



## **Dr. Elke Scandella**

**Institute of Immunobiology · Management**

### **Contact**

Dr. Elke Scandella  
Switzerland

[elke.scandella@kssg.ch](mailto:elke.scandella@kssg.ch)

### **Units**

Institute of Immunobiology

## Publications (43)

Cheng H, Scandella E, Hehlhans T, Pérez Shibayama C, Gil Cruz C, Novkovic M, Onder L, Engetschwiler C, Lütge M, Mörbe U, Ludewig B. Intestinal fibroblastic reticular cell niches control innate lymphoid cell homeostasis and function. *Nat Commun* 2022; 13:2027.

Ring S, Spiegl M, Besse A, Bonilla W, Stemeseder F, Schmidt S, Orlinger K, Krebs P, Ludewig B, Wenger R, Hartmann F, Cupovic J, Onder L, Lütge M, Pérez Shibayama C, Gil Cruz C, Scandella E, De Martin A, Mörbe U, Flatz L. Viral vector-mediated reprogramming of the fibroblastic tumor stroma sustains curative melanoma treatment. *Nat Commun* 2021; 12:4734.

Cupovic J, Klenerman P, Engeler D, Krebs P, Scandella E, Oxenius A, Flatz L, Provine N, De Martin A, Cheng H, Lütge M, Colston J, Onder L, Ring S, Ludewig B. Adenovirus vector vaccination reprograms pulmonary fibroblastic niches to support protective inflating memory CD8 T cells. *Nat Immunol* 2021; 22:1042-1051.

Cheng H, Hehlhans T, Rüllicke T, Pfeffer K, Sorg U, Tersteegen A, Miyazaki J, Robinson M, Scandella E, Pikor N, Lütge M, Sonesson C, Novkovic M, Onder L, Ludewig B. Origin and differentiation trajectories of fibroblastic reticular cells in the splenic white pulp. *Nat Commun* 2019; 10:1739.

Pérez Shibayama C, Gommerman J, Scandella E, Robinson M, Sonesson C, Mack M, Turley S, Buechler M, López-Macías C, Li C, Novkovic M, Mörbe U, Printz A, Onder L, Cheng H, Gil Cruz C, Ludewig B. Fibroblastic reticular cells initiate immune responses in visceral adipose tissues and secure peritoneal immunity. *Sci Immunol* 2018; 3

Emgård J, Svensson M, Scandella E, Hepworth M, Huber S, Ludewig B, Peduto L, Villablanca E, Veiga-Fernandes H, Pereira J, Flavell R, Kvedaraitė E, Melo-Gonzalez F, Kammoun H, García-Cassani B, Chesné J, Parigi S, Jacob J, Cheng H, Evren E, Das S, Czarnewski P, Sleiers N, Willinger T. Oxysterol Sensing through the Receptor GPR183 Promotes the Lymphoid-Tissue-Inducing Function of Innate Lymphoid Cells and Colonic Inflammation. *Immunity* 2018; 48:120-132.e8.

Onder L, Scandella E, Sawa S, Mueller C, Gommerman J, Rüllicke T, Waisman A, Becher B, Pfeffer K, Hehlhans T, Cheng H, Novkovic M, Pikor N, Mörbe U, Ludewig B. Lymphatic Endothelial Cells Control Initiation of Lymph Node Organogenesis. *Immunity* 2017; 47:80-92.e4.

Gil Cruz C, Scandella E, Ikuta K, Cui G, Abe S, McCoy K, Geuking M, Lang P, Novkovic M, Cheng H, Cupovic J, Chai Q, Onder L, Pérez Shibayama C, Ludewig B. Fibroblastic reticular cells regulate intestinal inflammation via IL-15-mediated control of group 1 ILCs. *Nat Immunol* 2016; 17:1388-1396.

Novkovic M, Turley S, Bocharov G, Stein J, Scandella E, Cremasco V, Bornze D, Abe J, Cupovic J, Onder L, Ludewig B. Topological Small-World Organization of the Fibroblastic Reticular Cell Network Determines Lymph Node Functionality. *PLoS Biol* 2016; 14:e1002515.

Dubey L, Lebon L, Mosconi I, Yang C, Scandella E, Ludewig B, Luther S, Harris N. Lymphotoxin-Dependent B Cell-FRC Crosstalk Promotes De Novo Follicle Formation and Antibody Production following Intestinal Helminth Infection. *Cell Rep* 2016; 15:1527-41.

Takeda A, Scandella E, Ludewig B, Ishii S, Aoki J, Suematsu M, Ishii M, Takeda K, Jalkanen S, Miyasaka M, Kikuta J, Hayasaka H, Kobayashi D, Aoi K, Sasaki N, Sugiura Y, Igarashi H, Tohya K, Inoue A, Hata E, Akahoshi N, Umemoto E. Fibroblastic reticular cell-derived lysophosphatidic acid regulates confined intranodal T-cell motility. *Elife* 2016; 5

Onder L, Waisman A, Becher B, Ledermann B, Mair F, Maier R, Bornze D, Novkovic M, Caviezel-Firner S, Cheng H, Chai Q, Scandella E, Nindl V, Ludewig B. Alternative NF- $\kappa$ B signaling regulates mTEC differentiation from podoplanin-expressing presursors in the cortico-medullary junction. *Eur J Immunol* 2015

Pérez Shibayama C, López-Macías C, Isibasi A, Waisman A, Regen T, Scandella E, Onder L, Chai Q, Hisaki E, Cervantes-Barragan L, Pastelin-Palacios R, Gil Cruz C, Ludewig B. IFN- $\gamma$ -producing CD4<sup>+</sup> T cells promote generation of protective germinal center-derived IgM<sup>+</sup> B cell memory against *Salmonella Typhi*. *J Immunol* 2014; 192:5192-200.

Caviezel-Firner S, Engeler D, Bolinger B, Onder L, Scandella E, Yu M, Kroczeck R, Ludewig B. Systemic minor histocompatibility antigen expression in blood endothelial cells prevents T cell-mediated vascular immunopathology. *Eur J Immunol* 2013; 43:3233-43.

Chai Q, Hehlgans T, Stein J, Rüllicke T, Thiel V, Luther S, Sparwasser T, Danuser R, Cupovic J, Pérez Shibayama C, Gil Cruz C, Scandella E, Onder L, Ludewig B. Maturation of lymph node fibroblastic reticular cells from myofibroblastic precursors is critical for antiviral immunity. *Immunity* 2013; 38:1013-24.

Coelho F, Figge M, Sharpe J, Ludewig B, Sailer A, Junt T, Zerwes H, Pieczyk M, Scandella E, Danuser R, Mayer J, Swoger J, Hons M, Soriano S, Natale D, Stein J. Naive B-cell trafficking is shaped by local chemokine availability and LFA-1-independent stromal interactions. *Blood* 2013; 121:4101-9.

Onder L, Danuser R, Scandella E, Firner S, Chai Q, Hehlgans T, Stein J, Ludewig B. Endothelial cell-specific lymphotoxin- $\beta$  receptor signaling is critical for lymph node and high endothelial venule formation. *J Exp Med* 2013; 210:465-73.

Onder L, Coles M, Cupedo T, Westermann J, Kaye P, Richie E, Halin C, Hoorweg K, Iolyeva M, Chai Q, Scandella E, Narang P, Ludewig B. IL-7-producing stromal cells are critical for lymph node remodeling. *Blood* 2012; 120:4675-83.

Nindl V, Rüllicke T, Rudin M, Kopf M, Di Padova F, Scandella E, Thiel V, Züst R, De Giuli R, Ratering D, Maier R, Ludewig B. Cooperation of Th1 and Th17 cells determines transition from autoimmune myocarditis to dilated cardiomyopathy. *Eur J Immunol* 2012; 42:2311-21.

Weber S, Hilbi H, Ludewig B, Rösli C, Scandella E, Tchang V, Spörri R, Küntzel A, Joller N, Oxenius A. Identification of protective B cell antigens of *Legionella pneumophila*. *J Immunol* 2012; 189:841-9.

Engeler D, Scandella E, Ludewig B, Schmid H. Ciprofloxacin and epirubicin synergistically induce apoptosis in human urothelial cancer cell lines. *Urol Int* 2012; 88:343-9.

Onder L, Scandella E, Chai Q, Firner S, Mayer C, Sparwasser T, Thiel V, Rüllicke T, Ludewig B. A novel bacterial artificial chromosome-transgenic podoplanin-cre mouse targets lymphoid organ stromal cells in vivo. *Front Immunol* 2011; 2:50.

Kumar V, Scandella E, Danuser R, Onder L, Nitschké M, Fukui Y, Halin C, Ludewig B, Stein J. Global lymphoid tissue remodeling during a viral infection is orchestrated by a B cell-lymphotoxin-dependent pathway. *Blood* 2010; 115:4725-33.

Junt T, Scandella E, Ludewig B. Form follows function: lymphoid tissue microarchitecture in antimicrobial immune defence. *Nature reviews. Immunology* 2008; 8:764-75.

Kang T, Oh G, Scandella E, Bolinger B, Ludewig B, Kovalenko A, Wallach D. Mutation of a self-processing site in caspase-8 compromises its apoptotic but not its nonapoptotic functions in bacterial artificial chromosome-transgenic mice. *Journal of immunology* (Baltimore, Md. : 1950) 2008; 181:2522-32.

Scandella E, Junt T, Luther S, Finke D, Littman D, Favre S, Miller S, Lattmann E, Bolinger B, Ludewig B. Restoration of lymphoid organ integrity through the interaction of lymphoid tissue-inducer cells with stroma of the T cell zone. *Nature immunology* 2008; 9:667-75.

Bolinger B, Clavien P, Restifo N, Palmer D, Miller S, Scandella E, Engeler D, Tian Y, Krebs P, Ludewig B. Immunologic ignorance of vascular endothelial cells expressing minor histocompatibility antigen. *Blood* 2008; 111:4588-95.

Krebs P, Scandella E, Bolinger B, Engeler D, Miller S, Ludewig B. Chronic immune reactivity against persisting microbial antigen in the vasculature exacerbates atherosclerotic lesion formation. *Arteriosclerosis, thrombosis, and vascular biology* 2007; 27:2206-13.

Scandella E, Fink K, Junt T, Senn B, Lattmann E, Förster R, Hengartner H, Ludewig B. Dendritic cell-independent B cell activation during acute virus infection: a role for early CCR7-driven B-T helper cell collaboration. *Journal of immunology* (Baltimore, Md. : 1950) 2007; 178:1468-76.

Sahin U, Wölfel T, Scandella E, Dumrese C, Britten C, Lennerz V, Meyer R, Graf C, Türeci O, Ludewig B. Rapid molecular dissection of viral and bacterial immunomes. *European journal of immunology* 2006; 36:1049-57.

Scandella E, Günther S, Jiang H, Ludewig B, Siddell S, Shen X, Shen J, Luo X, Gui C, Chen L, Drosten C, Hertzog T, Eriksson K, Thiel V (2006). Identification and evaluation of coronavirus replicase inhibitors using a replicon cell line.

Maier R, Miller S, Kurrer M, Krebs P, De Giuli R, Kremer M, Scandella E, Ludewig B. Quantification and characterization of myosin peptide-specific CD4+ T cells in autoimmune myocarditis. *J Immunol Methods* 2005; 304:117-25.

Waeckerle-Men Y, Allmen E, von Moos R, Classon B, Scandella E, Schmid H, Ludewig B, Groettrup M, Gillessen Sommer S. Dendritic cells generated from patients with androgen-independent prostate cancer are not impaired in migration and T-cell stimulation. *The Prostate* 2005; 64:323-31.

Chen L, Luo H, Yang Y, Yang Y, Zou J, Thiel V, Chen K, Shen J, Shen X, Chen J, Ludewig B, Gui C, Luo X, Yang Q, Günther S, Scandella E, Drosten C, Bai D, He X, Jiang H. Cinanserin is an inhibitor of the 3C-like proteinase of severe acute respiratory syndrome coronavirus and strongly reduces virus replication in vitro. *Journal of virology* 2005; 79:7095-103.

Krebs P, Scandella E, Odermatt B, Ludewig B. Rapid functional exhaustion and deletion of CTL following immunization with recombinant adenovirus. *Journal of immunology* (Baltimore, Md. : 1950) 2005; 174:4559-66.

Junt T, Scandella E, Förster R, Krebs P, Krautwald S, Lipp M, Hengartner H, Ludewig B. Impact of CCR7 on priming and distribution of antiviral effector and memory CTL. *Journal of immunology* (Baltimore, Md. : 1950) 2004; 173:6684-93.

Prikler L, Scandella E, Men Y, Engeler D, Diener P, Gillessen Sommer S, Ludewig B, Schmid H. [Adaptive immunotherapy of the advanced prostate cancer - cancer testis antigen (CTA) as possible target antigens]. *Aktuelle Urologie* 2004; 35:326-30.

Ludewig B, Krebs P, Scandella E. Immunopathogenesis of atherosclerosis. *Journal of leukocyte biology* 2004; 76:300-6.

Hertzog T, Scandella E, Schelle B, Ziebuhr J, Siddell S, Ludewig B, Thiel V. Rapid identification of coronavirus replicase inhibitors using a selectable replicon RNA. *The Journal of general virology* 2004; 85:1717-25.

Waeckerle-Men Y, Scandella E, Uetz-von Allmen E, Ludewig B, Gillessen Sommer S, Merkle H, Gander B, Groettrup M. Phenotype and functional analysis of human monocyte-derived dendritic cells loaded with biodegradable poly(lactide-co-glycolide) microspheres for immunotherapy. *Journal of immunological methods* 2004; 287:109-24.

Scandella E, Men Y, Legler D, Gillessen Sommer S, Prikler L, Ludewig B, Groettrup M. CCL19/CCL21-triggered signal transduction and migration of dendritic cells requires prostaglandin E2. *Blood* 2004; 103:1595-601.

Prikler L, Scandella E, Men Y, Engeler D, Diener P, Gillessen Sommer S, Ludewig B, Schmid H. Adaptive Immuntherapie des fortgeschrittenen Prostatakarzinoms - Cancer Testis Antigene (CTA) als mögliche Zielantigene. *Aktuel Urol* 2004; 35:326-330.

Scandella E, Men Y, Gillessen Sommer S, Förster R, Groettrup M. Prostaglandin E2 is a key factor for CCR7 surface expression and migration of monocyte-derived dendritic cells. *Blood* 2002; 100:1354-61.

## Projects (2)

**Impact of intestinal stromal cells on the function of innate lymphoid cells in an animal model for inflammatory bowel disease**

*Fundamental Research - Jan 1, 2015 - Dec 31, 2015*

*Automatically Closed*

**Examining the function of lymphoid organ structure during antiviral immune responses using microscopic and mesoscopic imaging**

*Fundamental Research - Jun 1, 2009 - Jul 31, 2012*

*Completed*

---

Kantonsspital St.Gallen

Rorschacher Strasse 95

CH-9007 St.Gallen

T: +41 71 494 11 11

[support.forschung@kssg.ch](mailto:support.forschung@kssg.ch)