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Immunochemical approaches to monitor and modulate the adaptive immune system

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List of publications

Luimstra, J.J.; Neefjes, J.; Borst, J.G.; Ovaa, H. The future of cancer immunotherapy: opportunities for small molecules.

Manuscript under revision

Luimstra, J.J.; Franken, C.L.M.C.; Garstka, M.A.; Drijfhout, J.W.; Neefjes, J.; Ovaa, H. Production and thermal exchange of conditional peptide-MHC I multimers.

Current Protocols in Immunology 126, e85 (2019)

Luimstra, J.J.*; Garstka, M.A.*; Roex, M.C.J.; Redeker, A.; Janssen, G.M.C.; Van Veelen, P.A.; Arens, R.; Falkenburg, J.H.F.; Neefjes, J.; Ovaa, H. A flexible MHC class I multimer loading system for large-scale detection of antigen-specific T cells.

Journal of Experimental Medicine 215, 1493-1504 (2018)

Rosendahl Huber, S.K.*; **Luimstra, J.J.***; Van Beek, J.; Hoppes, R.; Jacobi, R.H.; Hendriks, M.; Kapteijn, K.; Ouwerkerk, C.; Rodenko, B.; Ovaa, H.; De Jonge, J. Chemical modification of influenza CD8⁺ T-cell epitopes enhances their immunogenicity regardless of immunodominance.

PLoS One 11, e0156462 (2016)

Hoppes, R.*; Oostvogels, R.*; **Luimstra, J.J.**; Wals, K.; Toebes, M.; Bies, L.; Ekkebus, R.; Rijal, P.; Celie, P.H.; Huang, J.H.; Emmelot, M.E.; Spaapen, R.M.; Lokhorst, H.; Schumacher, T.N.; Mutis, T.; Rodenko, B.; Ovaa, H. Altered peptide ligands revisited: vaccine design through chemically modified HLA-A2-restricted T cell epitopes.

Journal of Immunology 193, 4803-4813 (2014)

*These authors contributed equally.

PATENT APPLICATION

Neefjes, J.J.; Ovaa, H.; Garstka, M.A.; **Luimstra, J.J.** Stichting Het Nederlands Kanker Instituut-Antoni van Leeuwenhoek Ziekenhuis, Leids Universitair Medisch Centrum. Methods for producing a MHC multimer.

International patent WO 2019/083370 A1 (2019).

Curriculum vitae

Jolien Luimstra was born on September 18th, 1987, in Amsterdam. She finished her VWO in 2005, at the Oostvaarders College in Almere. Already then, driven by a broad interest in medicine and chemistry, she obtained a double profile in 'Nature & Health' and 'Nature & Technology'. Directly after graduation, she began her Bachelor studies in Chemistry at the University of Amsterdam, which she completed in 2008. During the gap year that followed, she worked at the QC laboratory of Sanquin (the Dutch blood service), sparking her curiosity for immunology. Jolien then went on to continue her studies with the Biomolecular Sciences track in the Chemistry Master's program at the University of Amsterdam. Her first encounter with MHCI (major histocompatibility complex class I) antigen presentation occurred during a three-month research project on MHC class I epitope optimization, supervised by prof. dr. Huib Ovaa in the Division of Cell Biology at the Netherlands Cancer Institute. Jolien's bolstered interest in immunology led her to the Australian Red Cross Blood Service in Brisbane, Australia, where she spent nine months on her main research project, investigating immune cell maintenance and function in MBL-sufficient versus MBL-deficient individuals.

After obtaining her Master's degree in 2012, Jolien returned to the Netherlands Cancer Institute as a PhD candidate. There, she began her work at the interface of chemistry and immunology, on using the MHCI antigen presentation pathway to activate and monitor cytotoxic T cell immunity. In 2016, the Division of Cell Biology moved to the Leiden University Medical Center, to first become the Department of Chemical Immunology, and eventually the Department of Cell and Chemical Biology. In June 2018 Jolien joined the management team of the Institute for Chemical Immunology, led by prof. dr. Jacques Neefjes. In the course of her PhD, she learned about the field of Clinical Chemistry and thus found her next calling. In September 2019 Jolien began her ongoing Clinical Chemistry Training at Meander Medical Centre in Amersfoort, under the supervision of dr. Ayşe Demir.

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