

Short CV: Jolanda de Vries

Jolanda de Vries is Professor at the Department of Tumor Immunology at the Nijmegen Centre for Molecular Life Sciences. She was one of the pioneers to translate dendritic cell biology into potential clinical applications. The first clinical phase I/II studies in which patients were vaccinated with DCs loaded with tumor-specific peptides were initiated in 1997. She also developed a novel immuno-monitoring assay that is highly predictive for extended survival after vaccination with DCs. Her primary scientific interest continues along the line of DC-immunotherapy and in particular the migration and imaging of DC. For example, in-vivo imaging of ex-vivo labeled cells using MRI. New opportunities for other cell-types (e.g. subsets of DCs) are now being developed.

Breakthrough discoveries

- Maturation of in-vitro generated monocyte-derived DC for vaccination of cancer patients is essential for antitumor immunity.
- Tumor specificity of skin infiltrating lymphocytes obtained from DC-induced DTH sites correlates with clinical outcome in melanoma patients vaccinated with DC either loaded with tumor-associated peptides or mRNA encoding tumor-associated antigens.
- Plasmacytoid DC can take up antigen via FcγRII and are able to cross present antigen to CD8 T cells.
- Platinum chemotherapy has a positive effect on DC induced immune responses in vitro by inhibiting STAT6 and thereby inhibiting immune inhibitory molecule expression on DC.
- Vaccination with naturally occurring peptide-loaded blood DC are able to induce antitumor responses in cancer patients and thereby have a beneficial effect on clinical outcome

Key publications:

- Schreibelt G, Klinkenberg LJ, Cruz LJ, Tacke PJ, Tel J, Kreutz M, Adema GJ, Brown GD, Figdor CG, de Vries IJ, The C-type lectin receptor CLEC9A mediates antigen uptake and (cross-)presentation by human blood BDCA3+ myeloid dendritic cells. *Blood*, 2012.
- Lesterhuis WJ, Punt CJ, Hato SV, Eleveld-Trancikova D, Jansen BJ, Nierkens S, Schreibelt G, de Boer A, Van Herpen CM, Kaanders JH, van Krieken JH, Adema GJ, Figdor CG, de Vries IJ. Platinum-based drugs disrupt STAT6-mediated suppression of immune responses against cancer in humans and mice. *J Clin Invest*, 2011.

- Aarntzen EH, Srinivas M, De Wilt JH, Jacobs JF, Lesterhuis WJ, Windhorst AD, Troost EG, Bonenkamp JJ, van Rossum MM, Blokx WA, Mus RD, Boerman OC, Punt CJ, Figdor CG, Oyen WJ, de Vries IJ. Early identification of antigen-specific immune responses in vivo by [18F]-labeled 3'-fluoro-3'-deoxy-thymidine ([18F]FLT) PET imaging. Proc Natl Acad Sci U S A, 2011.

- Schreibelt G, Benitez-Ribas D, Schuurhuis D, Lambeck AJ, van Hout-Kuijter M, Schaft N, Punt CJ, Figdor CG, Adema GJ, de Vries IJ, Commonly used prophylactic vaccines as an alternative for synthetically produced TLR ligands to mature monocyte-derived dendritic cells. Blood, 2010.

- De Vries IJ, Lesterhuis WJ, Barentsz JO, Verdijk P, van Krieken JH, Boerman OC, Oyen WJ, Bonenkamp JJ, Boezeman JB, Adema GJ, Bulte JW, Scheenen TW, Punt CJ, Heerschap A, Figdor CG. Magnetic resonance tracking of dendritic cells in melanoma patients for monitoring of cellular therapy. Nat Biotechnol. 2005.