

Prof. Lukas Flatz



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research profile

academic status	Oberarzt mbF/Oberärztin mbF
department	Interdisziplinäre Medizinische Dienste
faculty	Institut für Immunbiologie
position	Principal Investigator and Senior Consultant
fields of research	melanoma, immunotherapy, cancer vaccine, basal cell carcinoma, recombinant viral vectors,
affiliations	University of Zurich (Medical Faculty)
awards	Pfizer Prize 2011, Leenaards Junior Clinical Scientist 2012, Medic Prize 2013, Swiss Skin Cancer Award 2014
patents	1. Replication-defective Arenavirus Vectors. International Publication Date: 9 July 2009 International Publication Number: WO 2009/083210 A1 2. Prime-boost vaccine strategies incorporating lymphocytic choriomeningitis virus vaccines to protect against lentiviral infection. U.S. Patent Application No. 61/489,205, filed on May 23, 2011
additional information	Co-founder of ArenaVax and Hookipa Biotech

publications

title

**journal
paper/
review**

Fässler M, Diem S, Mangana J, Hasan Ali O, Berner F, Bomze D, Ring S, Niederer R, Gil Cruz C, Perez Shibayama C, Krolik M, Siano M, Joerger M, Recher M, Risch L, Güsewell S, Risch M, Speiser D E, Ludewig B, Levesque M P, Dummer R, Flatz L. Antibodies as biomarker candidates for response and survival to checkpoint inhibitors in melanoma patients. *J Immunother Cancer* 2019; 7:50.

Gil Cruz C, Perez Shibayama C, De Martin A, Ronchi F, van der Borght K, Niederer R, Onder L, Lütge M, Novkovic M, Nindl V, Ramos G, Arnoldini M, Slack E M C, Boivin-Jahns V, Jahns R, Wyss M, Mooser C, Lambrecht B N, Maeder M T, Rickli H, Flatz L, Eriksson U, Geuking M B, McCoy K D, Ludewig B. Microbiota-derived peptide mimics drive lethal inflammatory cardiomyopathy. *Science* 2019; 366:881-886.

Berner F, Bomze D, Diem S, Ali O H, Fässler M, Ring S, Niederer R, Ackermann C J, Baumgaertner P, Pikor N, Gil Cruz C, van de Veen W, Akdis M, Nikolaev S, Läubli H, Zippelius A, Hartmann F, Cheng H W, Hönger G, Recher M, Goldman J, Cozzio A, Früh M, Neefjes J, Driessen C, Ludewig B, Hegazy A N, Jochum W, Speiser D E, Flatz L. Association of Checkpoint Inhibitor-Induced Toxic Effects With Shared Cancer and Tissue Antigens in Non-Small Cell Lung Cancer. *JAMA Oncol* 2019;.

Isak V, Beerli T, Cozzio A, Flatz L. A Rare Case of Localized Argyria on the Face. *Case Rep Dermatol* 2019; 11:23-27.

Berner F, Bomze D, Flatz L. Immune-Related Adverse Events of Immune Checkpoint Inhibitors-From a Clinical to Pathophysiological View-In Reply. *JAMA Oncol* 2019;.

publications

title

journal paper/ review

Trefny M P, Rothschild S I, Uhlenbrock F, Rieder D, Kasenda B, Stanczak M A, Berner F, Kashyap A S, Kaiser M, Herzig P, Poechtrager S, Thommen D S, Geier F, Savic S, Jermann P, Alborelli I, Schaub S, Stenner F, Früh M, Trajanoski Z, Flatz L, Mertz K D, Zippelius A, Läubli H. A Variant of a Killer Cell Immunoglobulin-like Receptor Is Associated with Resistance to PD-1 Blockade in Lung Cancer. *Clin Cancer Res* 2019; 25:3026-3034.

Diem S, Fässler M, Bomze D, Ali O H, Berner F, Niederer R, Hillmann D, Mangana J, Levesque M P, Dummer R, Risch L, Recher M, Risch M, Flatz L. Immunoglobulin G and Subclasses as Potential Biomarkers in Metastatic Melanoma Patients Starting Checkpoint Inhibitor Treatment. *J Immunother* 2019; 42:89-93.

Fischer S, Ali O H, Jochum W, Kluckert J T, Flatz L, Siano M. Anti-PD-1 Therapy Leads to Near-Complete Remission in a Patient with Metastatic Basal Cell Carcinoma. *Oncol Res Treat* 2018; 41:391-394.

Diem S, Fässler M, Ali O H, Siano M, Niederer R, Berner F, Roux G A, Ackermann C J, Schmid S, Güsewell S, Früh M, Flatz L. Risk score for non-small cell lung cancer patients starting checkpoint inhibitor treatment. *Cancer Manag Res* 2018; 10:5537-5544.

Schmid S, Diem S, Li Q, Krapf M, Flatz L, Leschka S, Desbiolles L, Klingbiel D, Jochum W, Früh M. Organ-specific response to nivolumab in patients with non-small cell lung cancer (NSCLC). *Cancer Immunol Immunother* 2018;.

Hasan Ali O, Berner F, Bomze D, Fässler M, Diem S, Cozzio A, Joerger M, Früh M, Driessen C, Lenz T L, Flatz L. Human leukocyte antigen variation is associated with adverse events of checkpoint inhibitors. *Eur J Cancer* 2018; 107:8-14.

publications

title

**journal
paper/
review**

Hartwig T, Zwicky P, Schreiner B, Yawalkar N, Cheng P, Navarini A, Dummer R, Flatz L, Conrad C, Schlapbach C, Becher B. Regulatory T Cells Restrain Pathogenic T Helper Cells during Skin Inflammation. *Cell Rep* 2018; 25:3564-3572.e4.

Diem S, Hasan Ali O, Ackermann C J, Bomze D, Koelzer V H, Jochum W, Speiser D E, Mertz K D, Flatz L. Tumor infiltrating lymphocytes in lymph node metastases of stage III melanoma correspond to response and survival in nine patients treated with ipilimumab at the time of stage IV disease. *Cancer Immunol Immunother* 2017; 67:39-45.

Diem S, Schmid S, Krapf M, Flatz L, Born D, Jochum W, Templeton A J, Früh M. Neutrophil-to-Lymphocyte ratio (NLR) and Platelet-to-Lymphocyte ratio (PLR) as prognostic markers in patients with non-small cell lung cancer (NSCLC) treated with nivolumab. *Lung Cancer* 2017; 111:176-181.

Remy M M, Sahin M, Flatz L, Regen T, Xu L, Kreutzfeldt M, Fallet B, Doras C, Rieger T, Bestmann L, Hanisch U K, Kaufmann B A, Merkler D, Pinschewer D D. Interferon- γ -Driven iNOS: A Molecular Pathway to Terminal Shock in Arenavirus Hemorrhagic Fever. *Cell Host Microbe* 2017; 22:354-365.e5.

Kalkavan H, Sharma P, Kasper S, Helfrich I, Pandyra A A, Gassa A, Virchow I, Flatz L, Brandenburg T, Namineni S, Heikenwalder M, Höchst B, Knolle P A, Wollmann G, von Laer D, Drexler I, Rathbun J, Cannon P M, Scheu S, Bauer J, Chauhan J, Häussinger D, Willimsky G, Löhning M, Schadendorf D, Brandau S, Schuler M, Lang P A, Lang K S. Spatiotemporally restricted arenavirus replication induces immune surveillance and type I interferon-dependent tumour regression. *Nat Commun* 2017; 8:14447.

publications

title

journal paper/ review

Bickel A, Koneth I,ENZLER-TSCHUDY A, NEUWEILER J, FLATZ L, FRÜH M. Pembrolizumab-associated minimal change disease in a patient with malignant pleural mesothelioma. BMC Cancer 2016; 16:656.

Hasan Ali O, Diem S, Markert E, Jochum W, Kerl K, French L E, Speiser D E, Früh M, Flatz L. Characterization of nivolumab-associated skin reactions in patients with metastatic non-small cell lung cancer. Oncoimmunology 2016; 5:e1231292.

Diem S, Keller F, Rüesch R, Maillard S A, Speiser D E, Dummer R, Siano M, Urner-Bloch U, Goldinger S M, Flatz L, Diem S. Pembrolizumab-triggered Uveitis: An Additional Surrogate Marker for Responders in Melanoma Immunotherapy?. J Immunother 2016; 39:379-382.

Hasan Ali O, Diem S, Aschwanden J, Markert E, Tasman A J, Müller J, Flatz L. GLUT1-positive recurrent basal cell carcinoma of basosquamous subtype detected by positron emission tomography. JAAD Case Rep 2016; 2:415-417.

Ring S, Flatz L. Generation of Lymphocytic Choriomeningitis Virus Based Vaccine Vectors. Methods Mol Biol 2016; 1404:351-64.

Bhattacharya A, Hegazy A N, Deigendesch N, Kosack L, Cupovic J, Kandasamy R K, Hildebrandt A, Merkler D, Kühl A A, Vilagos B, Schliehe C, Panse I, Khamina K, Baazim H, Arnold I, Flatz L, Xu H C, Lang P A, Aderem A, Takaoka A, Superti-Furga G, Colinge J, Ludewig B, Löhning M, Bergthaler A. Superoxide Dismutase 1 Protects Hepatocytes from Type I Interferon-Driven Oxidative Damage. Immunity 2015; 43:974-86.

Demaria O, De Gassart A, Coso S, Gestermann N, Di Domizio J, Flatz L, Gaide O, Michielin O, Hwu P, Petrova T V, Martinon F, Modlin R L, Speiser D E, Gilliet M. STING activation of tumor endothelial cells initiates spontaneous and therapeutic antitumor immunity. Proc Natl Acad Sci USA 2015; 112:15408-13.

publications

title

journal paper/ review

Sommerstein R, Flatz L, Remy M M, Malinge P, Magistrelli G, Fischer N, Sahin M, Bergthaler A, Igonet S, Ter Meulen J, Rigo D, Meda P, Rabah N, Coutard B, Bowden T A, Lambert P H, Siegrist C A, Pinschewer D D. Arenavirus Glycan Shield Promotes Neutralizing Antibody Evasion and Protracted Infection. *PLoS Pathog* 2015; 11:e1005276.

Johnson S, Bergthaler A, Graw F, Flatz L, Bonilla W V, Siegrist C A, Lambert P H, Regoes R R, Pinschewer D D. Protective efficacy of individual CD8+ T cell specificities in chronic viral infection. *J Immunol* 2015; 194:1755-62.

Sommerstein R, Ramos da Palma J, Olschläger S, Bergthaler A, Barba L, Lee B P L, Pasquato A, Flatz L. Evolution of Recombinant Lymphocytic Choriomeningitis Virus/Lassa Virus In Vivo Highlights the Importance of the GPC Cytosolic Tail in Viral Fitness. *J Virol* 2014; 88:8340-8348.

Speiser D E, Flatz L. Cancer immunotherapy drives implementation science in oncology. *Hum Vaccin Immunother* 2014; 10:3107-10.

Roychoudhuri R, Lefebvre F, Honda M, Pan L, Ji Y, Klebanoff C A, Nichols C N, Fourati S, Hegazy A N, Goulet J P, Gattinoni L, Nabel G J, Gilliet M, Cameron M, Restifo N P, Sékaly R P, Flatz L. Transcriptional profiles reveal a stepwise developmental program of memory CD8(+) T cell differentiation. *Vaccine* 2014; 33:914-23.

Clayton H, Flatz L, Vollenweider-Roten S, Schoepfer A, Gilliet M, Conrad C. Anti-TNF therapy in the treatment of psoriasis in a patient with acute-on-chronic pancreatitis. *Dermatology (Basel)* 2013; 227:193-6.

Olschläger S, Flatz L. Vaccination strategies against highly pathogenic arenaviruses: the next steps toward clinical trials. *PLoS Pathog* 2013; 9: e1003212.

publications

title

journal paper/ review

Flatz L, Conrad C. Role of T-cell-mediated inflammation in psoriasis: pathogenesis and targeted therapy. *Psoriasis: Targets & Therapy* 2013;.

Zürcher S, Mooser C, Lüthi A U, Mühlemann K, Barbani M T, Mohacsi P, Garzoni C, Gorgievski-Hrisoho M, Schaller A, Flatz L. Sensitive and rapid detection of ganciclovir resistance by PCR based MALDI-TOF analysis. *J Clin Virol* 2012; 54:359-63.

Flatz L, Cheng C, Wang L, Foulds K E, Ko S Y, Kong W P, Roychoudhuri R, Shi W, Bao S, Todd J P, Asmal M, Shen L, Donaldson M, Schmidt S D, Gall J G D, Pinschewer D D, Letvin N L, Rao S, Mascola J R, Roederer M, Nabel G J. Gene-based vaccination with a mismatched envelope protects against simian immunodeficiency virus infection in nonhuman primates. *J Virol* 2012; 86:7760-70.

Flatz L, Roychoudhuri R, Honda M, Filali-Mouhim A, Goulet J P, Kettaf N, Lin M, Roederer M, Haddad E K, Sékaly R P, Nabel G J. Single-cell gene-expression profiling reveals qualitatively distinct CD8 T cells elicited by different gene-based vaccines. *Proc Natl Acad Sci USA* 2011; 108:5724-9.

Kerber R, Rieger T, Busch C, Flatz L, Pinschewer D D, Kümmerer B M, Günther S. Cross-species analysis of the replication complex of Old World arenaviruses reveals two nucleoprotein sites involved in L protein function. *J Virol* 2011; 85:12518-28.

Bergthaler A, Flatz L, Hegazy A N, Johnson S, Horvath E, Löhning M, Pinschewer D D. Viral replicative capacity is the primary determinant of lymphocytic choriomeningitis virus persistence and immunosuppression. *Proc Natl Acad Sci USA* 2010; 107:21641-6.

publications

title

**journal
paper/
review**

Pinschewer D D, Flatz L, Steinborn R, Horvath E, Fernandez M, Lutz H, Suter M, Bergthaler A. Innate and adaptive immune control of genetically engineered live-attenuated arenavirus vaccine prototypes. *Int Immunol* 2010; 22:749-56.

Hegazy A N, Peine M, Helmstetter C, Panse I, Fröhlich A, Bergthaler A, Flatz L, Pinschewer D D, Radbruch A, Löhning M. Interferons direct Th2 cell reprogramming to generate a stable GATA-3(+)T-bet(+) cell subset with combined Th2 and Th1 cell functions. *Immunity* 2010; 32:116-28.

Flatz L, Rieger T, Merkler D, Bergthaler A, Regen T, Schedensack M, Bestmann L, Verschoor A, Kreutzfeldt M, Brück W, Hanisch U K, Günther S, Pinschewer D D. T cell-dependence of Lassa fever pathogenesis. *PLoS Pathog* 2010; 6:e1000836.

Flatz L, Hegazy A N, Bergthaler A, Verschoor A, Claus C, Fernandez M, Gattinoni L, Johnson S, Kreppel F, Kochanek S, Broek M v d, Radbruch A, Lévy F, Lambert P H, Siegrist C A, Restifo N P, Löhning M, Ochsenbein A F, Nabel G J, Pinschewer D D. Development of replication-defective lymphocytic choriomeningitis virus vectors for the induction of potent CD8+ T cell immunity. *Nat Med* 2010; 16:339-45.

Bergthaler A, Flatz L, Verschoor A, Hegazy A N, Holdener M, Fink K, Eschli B, Merkler D, Sommerstein R, Horvath E, Fernandez M, Fitsche A, Senn B M, Verbeek J S, Odermatt B, Siegrist C A, Pinschewer D D. Impaired antibody response causes persistence of prototypic T cell-contained virus. *PLoS Biol* 2009; 7:e1000080.

publications

title

**journal
paper/
review**

Heikenwalder M, Prinz M, Zeller N, Lang K S, Junt T, Rossi S, Tumanov A, Schmidt H, Priller J, Flatz L, Rüllicke T, Macpherson A J, Holländer G A, Nedospasov S A, Aguzzi A. Overexpression of lymphotoxin in T cells induces fulminant thymic involution. *Am J Pathol* 2008; 172:1555-70.

Navarini A A, Recher M, Lang K S, Georgiev P, Meury S, Bergthaler A, Flatz L, Bille J, Landmann R, Odermatt B, Hengartner H, Zinkernagel R M. Increased susceptibility to bacterial superinfection as a consequence of innate antiviral responses. *Proc Natl Acad Sci USA* 2006; 103:15535-9.

Flatz L, Bergthaler A, de la Torre J C, Pinschewer D D. Recovery of an arenavirus entirely from RNA polymerase I/II-driven cDNA. *Proc Natl Acad Sci USA* 2006; 103:4663-8.

Flatz L, Cottagnoud M, Kühn F, Entenza J, Stucki A, Cottagnoud P. Ceftriaxone acts synergistically with levofloxacin in experimental meningitis and reduces levofloxacin-induced resistance in penicillin-resistant pneumococci. *J Antimicrob Chemother* 2004; 53:305-10.

Cottagnoud P, Pfister M, Acosta F, Cottagnoud M, Flatz L, Kühn F, Müller H P, Stucki A. Daptomycin is highly efficacious against penicillin-resistant and penicillin- and quinolone-resistant pneumococci in experimental meningitis. *Antimicrob Agents Chemother* 2004; 48:3928-33.

Cottagnoud P, Cottagnoud M, Acosta F, Flatz L, Kühn F, Stucki A, Entenza J. Meropenem prevents levofloxacin-induced resistance in penicillin-resistant pneumococci and acts synergistically with levofloxacin in experimental meningitis. *Eur J Clin Microbiol Infect Dis* 2003; 22:656-62.

publications

title

**journal
paper/
review**

Kühn F, Cottagnoud M, Acosta F, Flatz L, Entenza J, Cottagnoud P.
Cefotaxime acts synergistically with levofloxacin in experimental
meningitis due to penicillin-resistant pneumococci and prevents selection
of levofloxacin-resistant mutants in vitro. Antimicrob Agents Chemother
2003; 47:2487-91.

projects

title	status
Immunmonitoring of patients before, during and after immunotherapy to predict anti-tumor response in melanoma and non-small cell lung cancer (IMIT)	ongoing - recruiting phase
Vaccine and immunotherapy induced CD8+ T cell responses against auto-, neo- and foreign antigens	ongoing - follow up