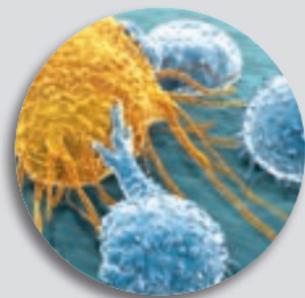


# Peptide Innovations in Immunotherapy

- ❖ Epitope Discovery
- ❖ Cell Therapy
- ❖ Immune Monitoring

**jpt**

Innovative Peptide Solutions



## >About Immunotherapy

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Immunological cell therapy approaches like adoptive T cell therapy, CAR or dendritic cell therapy use peptides to define and produce antigen-specific immune cells that are injected (transplanted) into the patient to treat infections or cancer.

### Epitope Discovery

Epitopes and neo-epitopes can be used as markers for diagnosis, immune monitoring and as targets for immunotherapy. We provide systematic, deep (proteome spanning) and epitope-resolved discovery tools covering sequence diversity (splice variants, mutations etc.) and post-translational modifications.

### Cell Therapy

Our high quality peptides are proven effective for clinical applications such as *ex vivo* stimulation of donor PBMCs to generate antigen-specific T cells, providing both helper and cytotoxic T cells for therapeutic interventions, e.g. adoptive transfer in humans.

### Immune Monitoring

JPT's peptide technologies enable detailed monitoring of individual epitopes, epitope patterns and epitope spreading by functional T cell assays such as ELISPOT, flow cytometry and multimer analysis. Differential analysis of samples helps to correlate immune response with clinical data at high resolution.

## **PepMix™ Peptide Pools**

Overlapping peptide pools representing entire protein sequences are used to detect and monitor cellular immune responses and to identify immune relevant antigens. Custom designed matrix pools enable antigen spanning T cell epitope or neo-epitope discovery and qualification at a minimum number of assays and saving precious patient samples.

## **PepTrack™ Peptide Libraries**

High quality customized peptide libraries with flexible scales and specifications optimized for the use in T cell assays such as ELISPOT and intracellular cytokine staining.

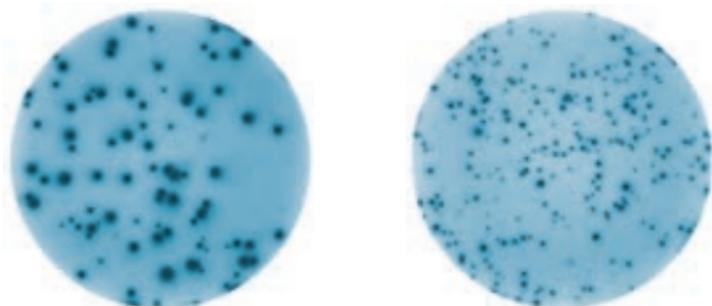
## **MHC Multimers**

MHC Multimers are used for detection, enumeration and isolation of antigen-specific T cells in fluid cell samples (PBMC, blood) by flow cytometry.

## **GxP Peptides & Pools**

GxP Peptides & Pools are produced in a stringent production environment beyond ISO 9001:2015 regulations, for cellular therapy including adoptive T cell transfer and dendritic cell pulsing. We offer optional chemical and microbiological analyses to meet your specific requirements.

[Visit us online at www.jpt.com](http://www.jpt.com)



*Reliable stimulation of antigen-specific T cells with PepMix™ or PepTrack™ in ELISPOT and other T cell assays.*

## PepStar™ Peptide Microarrays

Profile patient samples for circulating antibodies using JPT's peptide microarray platform to detect and monitor humoral immune responses. PepStar™ Peptide Microarrays can display overlapping peptide scans through antigens, neo-epitopes, post-translationally modified epitopes and more. We also offer a comprehensive assay and analysis service with your samples!

## Peptide ELISA

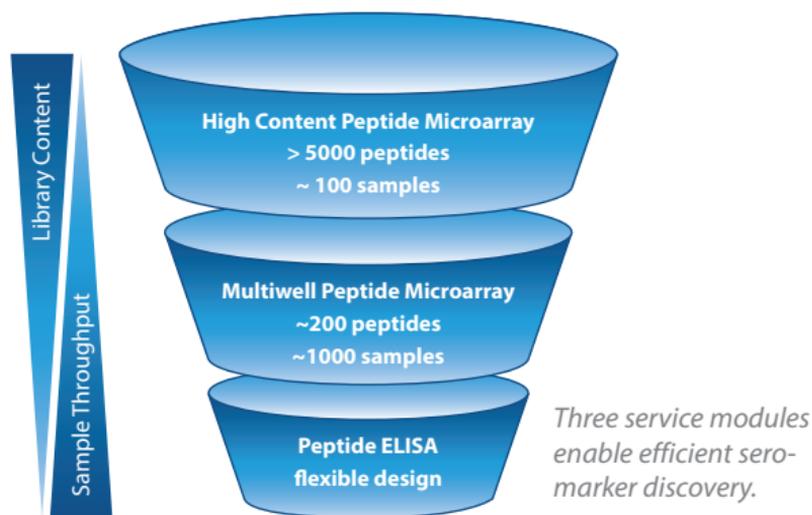
Our tailored peptide ELISA plates enable mapping of epitopes, definition of protein interaction sites or validation of results obtained with JPT's peptide microarrays. We produce the custom peptides, expertly coat ELISA plates for your use or perform the assay service upon your request.

## Modular Seromarker Discovery Service

We offer a modular assay service using our PepStar™ and Peptide ELISA platforms. The workflow analyzes the humoral immune response in three steps:

1. High throughput epitope screening using thousands of peptides
2. Verification of hits with hundreds of samples
3. Validation of results by robust Peptide ELISA

Contact us at [peptide@jpt.com](mailto:peptide@jpt.com)



## Selected References

- ❖❖❖ *"Low Dose Gemcitabine-loaded Lipid Nanocapsules Target Monocytic Myeloid-derived Suppressor Cells and Potentiate Cancer Immunotherapy"*  
Sasso et al., Biomaterials (2016)
- ❖❖❖ *"Specific Cytotoxic T-cell Immune Responses Against Autoantigens Recognized by Chronic Lymphocytic Leukaemia Cells"*  
Zaleska et al., Br J Haematol. (2016) - PMID: 27097566
- ❖❖❖ *"Epstein-Barr Virus Reactivation Does Not Impact Total T-Cell Reconstitution But Is Associated With Decreased Functional T Cells after Stem Cell Transplantation"*  
Pietersma et al., J Clin Cell Immunol (2015)
- ❖❖❖ *"Broadly-specific Cytotoxic T Cells Targeting Multiple HIV Antigens are Expanded From HIV+ Patients: Implications for Immunotherapy"*  
Lam et al., Molecular Therapy (2015) - PMID: 25366030
- ❖❖❖ *"Protective Efficacy of Adenovirus-protein Vaccines Against SIV Challenges in Rhesus Monkeys"*  
Barouch et al., Science (2015) - PMID: 26138104
- ❖❖❖ *"Expanded Cytotoxic T-cell Lymphocytes Target the Latent HIV Reservoir"*  
Sung et al., Journal of Infectious Diseases (2015) - PMID: 25589335

*"My group is developing therapeutic strategies for using in vitro expanded virus-specific T cells (VSTs) for the treatment of viral infections in immunocompromised patients. We recently demonstrated the feasibility and clinical benefit associated with the infusion of rapidly generated single-culture VSTs, manufactured using JPT's GxP PepMix™ Peptide Pools covering 12 immunogenic antigens from five viruses (EBV, AdV, CMV, BK, and HHV6). When administered to 11 allogeneic stem cell transplant recipients, 8 of whom had up to 4 active infections, these VSTs produced an overall 94% response rate."*

*Ann Leen, PhD, Baylor College of Medicine, Houston, TX, USA*

*"Our work focuses on TGF-beta in physiology and cancer as well as the differentiation and expansion of human T cells in vitro for adoptive immunotherapy. For our early phase clinical trials we are in need of T cell EBV specific stimulants having an exceptional quality. JPT's customized PepMix™ Peptide Pools not only proved to deliver excellent performance in our in vitro culture systems but accompanying QC/QA documentation was essential to prepare our application to our regulatory agency."*

*Jean-Sébastien Delisle, PhD, Université de Montréal, Canada*

## About JPT

JPT Peptide Technologies is a DIN ISO 9001:2015 certified and GCLP compliant integrated company providing innovative peptide based products and services focusing on:

- Seromarker discovery & validation
- Immune monitoring and diagnostics
- Vaccine target discovery & monitoring
- Biomarker quantification by targeted proteomics



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