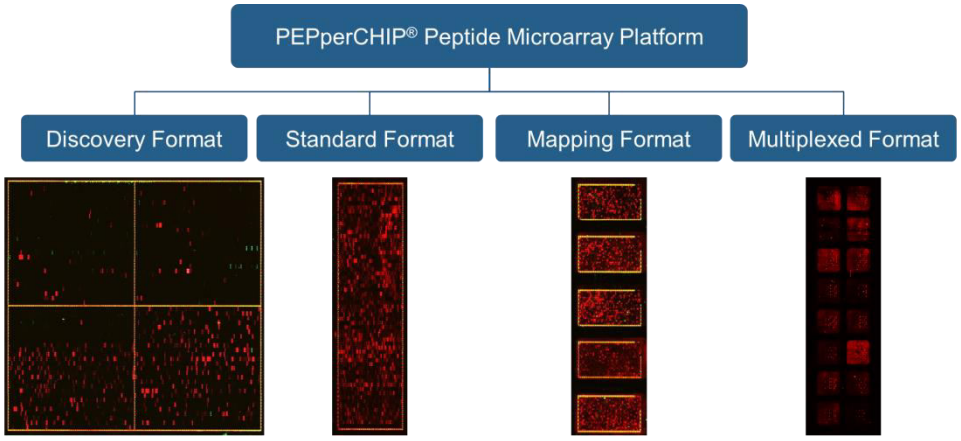
PEPperCHIP® Custom Peptide Microarrays

PEPperCHIP® Custom Peptide Microarrays are fully tailored to your scientific needs from single antigens translated into overlapping peptides to large peptide collections.



	Discovery Format	Standard Format	Mapping Format	Multiplexed Format
Peptides in duplicate:	35,500	5,412	2,376, 1,320, 924 or 726	120
Arrays per chip:	1	1	2,3,4, or 5	16
Format:	Large-scale format	Standard slide format	Standard slide format	Standard slide format
Main application:	Biomarker discovery	Multi-protein epitope mapping	Single-protein epitope mapping	Hit validation

Benefits:

- Fully tailored peptide array layouts
- Highest microarray spot densities for large peptide numbers
- Multiple array copies per chip for one-by-one assays
- No expensive peptide pre-synthesis required
- Outstanding signal-to-noise ratios
- Straightforward chip handling and data analysis

Applications:

- Antigen and Epitope Discovery
- Epitope Mapping (linear and conformational)
- Epitope Substitution Scans
- Immune Monitoring for Vaccine Development
- Serum Biomarker Discovery
- Kinase Substrate Optimization
- Peptide Target Binder Development

Features:

Peptide synthesis:	On-chip, using Fmoc chemistry and routine double coupling steps, linear and cyclic peptides
Microarray format:	Discovery or standard slide formats
Number of peptides:	From ~120 to 35,500 peptides printed in duplicate
Number of arrays per chip:	Up to 16 array copies per chip depending on the number of peptides per array
Array content:	Custom protein-derived overlapping peptides, peptide collections, substitution scans etc.
Available amino acids:	L- and D- amino acids, citrulline as well as other amino acids available upon request
Peptide length:	Routine synthesis of 15 aa peptides, shorter and longer peptides available upon request
Control peptides:	HA (YPYDVPDYAG) and Flag (DYKDDDDKAS) tags, other control peptides on request
Analysis:	Standard immunoassay protocols for in-house assays or PEPperMAP® analysis services

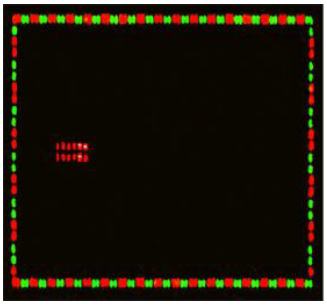
For more information, please visit our website www.pepperprint.com or contact us by phone or email.

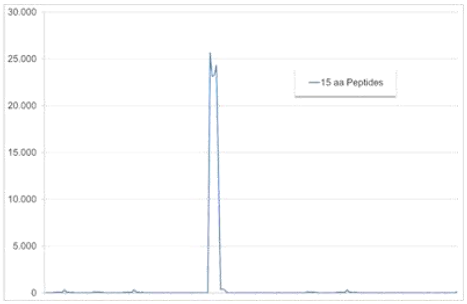
Epitope Mapping

PEPperCHIP® Peptide Microarrays enable high resolution epitope mapping of antibodies and sera. The antigen is, hereby, translated into overlapping peptides with maximum peptide overlap for high resolution epitope data. Depending on the intended project, even multiple antigens can be addressed in a single assay.

Features:

- Array content: Single to multiple antigens translated into 15 aa peptides in peptide duplicate with 14 aa peptide overlap (peptide length, overlap and number of replicates are adjustable)
- Example: An antigen with 400 amino acids is translated into 400 overlapping peptides printed in duplicate
- Controls: HA and Flag control peptides are routinely incorporated as on-chip QC references
- Requirements: Antigen sequence(s) in the FASTA format, 10-20 µg purified antibody or 10-20 µl serum
- Analysis: By customer or fully covered via PEPperMAP® analysis services





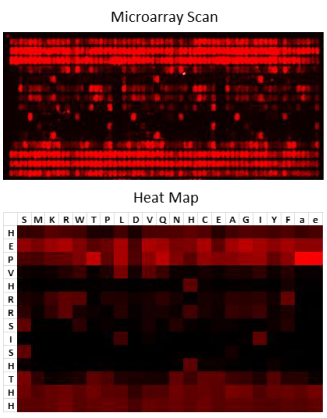
Epitope Mapping of a monoclonal antibody against an antigen translated into 15 aa peptides with 14 aa peptide overlap. The microarray scan (left) as well as the intensity plot (right) show a stretch of adjacent peptides with a consensus motif that represents the epitope of the antibody. Stained HA (red) and Flag (green) control peptides frame the antigen-derived peptides.

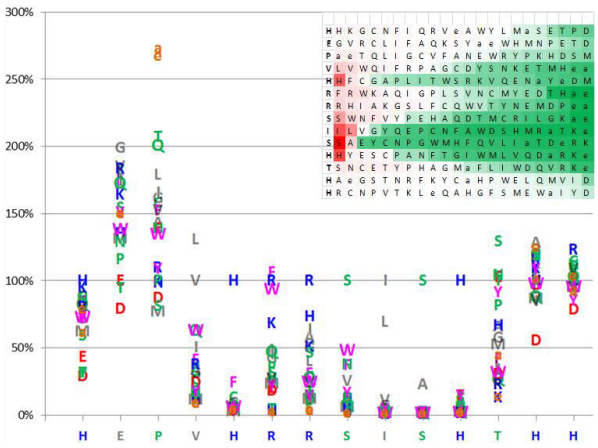
Epitope Substitution Scan

Epitope substitution scans enable the unambiguous determination of conserved and variable amino acid positions of a wild type epitope. Furthermore, the actual motif length and new epitope variants can be identified. Beside L-amino acids, selected non-natural amino acids can be included in an epitope substitution scan.

Features:

- Array content: Stepwise exchange of all wild type amino acid positions with the 20 main L-amino acids
- Amino acid specifications: Non-natural amino acids such as D-amino acids, citrulline or ornithine can be included
- Example: A 15 aa peptide is translated into 15 x 20 L-amino acids = 300 peptides in duplicate or triplicate
- Controls: HA and Flag control peptides are routinely incorporated as on-chip QC reference
- Requirements: Wild type epitope sequence(s), 10-20 µg purified antibody or 10-20 µl serum
- Analysis: By customer or fully covered via PEPperMAP® analysis services





Epitope Substitution Scan of a 14 aa peptide printed in triplicate. The microarray scan shows a typical exchange pattern that is translated into a heat map. The chart displays the change in the fluorescent signal intensity upon amino acid exchange. The signal intensity of the wild type epitope was set to 100%. The highly conserved core motif VHxxSISH plays a major role in antibody binding.