

Novel Bio-detection system allows detections even when disease markers are unknown!

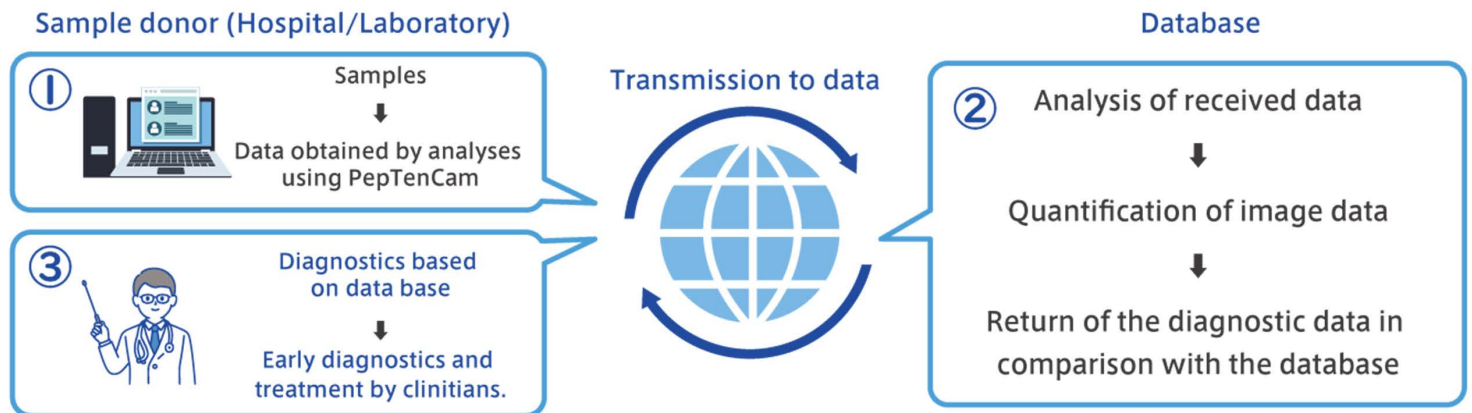
The novel diagnostic system for the Next Generation. **PepTenChip®**

- **Rapid determination of diseases that are difficult to diagnosed by conventional methods.**

PepTenChip® provides objective diagnostic indexes for diseases with unknown markers through multivariate analysis.

- **Pre-emptive medical care, In-house diagnostics, Remote diagnostics**

It enables simple diagnosis without tissue sampling, leading to early detection, diagnosis, and treatment of diseases.



Material for chip-substrate

Amorphous Carbon Substrate

Substrates made from amorphous carbon produced by heating ⇒ resin plates at 1,200°C under inert atmosphere.

- Extremely low non-specific adsorption
- Low self fluorescence
- Higher thermal and electric conductivity
- Uniformed distribution of functional groups for immobilization.
- Excellent properties for microfabrication
- Energy saving and environmentally friendly (Easy regeneration, repeatedly use are possible)

Substrate manufactured by
Nippon Light Metal Company, Ltd.

Difference vs. conventional method

Conventional method

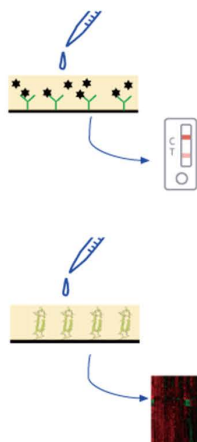
Detection methods based on one-to-one correspondence such as antigen - antibody reaction represented by ELISA, etc.

↓
Highly sensitive but applicable only to diseases for which biomarkers such as antigens are known.

PepTenChip®

A method for detection and characterization of fluorescence intensity changes due to interactions between "fluorescently labeled structured peptides (as capturing molecules)" and "analytes (i.e., disease-related substances)".

↓
Multivariate analysis can also be applied to diseases without known substances such as antigens



Current R and D, applications

Determination of pre-cancer of the gastric diseases

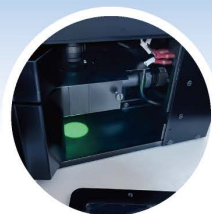
Gastric cancer is known to be triggered by chronic gastritis. Gastritis is diagnosed by gastroscopy, although may be missed depending on the stage of the lesion. Biopsy is also contraindicated in some patients. The present biodetection allows discrimination between mild gastritis and precancerous lesions.

Discrimination of the neuronal disease, intractable "Multiple sclerosis", from related diseases.

Multiple Sclerosis (MS*) can be classified a typical or an atypical of which discrimination is important. Cerebrospinal fluid samples are analyzed using the PepTenChip®. Preliminary discrimination between typical MS, atypical MS and related neuronal disorders are shown.

*MS is designated as "the intractable disease 13" by the Ministry of Health, Labour and Welfare.

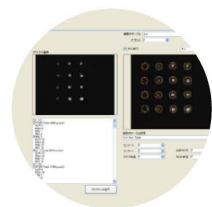
PepTenCam



LED for the excitation light source;
Long-life CMOS sensor for
scientific measurement; 16 bit
graduation highly sensitive
measurements are possible.



Convenient handle equipped on
the cover.
Carry-on size, portable, onsite use.
(outside the laboratory)



Optional software,
specialized for detection and
analyses of microarrays.



Connection with Laptop PC.
Fluorescence detection can be
immediately started.

Compact fluorescence
detector :carry-on baggage



H 370 mm

Weight: 6 kg

Design and manufacturing: HiPep Laboratories (PAT)

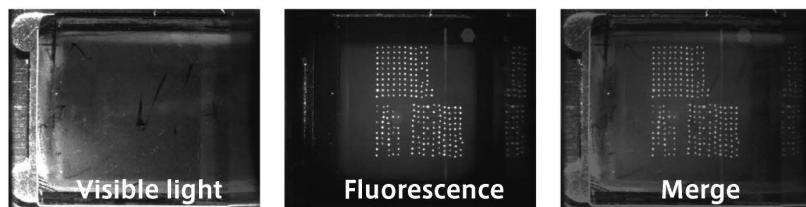
P/N : PTC-FD15

Size/Weight	H 370 x D 253 x W132 mm · 6kg
Camera	sCMOS sensor: 4 megapixel
Excitation light source	LED 531 nm, LED 475 nm (option)
Wavelength range of emission filter	593 nm, 530 nm (option)
Connection	USB 3.0
Compatible OS	Windows10 or later
Power supply	100 ~ 200 V AC

The excitation light source and emission filter are interchangeable
depending on the dye used.

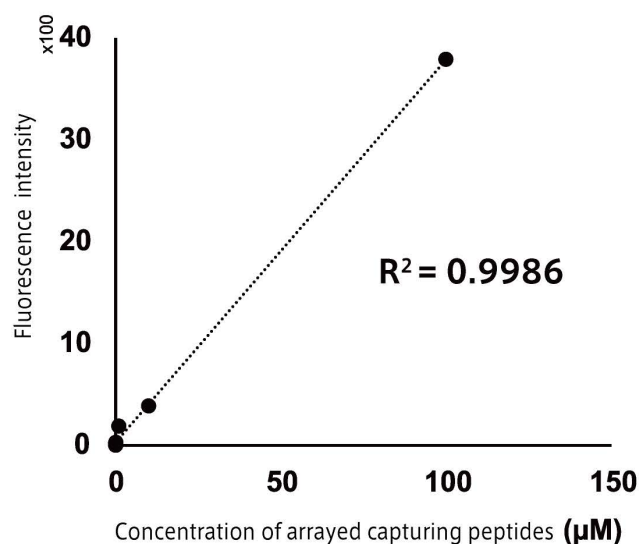
Upon request other wavelengths are available.

Application Data



Picture of a microarray-substrate with fluorescent labeled
capturing peptides: visible light and fluorescence.

Quantitative analysis



The measured fluorescence intensity correlates well with
substance concentrations, and is available for quantitative
analysis.

※10-fold serially diluted solution is measured and the
fluorescence intensity is plotted for each concentration.

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