

A Disruptive New Technology for Epitope Mapping!

Only PEPPERPRINT's unique peptide microarray platform enables you to

- ✓ identify and map epitopes from antibodies and sera with unrivalled epitope resolution from single to hundreds of antigens at once
- ✓ 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
- ✓ cover protein conformations and posttranslational modifications



Here are some examples of PEPPERPRINT's epitope mapping microarray applications:

- Linear and conformational epitope mappings for therapeutic antibodies in numerous development projects of various top 10 pharma companies
- Antibody cross-reactivity analyses for biopharmaceutical discovery projects
- Validation of diagnostic antibodies for an international diagnostics company
- In-depth specificity analysis of various anti-HLA-E research antibodies

What our customers say:

"Besides the fact that the data is useful to us, it remains as a fact that the quality of the testing is outstanding. The epitope is mapped."

Patrizio Giacomini, Ph.D., (Assistant Professor) Regina Elena National Cancer Institute, Rome

"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, Ph.D., (Fellow) Orbivirus Immunology, The Pirbright Institute, Woking

"Congratulations to the whole PEPPERPRINT team for the final report that is an example of clarity and good knowledge."

Antonio Toniolo, M.D., (Professor of Medical Microbiology) FAMH, University of Insubria

"The results are very clear and perfectly documented. The realization of the whole project was very professional. The data highly strengthen the development of our ELISA."

Matthias Herkert, Ph.D., (Director R&D) DRG Instruments, Marburg

Our **disruptive PEPperCHIP® Peptide Microarray** technology offers a variety of solutions for epitope identification and analysis:

PEPperMAP® Linear Epitope Mapping

- peptide microarrays with single or multiple antigens translated into overlapping linear peptides
- high resolution epitope mapping with maximum peptide-peptide overlap for full epitope coverage
- minimal sample consumption with industry leading signal-to-noise ratios
- in-depth scientific reporting instead of machine-generated raw data reports
- ▶ **rapid and cost-efficient identification of linear epitopes with max. epitope resolution**

PEPperMAP® Conformational Epitope Mapping

- peptide microarray with single or multiple antigens translated into overlapping peptides
- cyclic constrained peptides with three different peptide lengths and max. peptide-peptide overlap
- three different loop sizes to cover various protein conformations
- in-depth scientific reporting instead of machine-generated raw data reports
- ▶ **fast and cost-effective identification of conformational epitopes with max. epitope resolution**

PEPperMAP® Epitope Substitution Scans

- ▶ peptide microarray based on a known epitope
- ▶ epitope variants with an exchange of all amino acid positions with all 20 main amino acids
- ▶ unambiguous identification of essential, conserved and variable amino acid positions based on the antibody binding profile
- ▶ **fingerprint analysis of antibody epitopes including a specificity evaluation**

PEPperMAP® Antigen & Epitope Discovery

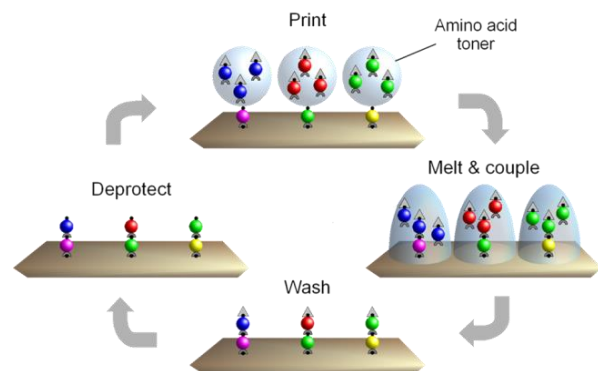
- PEPperCHIP® Discovery Microarrays with ~30,000 different custom or standard peptides
- high-throughput screening for antibody mimotopes or cross-reactive epitopes in a single assay
- bioinformatics analysis of top peptides for epitope prediction combined with high resolution PEPperMAP® Epitope Substitution Scans
- ▶ **identification of unknown epitopes and antigens including a specificity evaluation**

PEPperMAP® Cross-Reactivity Analysis of Antibodies

- PEPperCHIP® Human Epitome Microarray with 29,127 epitopes of the Immune Epitope Database
- screening for tens of thousands of possibly cross-reactive antibody epitopes in a single assay
- bioinformatics analysis of top epitope hits for antibody cross-reactivity profile
- ▶ **large scale analysis of antibody cross-reactivity including a specificity evaluation**

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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