-0014-00**
Jitterbug™ Shaker	**70-0009-00**



Introducing the SMCxPRO™ Platform

sensitivity you can COUNT on

0.000074

0.00005

0.000011

0.000052

0.000091



Go from Zero to Femtogram Faster Than Ever

Detect low-abundant proteins at the fg/mL level with the sensitivity and speed of the new SMCxPRO™ platform. Powerful. Compact. And affordably priced.

Find Your Target
EMDMillipore.com/smcxpro

MilliporeSigma

To place an order or receive technical assistance

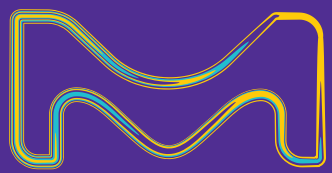
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