ICCVS

Method for screening of extracellular tissue peptides in mammalian tissue samples for health status evaluation, disease diagnostics and neoantigen discovery

TRL 4

About technology

Method for screening of extracellular tissue peptides in mammalian tissue samples for health status evaluation, disease diagnostics and neoantigen discovery

The invention refers to an extracellular peptidomics and major histocompatibility complex (MHC) class I immunopeptidomics sample preparation, qualitative and quantitative method from the solid tumors by antibody-free approach. The extracellular peptidomics and immunopeptidomics from solid tumors based on amino acid sequencing with tandem mass spectrometry. The invention is simple, cost-effective, fast, and comprehensive for solid tumor peptidomics profiling. Moreover, the methods enable the discovery of complex extracellular peptidomics that can be used for health status evaluation, disease diagnostics, and prognosis. The MHC class I immunopeptidomics for neoantigen discovery, vaccine development/the design of immunotherapies. Hence inventions provide valuable insights for understating the basic and applied biological questions. Neoantigen is the peptide presented by cancer-specific MHC class I (or II) molecules. The invention enable to successfully screening of MHC class I immunopeptides/peptides from the tissue. Therefore, all MHC class I peptides can be used for neoantigen discovery amongst MHC class I immunopeptides/peptides that are specific to the cancer cell and able to induce the immune response to kill the cancer cell.

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IP protection

The invention is the subject of a European patent application EP23182549.8 and PCT/EP2023/081235.

Implementation progress

TRL 4 –Technology validated in laboratory conditions

Cooperation opportunities

- Licensing agreement
- Transfer of ownership
- Spin off

International Centre for **Cancer Vaccine Science**