

## MULTIPLEXING OF IMMUNOASSAYS OR LATERAL FLOW IN 4 STEPS

Our multiplex platform represents a complete solution to create a multiplex test with your probes. You can start from scratch, or transfer existing single well or already partially multiplexed assays.

The combination of miniaturization, multiplexing, production, detection and data analysis results in high performance multiplex assays that you can rely on.

### Feasibility Study

- Microarray and assay design
- Printing on preselected support
- Assay incubation & detection
- Detailed report

### Development

- Assay specification
- Customized surface functionalization
- Evaluation of printing parameters
- Protocols for printing, immobilization and assay incubation
- Evaluation of detection methods
- Characterization of assay performance: specificity, sensitivity, dynamic range, reproducibility
- Including QC methods
- Read-out

**Validation / Application tests** - from assay controls to patient samples

### Production / Upscaling production / Arraying service

- High quality microarrays for R&D and IVD applications
- From batch to continuous production
- Short production cycles from purchase order to shipment
- Advanced in-process QC, 100% array control
- According to ISO 9001 or 13485

**We offer miniaturization and multiplexing of classic assay applications to planar array format in wells, and classic lateral flow tests to multi-analyte detection!**

## MULTIPLEXED TESTS: Different needs. One personalized solution.

### Miniaturization / Technology

#### sciDROP PICO

- Dispensing from pico- to nanoliters
- 50 - 500  $\mu\text{m}$  spot size
- Significant reduction of capture probe consumption (105 - 106 fold)

#### ELISA & LFA

- ELISA: transfer from whole well coating to 100  $\mu\text{m}$  spot format
- LFA: transfer from lines to spots
- Including +/- controls and calibration features
- Increased information density
- Consistent or higher sensitivity

### Production / Contract Manufacturing

#### sciFLEXARRAYER

- R&D and high throughput production
- Full in-line quality control
- Automated, walk away function
- Superior printing quality

#### Printing service

- Standard (sciCHIPS, sciPLEXPLATES) and custom supports (biosensors, cartridges)
- Flexible model of outsourcing: from development to production
- Functional quality control



### Multiplexing

parallel detection of several analytes & controls in **ONE** cavity

### Supports & Immobilization

- Standard formats (slides and plates): easy to use
- Tailor-made surface functionalization
- sciPOLY3D: biofunctionalization of unmodified polymers

### Incubation

- sciBUFFER system: optimized for multiplexed applications and tailor-made surface functionalization
- Assay protocol development & optimization

### Detection / Analysis / Report

#### sciREADER CL2

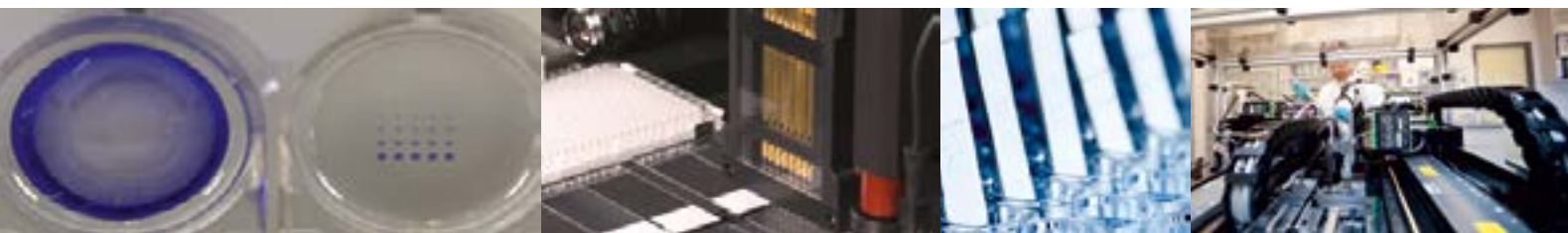
- Fast read-out: 2 minutes for 96 arrays
- Top and bottom lighting for opaque and transparent supports

#### sciREADCL2 software

- Applicable from R&D to routine diagnostics
- Intuitive, easy-to-use software
- Automated detection and analysis
- Customization of array analysis and report formats

### Why choose SCIENION?

- **Unique feature: full package necessary for multiplexing**
- **Modular development service & tailor-made solutions**
- **Over 15 years of SCIENION Know-How: customized service & support**



## RELATED PRODUCTS

### sciMULTIPLEX Box

The sciMULTIPLEX Box contains selected consumables to facilitate transfer of multiple traditional singleplex immunoassays to one multiplex immunoassay. The goal of this kit is to expedite setting up a proof-of-concept multiplex assay as a solid base for further development and validation.

#### sciBUFFER Systems

- Optimized for DNA and protein microarray assays
- Compatible with all major microarray spotters

#### sciPLEXPLATES

- Microplate qualified for array based applications allow cost reduction by saving reagents
- High immobilization efficiencies of biomolecules from optimized binding surfaces
- Compatible with standard lab automation (pipettors, washers, incubators, etc.)

#### sciCOLOR

- Optimized substrate for colorimetric staining of microarrays
- High sensitivity and homogeneous coloring

### sciPOLY3D

sciPOLY3D enables covalent and robust immobilization of biomolecules on virtually all common unmodified plastic substrates. This feature eliminates all wet chemistry steps in the microarray manufacturing process and facilitates for example the bio-functionalization of structured substrates.

- Direct immobilization of capture probes on unmodified supports
- Suitable for multiplex tests on microfluidic devices, slides, MTPs
- Cost-efficient and less time-consuming compared to many other surface functionalization

### sciREADER CL2 optimized for sciPLEXPLATES

sciREADER CL2 allows for high quality digital imaging of 96-well plates for standard colorimetric single parameter immunoassays AND multiplexed arrays.

- High resolution digital imaging of colorimetric microarrays
- Automated spot finding, image analysis and evaluation of arrays
- Customization of array layout, analysis and reporting

SCIENION offers complete solutions for precise liquid dispensing applications, multiplex assays and high throughput production of multiparameter assays in diagnostics, life and material sciences.

Based on SCIENION's core competencies in non-contact ultra-low volume liquid deposition, customized instrumentation, assay miniaturization and production services, we redefine the limits of multiple analyte testing with an innovative and complete multiplex-enabling platform, backed by renowned German engineering quality.

SCIENION is certified according to DIN EN ISO 9001:2008 for the development, manufacture and sales of dispensing systems and microarrays and to ISO 13485:2003 for manufacture, packaging, distribution of microarrays and Installation / Service of microarray production Systems for use in genomics, proteomics and glycomics.



**SCIENION is your first choice for precise and scalable solutions for multiplex-capable lateral flow rapid tests, microfluidics, biosensors, and biochips.**

#### Facts

2001	Max Planck Institute for Molecular Genetics Spin-off, start in Berlin, Germany
2001	First DNA biochip sold
2003	Launch hardware products
2009	ISO 9001:2008 certification
2009	Start customized manufacturing of biochips
2011	US subsidiary SCIENION US, Inc. in New Jersey, USA
2016	Fifteen years ENABLING LIFE SCIENCE
2017	Expansion with new US Headquarter in Tempe, Arizona, USA



sciMULTIPLEX PLATFORM

## MINIATURIZATION & MULTIPLEXING FOR OPTIMAL PRODUCTIVITY

- simultaneous detection of multiple analytes in a single sample
- reduced consumption of patient samples, probes and reagents
- lower costs per data point and better study feasibility
- quantification over a broad dynamic range
- higher throughput than traditional single-well assays
- improved assay performance in microplates and lateral flow formats

The sciMULTIPLEX PLATFORM combines SCIENIONs state-of-the-art non-contact dispensing technology with high quality consumables, protocols, hardware, scientific knowledge, and experience from SCIENION, addressing the needs of our customers to produce robust high quality multiplex tests for diagnostics and life science research.

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