

A Disruptive New Technology for Infectious Disease Research!

Only PEPPERPRINT's unique peptide microarray platform enables you to

- ✓ pinpoint and profile every possible infectious disease throughout an entire patient population
- ✓ differentiate between similar pathogens at the epitope level
- ✓ order custom microarrays with up to 30,000 high fidelity peptides
- ✓ reliably receive your custom peptide microarrays within 3-5 weeks
- ✓ adjust your microarray from chip to chip and obtain rapid readouts
- ✓ benefit from the highest signal-to-noise ratios available



Here are some examples of PEPPERPRINT's infectious disease microarray applications:

- Screening for neutralizing antibodies against different viral strains for a top 10 pharma company in a clinical trial
- In-depth assessment of antibody binding to key HIV-1 epitopes for a world-class research institute
- Identification of isotype-specific differential epitopes and biomarkers for various viral infections for an international IVD company

What our customers say:

"We were working with the PEPPERCHIP® platform for the first time in order to map epitopes in the envelope protein of a new emerging virus. The provided protocol was easy to perform and staining with the recommended antibodies resulted in explicit results. The provided software PepSlide Analyzer had all tools we needed for a detailed evaluation and was easy to use. Special thanks to the support team of PEPPERPRINT. Every kind of question was answered sufficiently within a very short time."

**Robert Fux, PhD, Head of Viral Diagnostics,
Institute of Infectious Diseases and Zoonoses, LMU Munich, Germany**

"We used PEPPERPRINT's Infectious Disease Epitope Microarrays to analyze the serological response to pathogens in patients with autoimmune disease. I can highly recommend PEPPERPRINT - the support I received for both technical queries and data analysis exceeded all my expectations!"

Dr. Miriam Jane Ball, Medical University of Vienna, Austria

"We have used the 'Epitope Mapping Service' from PEPPERPRINT and the quality of results produced and professionalism of the service surpassed our expectations. The results obtained are very useful for our research and I would not hesitate to use this service in the future or to recommend it to fellow researchers working in the field."

Javier Castillo-Olivares, PhD, Fellow, Orbivirus Immunology, The Pirbright Institute, Woking, UK

Our **disruptive PEPperCHIP® Peptide Microarray** technology offers a variety of solutions for infectious disease screening:

PEPperCHIP® Infectious Disease Epitope Microarray 3.0

- covers infectious disease epitopes of the Immune Epitope Database (www.iedb.org)
- 3,760 epitopes of 196 different pathogens including bacterial, fungal, parasitic and viral pathogens
- ▶ **multiplexed screening of IgG, IgM and IgA antibody responses against a variety of pathogens in a single assay**

PEPperCHIP® Human Epitome Microarray

- covers all linear human B-cell epitopes of the Immune Epitope Database
- 28,895 different peptides covering cancer, infectious diseases, autoimmune diseases, allergens, various other diseases, healthy controls and epitopes to most vaccines
- crosses the bridge between infectious and autoimmune diseases
- ▶ **epitome-wide screening of antibody responses from serum against 28,895 epitopes of infectious diseases, autoantigens, vaccines and allergens**

PEPperCHIP® Virus Proteome Microarrays

- cover whole viral proteomes as overlapping peptides for proteome-wide epitope mappings e.g. for Zika virus, Dengue virus, West Nile fever, Influenza H1N1 and many more
- differentiation of similar pathogens by cross-reactivity screening and identification of unique epitopes
- ▶ **identification of unknown viral epitopes and novel biomarkers for viral infections**

Random Peptides for Serum Signature Discovery

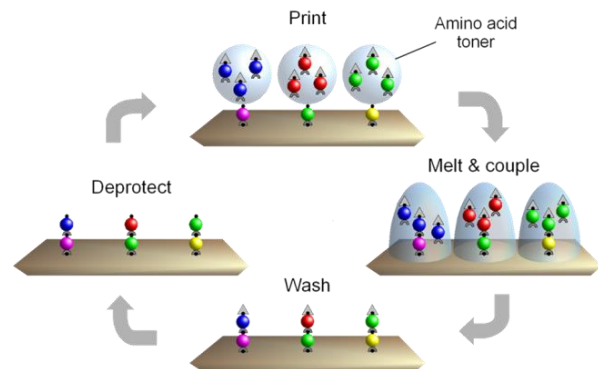
- PEPperCHIP® Signature Microarrays with 4,092 linear random peptides
- PEPperCHIP® Signature Discovery Microarrays with 29,240 linear random peptides
- cyclic constrained random peptides on request
- ▶ **immune signature, mimotope, epitope and antigen discovery from serum samples**

High Resolution Epitope Mapping

- PEPperMAP® Linear Epitope Mapping with maximum peptide-peptide overlap
- PEPperMAP® Conformational Epitope Mapping with cyclic constrained peptides
- Epitope Substitution Scans for discovery of conserved and variable amino acids
- ▶ **infectious diseases epitope mapping and fingerprint analysis**

PEPPERPRINT Platform Technology - Background

In contrast to conventional peptide array technologies, which require peptide pre-synthesis and microarray spotting, PEPPERPRINT has developed a laser printing technology to synthesize linear and cyclic constrained peptide libraries directly on-chip. PEPPERPRINT prints defined patterns of so-called amino acid toners step-by-step onto a glass slide. Between different printing steps, the amino acid toners are melted to release the activated amino acids, and to initiate peptide synthesis. After washing and deprotection of the N-terminal Fmoc group, the next pattern of amino acid toners is printed and coupled. Routine double coupling steps and ultrasonic washing protocols enable high quality peptide synthesis to get best signal-to-noise ratios in assaying your samples.



Advantages:

- up to 2 x 30,000 different peptides per microarray
- linear and cyclic constrained peptides
- unlimited sequence variety accompanied with low synthesis costs
- fully scalable from single to hundreds of microarrays within only 3-5 weeks
- peptide content can be easily adjusted from project to project
- maximum peptide-peptide overlap for high resolution epitope mapping
- ISO 9001 certified quality

Please contact us to find the optimal solution for your project. We will be happy to schedule a phone or online conference or meeting with our research team.

PEPPERPRINT either provides PEPPERCHIP® Peptide Microarrays for in-house use in your own lab or microarray-based PEPPERMAP® Analysis Services at PEPPERPRINT with scientific reporting.

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