

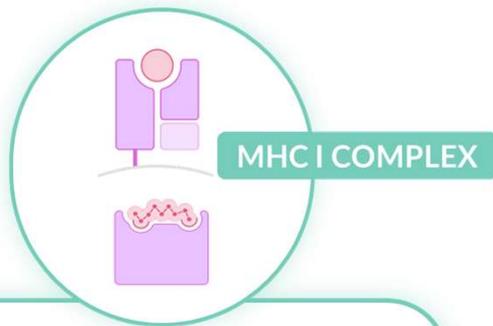
ImmuneSpec

Mass Spectrometry based advanced immunogenic profiling

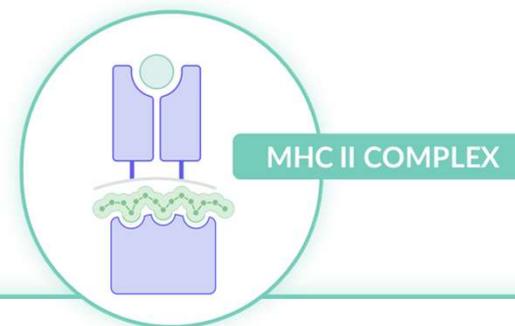
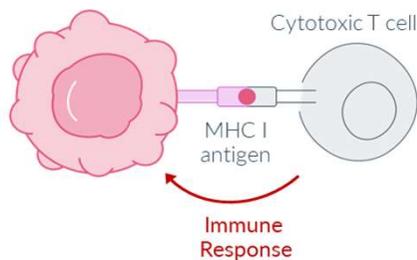
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MHC presented peptides

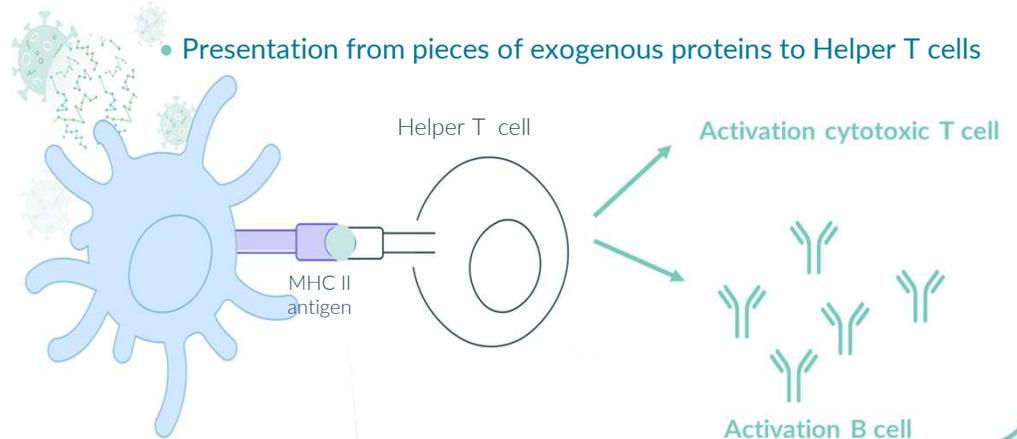
Key to unlocking how to trigger the immune system.



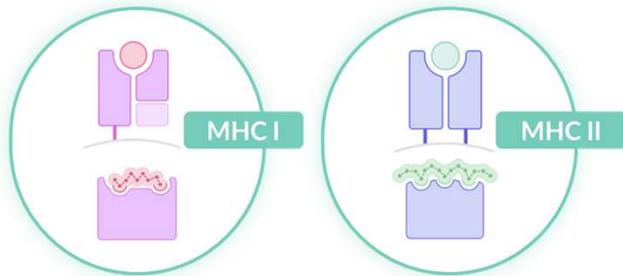
- All cells
- Presentation from pieces of proteins expressed in that cell to Cytotoxic T cells



- Specialized antigen presenting cells (APCs)
- Presentation from pieces of exogenous proteins to Helper T cells



IMMUNESPEC Advanced immunopeptidomics platform



Identification of MHC presented peptides by affinity purification & MS based identification

- Identification of **neoantigens/tumor antigens** for development of **immunotherapy/ precision medicine** 
- Identification of **pathogen** derived antigens for prophylactic **vaccine** development 
- **Immunogenicity risk assessment** of biotherapeutics (MAPPS) 
 - High-sensitivity immunopeptidomics analysis: maximize number of identified peptides
 - Minimal sample input
 - Semi-automated platform with high throughput capacity
 - Larger screening panels

Advanced Immunogenic profiling

Your service partner.

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Immunogenicity testing MAPPS



Deciphering all T cell epitopes of a biotherapeutic for immunogenicity risk assessment. Ranking or selection of safe, high efficacy biotherapeutics during preclinical phases



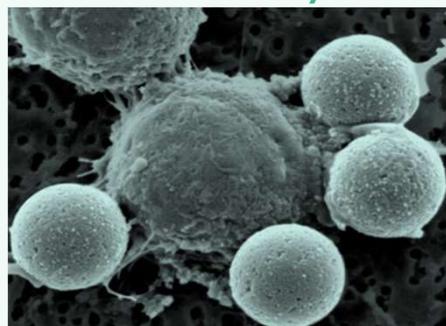
Vaccine development Discovery



Identify truly pathogen-derived presented antigens for enhanced vaccine efficacy. Optimal selection of antigens for generating broad-spectrum immunity



Therapy development Discovery



Find truly presented, actionable antigens from tumors for immunotherapy development, both for development of immunotherapeutics or for personalized medicine



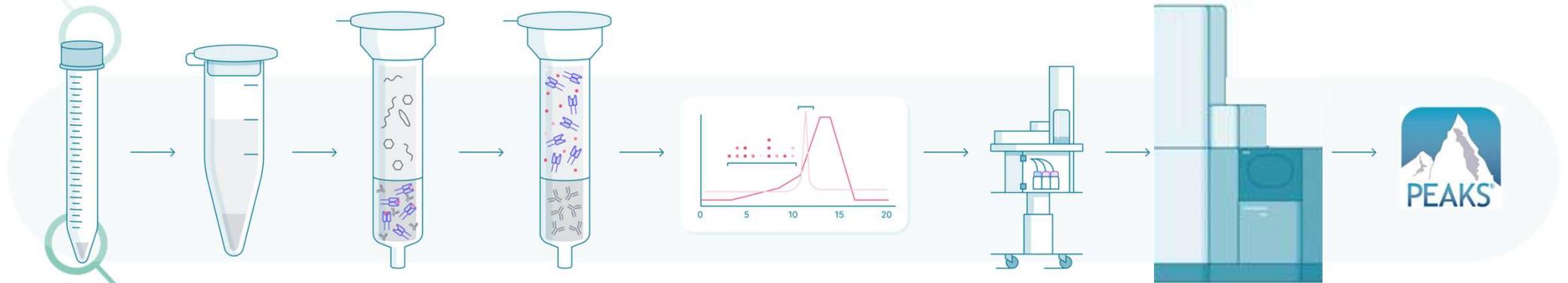
Antigen presentation Validation



Validate presentation of (predicted) antigens (by targeted MS analysis) to confirm efficiency of your therapy or validate your hypothesis

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Advanced immunopeptidomics at IMMUNESPEC



1 High-outcome purification

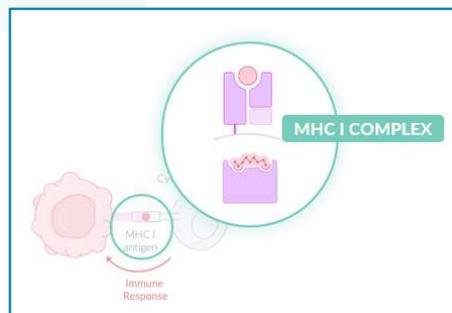
State-of-the-art protocol for optimized solubilization • purification • extraction
Semi-automated workflow • HT

2 Sensitive mass spectrometry

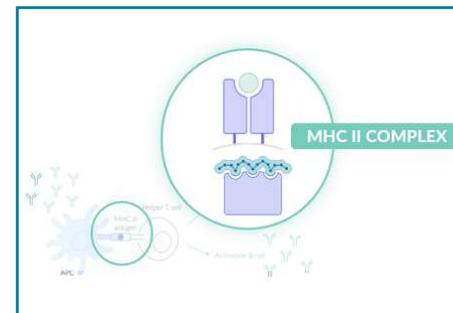
Ultraprecise mass spectrometry analysis using a TimsTOF-SCP

3 Extensive data analysis

Optimized data analysis for complete immunogenic reports.

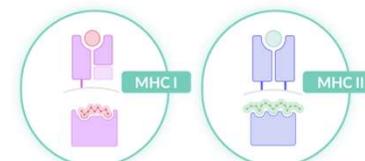


&



Immunogenicity testing

Risk assessment of your biotherapeutic agent.



New modalities Conventional biologicals
New modalities



MAPPS ASSAY:

- Immunopeptidomics analysis of antigen presenting cells loaded *in vitro* with the target biotherapeutic
- Precise identification of all putative immunogenic regions of the target biotherapeutic

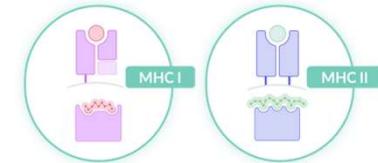
Why ImmuneSpec?

Our high-sensitive advanced immunopeptidomics platform leads to maximized numbers of MHC associated peptides and pinpoints with great accuracy all the potential immunogenic regions of a biotherapeutic enabling a more thorough evaluation of its safety and efficacy. Don't miss a T cell epitope.



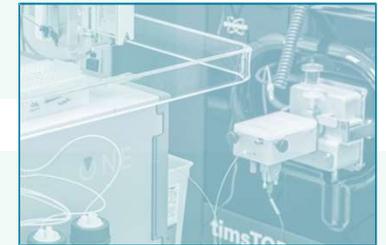
Vaccine development

Identification of pathogen-derived antigens for broad-spectrum vaccines.



VACCINE ASSAY:

- Identification of **multiple pathogen-derived MHC I and MHC II presented peptides** from infected cells or patient samples
- Development of **broad-spectrum vaccines** that contain **multiple high potential immunogenic antigens** (even peptide fragments) from the target pathogen



Why ImmuneSpec?

- ImmuneSpec's **ultra-sensitive immunopeptidomics analysis** leads to identification of maximized numbers of validated MHC presented antigens (even from patient biopsy samples).
- Get the **full overview of truly presented antigens from a pathogen** allowing selection of those with the highest protective potential for enhanced vaccination efficacy

Immunotherapy Development

Finding actionable antigens from tumors for immunotherapy development



ANTIGEN DISCOVERY ASSAY:

- Immunopectidomics analysis of cultured tumor cells/tumor samples results in true identification of validated MHC presented antigens

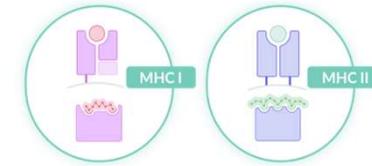


Why ImmuneSpec?

- ImmuneSpec's **ultra-sensitive** immunopectidomics assay leads to identification of **maximized numbers** of validated MHC presented antigens (even from tumor biopsy samples): our analysis has the deepness required to find neoantigens and other actionable tumor antigens.
- Get **the full overview** of truly presented antigens with selection of those with the highest potential for development of immunotherapy and personalized medicine

Antigen presentation validation

Confirm hypothesis of antigen presentation.



ANTIGEN VALIDATION ASSAY:

- Immunopeptidomics analysis of biological samples, including targeted MS analysis, to confirm MHC presentation of predefined immunopeptides with **ultra-high sensitivity**
- Antigen validation is a comprehensive and **insightful approach** to validate MHC presentation of specific peptides



Why ImmuneSpec?

- **Ultra high-sensitivity** analysis of high-quality purified immunopeptide samples leads to **high-confidence interpretation**.
- By antigen presentation validation the **effectiveness of vaccines** can be assessed by identification of truly MHC presented peptides (for example in cells exposed to the vaccine). Knowledge is power.

How do we work?

- **Project Initiation Meeting**

Prior to commencing the project, a project kick-off meeting is scheduled between our project team and the client to ensure alignment regarding the study setup, thus ensuring the delivery of optimal results and addressing the research question effectively.

- **Receipt of Input Samples and Sequence Information**

Following the provision of guidance on sample collection requirements, samples (tissue/cells) may be dispatched to ImmuneSpec. Alternatively, samples may be provided through one of our affiliated partners. Where applicable, project-specific sequence databases are shared.

- **Immunopeptidomics Analysis**

MHC presented peptides are affinity purified and identified by highly sensitive MS analysis using our advanced immunopeptidomics platform technology.

- **Results Delivery**

For all MAPPS and discovery projects, upon completion of data analysis, the comprehensive set of identified peptides is shared with clients. This enables clients to gain a complete overview of the data and access information on identified target peptides promptly.

- **Report delivery**

A detailed report is furnished, encompassing an overview of the experiments, the quantity of identified peptides per sample, quality control data, and graphical representations of the identified peptides for selected target sequences.

- **Project Delivery meeting**

To ensure comprehensive comprehension of the results, a project delivery meeting is arranged, during which the ImmuneSpec team presents an overview of the study and the obtained data. This session provides an opportunity for clients to ask questions, fostering a thorough understanding of the study's findings. Upon request, the written report can be tailored based on the outcomes of this meeting.



Innovation.

It's in our DNA.

Our mission

To offer the highest quality immunopeptidomics analysis as a service. We want to make this technology available for all biotech companies.

Our vision

Optimized biotherapeutics and carefully selected personalized therapies will lead to improved health care and a cure for every cancer patient.

About us. This is IMMUNESPEC

Advanced immunopeptidomics for fast & reliable immunogenic profiling for better and safer biotherapeutics



Thomas Van Doninck

SCIENTIST/PM



Geert Baggerman

CSO & CO-FOUNDER



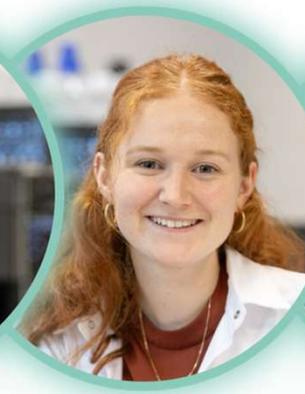
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