iMSPR Plex

The Most Sustainable Molecular Interaction Analysis system

ТехноИнфо

iCLUEBIO

iMSPR-Plex

Contents

The most reasonable label-free interaction analysis

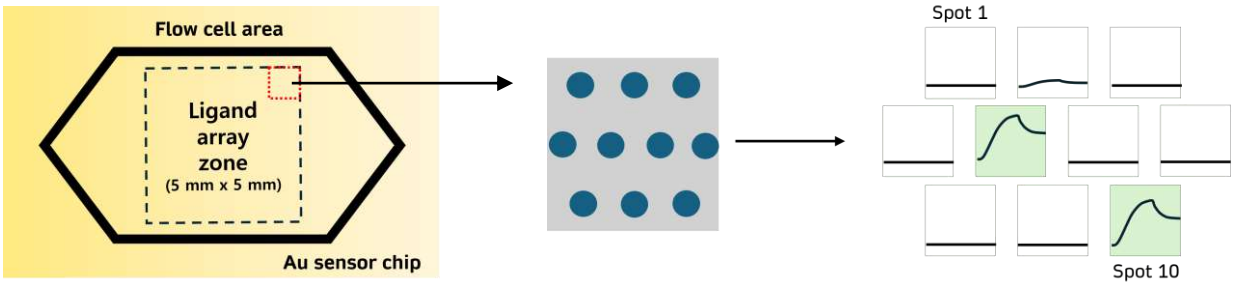
Revolutionary Multi-Array SPR System: iMSPR-PlexM
iMSPR-PlexM is an advanced SPR system designed for comprehensive multi-molecular binding analysis. With the ability to perform **multiplexing assays** of **up to 250 analytes on a single chip**, it delivers **high-volume data in an exceptionally short time** using only minimal sample amounts. By utilizing iMSpot, an automated spotter model developed by icluebio and optimized for SPR sensor chips, users can conveniently produce sensor chips with ligands arranged in customized configurations, tailored to their specific experimental needs. PlexM is the optimal choice for screening candidate substances in the early stages of drug discovery and ensures highly efficient analysis in epitope studies and Fc receptor testing for antibody drugs.

Experience the future of bioanalysis with iMSPR-PlexM – where precision meets innovation.

Core Features

up to	for	less
250	**10**	**1**
interactions	**minutes**	**microliter**

With iMSpot, users can immobilize or capture ligand materials on the sensor chip in a precise spot pattern, tailored to their experimental needs. Using a 80 µm pin, up to 10 spots per unit area and a maximum of 250 spots can be arranged within a compact 5 x 5 mm ligand array zone. Once the sensor chip with ligand spots is mounted on the iMSPR PlexM, simply inject the analyte. This cutting-edge system enables the observation of up to 250 molecular interactions in just 10 minutes, offering unparalleled efficiency and throughput.



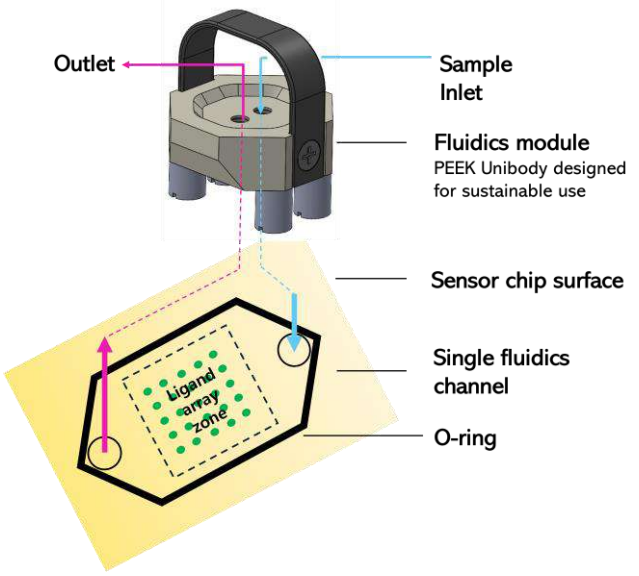
up to 250 spots/chip | **10 spots/ unit area** | **Multi-sensorgrams in 10 min**

Maximize Efficiency with Minimal Ligand Usage

Traditional SPR systems typically require around 200 µL to immobilize ligands in a single channel at concentrations ranging from 1–100 µg/mL. In contrast, iMSPR-PlexM revolutionizes this process with pin spotting technology, enabling the immobilization of multiple ligands on a single chip using less than 1 µL of sample at concentrations between 10–1000 µg/mL. With iMSPR-PlexM, you can significantly reduce ligand consumption while achieving precise and efficient results.

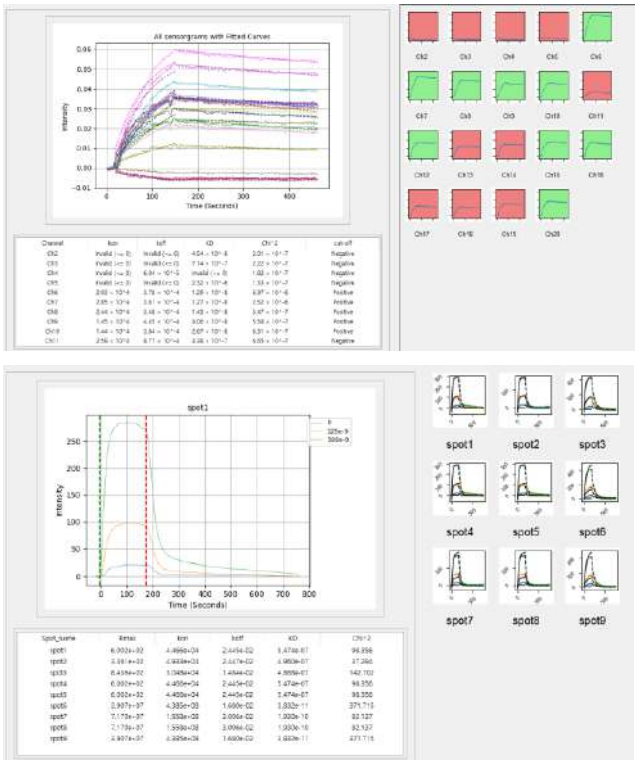
Sustainable hexagon type fluidics modules

Through the hexagon(H)-type fluidics module, binding reactions can be performed with multiple ligands at once in a continuous flow manner. In addition, the H-type fluidics module can be used semi-permanently because it is manufactured as a PEEK-based unibody.



Streamline Drug Discovery with Advanced Kinetics Screening

The single-concentration kinetics screening function is highly effective during the early stages of drug discovery. Substances that meet or exceed the user-defined cut-off points for binding yield and kinetics values are highlighted in green, enabling users to easily identify hits from a large number of samples. For more precise evaluations, the system also supports experiments using multiple ligands at varying concentrations with a single analyte, delivering greater accuracy and deeper insights than single-concentration screening alone.



Specifications of iMSPR-PlexM

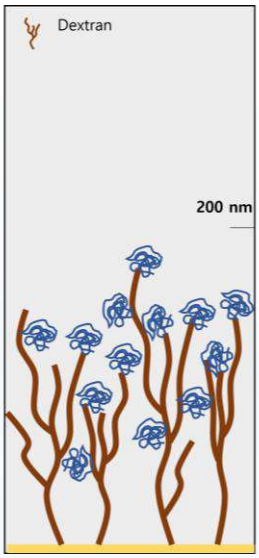
Including	iMSPR-PlexM main system (1ea), Peristaltic pump with single channel (1ea), Degasser with single channel (1ea) H-type Fluidics module (1ea), Prism holder (1ea), Detach tool (1ea), PC (1ea), Flat tweezer (1ea), Matching oil (3ml), USB cable (1ea)
Warranty	1 years
SPR type	Reflect intensity measurement at fixed angle
Flow cell / Volume	1 FC, 3 µl
Light source	770 nm LED
Detector	2D CMOS image sensor, 1/1.8”, 3.2 MP, Pixel size: 3.45 um
Incident light range	Fixed angle
Affinity range	pM ~ mM
Noise level	1 RU
General analysis time/sample	2~15 min
Sample injection	Syringe, one by one injection
Sample loop volume	500 µl, partial injection available
Main application	Yes/No screening, Rate on/off constants, Epitope mapping/binning, Biosensor development, Academic, Diagnostics
Analytes	Proteins, DNA/RNA, Peptides, Small compounds, Polysaccharides, Lipids, Viruses, Cells
Power	100-240 volt
Materials	Aluminum (more 90%), PEEK

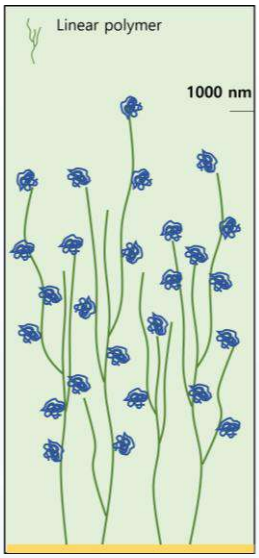
Specifications of iMSpot

Including	iMSpot main system (1ea), Xtend array pin (300 μm 1ea), USB cable (1ea) , Power cable
Warranty	1 years
Number of pin	1
Pin Diameters	80, 130, 200, 300, 500 μm (Xtend array pin)
Axis resolution	± 10 μm
Capacity of chips	12 (10 x 14 mm, 12x 12 mm)
Capacity of well plate	1
Well plate types	384 (standard), 96
Maximum spots in 1mm x 1mm (max)	10
Maximum spots in one chip (max)	250 (80 μm pin) 100 (200 μm pin) 50 (300 μm pin)
Humidity control	Yes (자연 대류 방식)
Cooling	No
Pin wet washing	Yes
Volume of wash buffer	1.5 ml / wash tube
Number of wash tube	6
Pin dry	Yes (using vacuum)
Communication	USB
Power	100-240 volt

Sensor chips guide

icluebio sensor chips are meticulously designed to support a wide range of applications. We provide an extensive selection of sensor chip surfaces, offering various types, functional groups, densities, and thicknesses to meet your specific needs. Selecting the appropriate sensor chip surface depends on several factors, including the type and size of the analyte, the ligand immobilization method, and considerations such as non-specific adsorption. With icluebio, you can confidently optimize your experiments for precision and reliability.





	Dextran	Linear hydrogel
Linker	Dextran	Linear polymer
Thickness	100 nm	> 100 nm
Functional group	COOH	COOH, NTA
Glass Size	14x10x0.33 mm	12x12x0.33 mm
Glass material	BK7	BK7
Adhesive	Cr	Cr
Metal layer	Au	Au
Linker material	Dextran	Linear polymer
Immobilization level	High	High+
Non-specific adsorption	Low	Low

Representative Sensor chips

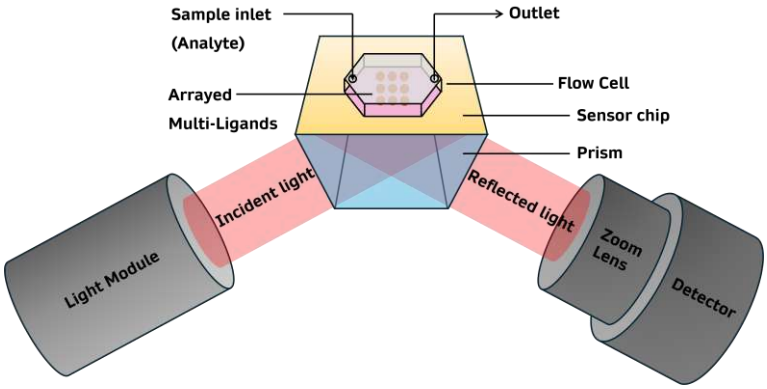
Application (ligand-analyte)	Suggested chips	Product Name
Proteins-Proteins	Carboxyl modified dextran chip	C-Dex100
Proteins-chemicals	Linear polycarboxylate chip Carboxyl modified dextran chip	HC1000 C-Dex100
Proteins-vesicles	Carboxyl modified dextran chip	C-Dex100
Biotinylated (Avi-tag) proteins-Analytes	Avidin immobilized sensor chips using Biotin-molecule capture kit	NA-Dex100 NAHC1000

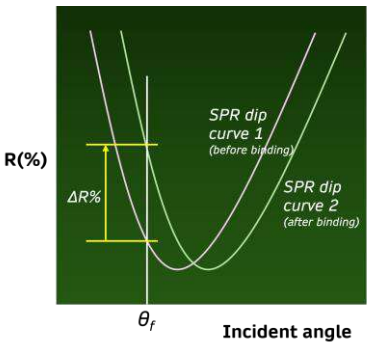
Capture kits

Product	Product #	Purpose of use
Amine coupling kit	IMAM1000P	Covalent immobilization of ligand proteins
His-tag capture kit	IMNT1000P	Immobilization of His-tag proteins
Biotin-molecules capture kit 1	IMNA1000P	Immobilization of Biotinylated molecules
Protein A immobilization kit	IMPA1000P	Immobilization of hFc tag or hIgG

What is multi-array based SPR

Multi-array based surface plasmon resonance (MASPR) is a label-free optical detection technology used to monitor and analyze molecular interactions in real time. This SPR technology allows users to visualize the entire working area and analyze it in a multiplexed format, unlike the analysis of a small area of traditional angular interrogation SPR.



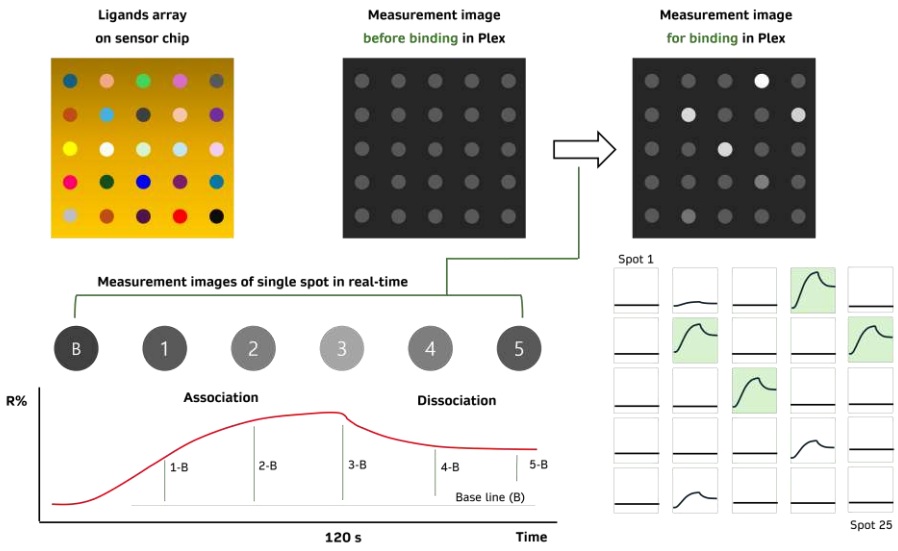


Analysis is performed by flowing a sample solution containing the analyte over a sensor chip where ligands are arrayed in the form of multiple spots. Under the sensor chip, light is incident and reflected at a specific angle in real time, and the reflected light is recorded in real time through a camera.

MASPR basically analyzes the image of the reflected light by incident light at a fixed angle. At this time, multiple analysis can be performed by utilizing the regional intensity difference of the reflected light (*ΔR%*). When molecules bind in a specific area, the intensity of the reflected light increases.

How can get multi-sensorgrams

1. Ligands array chip preparation: Array the ligands to be tested on a sensor chip using the iMSpot system.
2. Insert the ligands array chip into the iMSPR-PlexM device and start the measurement.
3. Flow running buffer before injecting the sample to establish equilibrium (section B).



4. After injecting the sample, measure the change in intensity of reflected light for each spot in real time. (Association section ①-③)
5. Flow running buffer after sample injection is complete. (Dissociation section ④-⑤)
6. If there are multiple samples, remove the previously bound material through the regeneration buffer and repeat steps 3-5.

Applications

Sample type	Proteins DNA/RNA Peptides Small compounds Polysaccharides Lipids Viruses Cells
Application	Yes/No screening Multiple kinetics evaluation
Applicable fields	Drug discovery Drug quality control Immuno-Oncology drug Small compounds Antibody therapeutics Antibody Drug conjugations (ADCs) Bispecific antibody Epitope mapping Immunogenicity Immunoassay based diagnostics

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iCLUBIO was founded in 2017 in Seoul, Korea. It is our mission to create the best tools that can impress customers and discover clues to life phenomena that can be helpful to mankind. Currently, we are putting all our capabilities and passion into an analysis system based on Surface Plasmon Resonance that can observe intermolecular bonds in real time without labeling. icluebio aims to develop, create, and provide innovative but honest and robust but precise tools that can analyze intermolecular bonds more conveniently and accurately. And we hope that you will be moved and surprised.

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