

Curriculum Vitae

Name & Address

Mathias Müller – Full Professor of Veterinary Molecular Genetics and Biotechnology

Current Position: Head of Institute of Animal Breeding and Genetics, Department of Biomedical Sciences, University of Veterinary Medicine Vienna

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Main Research Interests

Since over one decade we are coordinating the Viennese JAK-STAT Consortium which has established itself as one of the leading groups worldwide in the study of signal transmission by the Janus kinases (JAKs) and signal transducers and activators of transcription (STATs). In particular, the generation and analysis of advanced transgenic mouse models has enabled the Consortium to contribute substantially to our understanding of the functions of JAKs and STATs in human disease. The work is of highly interdisciplinary in nature, with contributions from genetics, molecular biology, bioinformatics and human medicine. The results from Vienna and elsewhere have led to the recognition of the JAK-STAT pathway as one of the twelve core pathways in the initiation and progression of cancer and as one of the key pathways in the defence against infections. Our major interest is the JAK-STAT signaling network at the interface of immunity, inflammation and cancer. Currently the consortium is compiling NGS data sets for the generation of an integrated map of STAT1-6 and TYK2 dependencies on the chromatin architecture of immune cells. The focus of our group is on tyrosine kinase 2 (TYK2) and STAT1, the founder members of the JAK and STAT family, respectively.

Scientific Education & Career History

2008 - 2017	Head of Department of Biomedical Sciences at Vetmeduni Vienna
since 2006	Chairman of the Supervisory Board of Biomodels Austria (former Austrian Center of Biomodels and Transgenetics)
2005 - 2007	Head of Department of Agrobiotechnology IFA Tulln at the University of Natural Resources and Applied Life Sciences (BOKU), Vienna
2002 - 2016	Head of Institute of Biotechnology in Animal Production at the IFA Tulln
since 1998	Chair (C4 professorship) 'Veterinary Biotechnology and Molecular Genetics' and Head of Institute of Animal Breeding and Genetics, Vetmeduni Vienna
1996	offered chair (C4 full professorship) for Animal Breeding and Genetics at the Tierärztliche Hochschule Hannover, Germany and offered position Full Professor of Animal Genetics at The Royal Veterinary and Agricultural University KVL, Copenhagen, Denmark
1994	offered position (tenure track) Governor's Lectureship at St Mary's Hospital Medical School (Imperial College of Science, Technology and Medicine in the University of London), London, UK
1994 - 1998	associate professor at the Institute of Animal Breeding and Genetics of the University of Veterinary Medicine Vienna, Austria and deputy head of the Department of Biotechnology in Animal Production at the IFA Tulln, Austria
1991 - 1993	postdoctoral fellowship at the Imperial Cancer Research Fund (now Cancer Research UK), London UK in the Biological Regulatory Mechanisms Laboratory, headed by Ian M. Kerr, PhD, FRS and George R. Stark
1990	postdoctoral fellow at the Department of Molecular Animal Breeding (Prof. Gottfried Brem) and the Institute of Biochemistry (Prof. Ernst-Ludwig Winnacker) at the LMU Munich

- 1986 - 1989 PhD thesis at the Department of Molecular Animal Breeding, LMU Munich and the Institute of Biochemistry, LMU Munich; Ph.D. defense with “first class honors” (summa cum laude).
- 1980-1988 Studies of Veterinary Medicine at the Ludwig Maximilians University Munich

Experience in Scientific Management and Organization & Student Supervision

- Since 1990 Supervision & training of **> 20 PhD students**
- Since 2000 Member of the ‘Senat’ of Vetmeduni Vienna and member of various committees for organisation and (re-)structuring the pre- and postgraduate studies of Veterinary Medicine, BSc and MSc Comparative Biomedicine and Biotechnology at Vetmeduni Vienna
- 2006 - 2008 Scientific Member of the Governing Council of the Roslin Institute Edinburgh UK
- 2006 - 2016 Speaker and Coordinator of the Austrian Science Fund FWF Special Research Program SFB ‘Jak-Stat Signalling: From Basics to Disease’
- 2010 Co-organizer, FEBS Special Meeting on Jak-Stat Signalling: from Basics to Disease, Vienna, Austria
- 2014 Local organizing committee 28th Annual Conference of the European Macrophages and Dendritic Cell Society (EMDS), Vienna, Austria
- since 2015 Co-organizer, International Conference on Cytokine Signaling in Cancer, Aegean Conferences
- 2017 - 2012 Speaker and coordinator of the Austrian Science Fund FWF Special Research Program SFB ‘Monarchies and Hierarchies in Shaping Chromatin Landscapes’

Supervision of Doctoral (PhD) Thesis Students (past five years – 7 since 2005)

Eva Hainzl – PhD Student 2009 – 2014

"Analysis of tyrosine kinase 2 in acute intestinal inflammation"

Mario Biaggio – PhD Student 2011 – 2016

"The role of STAT1 and STAT3 in macrophages during cytomegalovirus infection"

Kerstin Schön – PhD Student 2012 – 2016

"Analysis of microbial communities in dairy processing floor drains"

Natalija Simonovic – PhD Student 2014 – [ongoing](#)

"Fine tuning the reverse genetics of TYK2"

Ana Puga – PhD Student – 2014 - [ongoing](#)

"STAT1 isoform specificity in innate and adaptive immunity"

Stefen Shoebridge – PhD Student 2016 - [ongoing](#)

"TYK2 and immune cell cross talks in tumor surveillance"

Anzhelika Karjalainen – PhD Student 2016 - [ongoing](#)

"TYK2 and kinase-inactive TYK2 in NK cell tumor surveillance"

Katharina Wöss – PhD Student 2016 - [ongoing](#)

"Germline mutated TYK2 in hematopoietic tumorigenesis"

Invited Conference Lectures (5 recent selected)

- 2017 - Invited Speaker at the 2nd International Conference on Cytokine Signaling in Cancer, Aegean Conferences, Heraklion, Greece
- 2015 - Invited Speaker at the 1st International Conference on Cytokine Signaling in Cancer, Aegean Conferences, Chania, Greece
- 2014 - Invited Speaker Joint Symposium between Taiwan-Austria Research Community, Taipeh, Taiwan
- 2013 - Invited Speaker 2nd FEBS Special Meeting on JAK-STAT, Nottingham UK

Honors & Awards (5 most relevant)

- 1987 - 1990 'Stipendium nach dem Gesetz zur Förderung des wissenschaftlichen und künstlerischen Nachwuchses' (Stipend for promoting talented students in sciences and the arts), Munich, Bavaria
- 1991 - 1992 Fellow of the European Molecular Biology Organization (EMBO Long Term Fellowship)
- 1993 Fellow of the Commission of the European Communities (CEC Fellowship at Senior Level in the Framework of the Medical Research Programme)
- 2001 elected member of the German Nationale Akademie der Wissenschaften Leopoldina (www.leopoldina.org)

Member of Reviewing Panels, Editorial Boards, Scientific Organizations:

- 2017 - 2019 Appointment to the Senat (Scientific Advisory Board) of the Christian Doppler Research Society (CDG), Austria
- since 2013 Member of the Committee for the Stipend Programs of the Austrian Academy of Sciences ÖAW
- 2008 - 2015 Member of the Scientific Advisory Board of the Roslin Institute UK
- 2007 - 2014 Scientific consultant for the Institute of Science and Technology Austria (IST Austria)
- 2004 - 2016 Member of the scientific board of the Bavarian Ministry of Science, Research and Arts funding 'BayGene' (Bavarian Genome Research Networks)
- 2004 - 2008 Member of the scientific board of the Federal Ministry of Education and Research of Germany funding 'FUGATO' (Functional Genome Analysis of Animal Organisms)
- 2003 - 2011 Member of the curatorship of the Austrian Science Foundation (FWF)
- since 2003 Reviewer for the German Research Funding Agency (Deutsche Forschungsgemeinschaft, DFG), the French National Research Agency (ANR), Slovak Academy of Sciences, Slovenian Research Agency, a.o.

Most Important Research Funding

- Austrian Science Funds: FWF-SFB F61, 2017-2021, Special research programme 'Monarchies and Hierarchies in Shaping Chromatin Landscapes'; Co-ordination project and subproject (1.5 Mio € and 0.4 Mio €)
- EC Seventh Framework Programme Infect-ERA 'eDEVILLI', 2015-18 (300 k€)
- FWF SFB 'JakStat Signaling' (Coordinator and Project Leader), 2006-16 (3.9 Mio € and 1.0 Mio €)
- FWF DK 'Inflammation and Immunity', 2010-19 (360 k€)
- BM_WF^a GEN-AU 'Austromouse', 2006-2012 (480 k€)
- BM_WF^a GEN-AU 'InflammaBiota', 2009-2012 (340 k€)

Key International Collaborators (selection of 5 with joint publications)

- **David E. Levy** New York University School of Medicine, NY USA - david.levy@nyumc.org
- **Ofer Mandelboim** Hebrew University Hadassah Medical School, Jerusalem, IL - oferm@ekmd.huji.ac.il
- **Olli Silvennoinen** Institute of Biotechnology, University of Helsinki, FI - Olli.Silvennoinen@uta.fi

List of Publications (2014 - 2018)

Overall, > 200 original publications, several (co-)edited books and book chapters.

1. Crncec, I., Modak, M., Gordziel, C., Svinka, J., Scharf, I., Moritsch, S., Pathria, P., Schlederer, M., Kenner, L., Timelthaler, G., Muller, M., Strobl, B., Casanova, E., Bayer, E., Mohr, T., Stockl, J., Friedrich, K., and Eferl, R. (2018). Stat1 is a sex-specific tumor suppressor in colitis-associated colorectal cancer. **Mol Oncol** 12, 514-528. doi: 10.1002/1878-0261.12178.
2. Pham, H.T.T., Maurer, B., Prchal-Murphy, M., Grausenburger, R., Grundschober, E., Javaheri, T., Nivarthi, H., Boersma, A., Kolbe, T., Elabd, M., Halbritter, F., Pencik, J., Kazemi, Z., Grebien, F., Hengstschlager, M., Kenner, L., Kubicek, S., Farlik, M., Bock, C., Valent, P., Muller, M., Rulicke, T., Sexl, V., and Moriggl, R. (2018). STAT5BN642H is a driver mutation for T cell neoplasia. **J Clin Invest** 128, 387-401. doi: 10.1172/JCI94509.
3. Porpaczy, E., Tripolt, S., Hoelbl-Kovacic, A., Gisslinger, B., Bago-Horvath, Z., Casanova-Hevia, E., Clappier, E., Decker, T., Fajmann, S., Fux, D.A., Greiner, G., Gueltekin, S., Heller, G., Herkner, H., Hoermann, G., Kiladjian, J.J., Kolbe, T., Kornauth, C., Krauth, M.T., Kralovics, R., Muellauer, L., Mueller, M., Prchal-Murphy, M., Putz, E.M., Raffoux, E., Schiefer, A.I., Schmetterer, K., Schneckenleithner, C., Simonitsch-Klupp, I., Skrabs, C., Sperr, W.R., Staber, P.B., Strobl, B., Valent, P., Jaeger, U., Gisslinger, H., and Sexl, V. (2018). Aggressive B-cell lymphomas in patients with myelofibrosis receiving JAK1/2 inhibitor therapy. **Blood** doi: 10.1182/blood-2017-10-810739.
4. Wagner, M., Skandamis, P., Allerberger, F., Schoder, D., Lassnig, C., Muller, M., and Rychli, K. (2018). The impact of shelf life on exposure as revealed from quality control data associated with the quargel outbreak. **Int J Food Microbiol** 279, 64-69. doi: 10.1016/j.ijfoodmicro.2018.04.031.
5. Willmann, M., Hadzijušufovic, E., Hermine, O., Dacasto, M., Marcanto, L., Bauer, K., Peter, B., Gamperl, S., Eisenwort, G., Jensen-Jarolim, E., Müller, M., Arock, M., Vail, D.M., and Valent, P. (2018). Recent Advances in Comparative Oncology: the Paradigmatic Example of Canine and Human Mast Cell Neoplasms. **Vet Comp Oncol**. accepted
6. Wingelhofer, B., Neubauer, H.A., Valent, P., Han, X., Constantinescu, S., Gunning, P.T., Müller, M., and Moriggl, R. (2018). Implications of STAT3 and STAT5 signaling on gene regulation and chromatin remodeling in hematopoietic cancer. **Leukemia**. doi: 10.1038/s41375-018-0117-x. [review]
7. Leitner, N.R., Witalisz-Siepracka, A., Strobl, B., and Müller, M. (2017). Tyrosine kinase 2 - surveillant of tumours and bona fide oncogene. **Cytokine** 89, 209-218. pii: S1043-4666(15)30086-7. doi: 10.1016/j.cyto.2015.10.015. [review]
8. Linke, M., Pham, H., Katholnig, K., Schnöller, T., Miller, A., Demel, F., Schütz, B., Rosner, M., Kovacic, B., Sukhbaatar, N., Niederreiter, B., Blüml, S., Kuess, S., Sexl, V., Müller, M., Weckwerth, W., Haschemi, A., Susani, M., Hengstschlagger, M., Gambello, M., and Weichhart, T. (2017). Chronic signaling via the metabolic checkpoint kinase mTORC1 induces macrophage granuloma formation and marks sarcoidosis progression. **Nat Immunol** 18, 293-302. doi: 10.1038/ni.3655
9. Majoros, A., Platanitis, E., Kernbauer-Holz, E., Rosebrock, F., Muller, M., and Decker, T. Canonical and Non-Canonical Aspects of JAK-STAT Signaling: Lessons from Interferons for Cytokine Responses. **Front Immunol** 8, 29. doi: 10.3389/fimmu.2017.00029 [review]
10. Meissl, K., Macho-Maschler, S., Müller, M., and Strobl, B. (2017). The good, the bad and the unknown faces of STAT1 in carcinogenesis. **Cytokine** 89, 12-20. pii: S1043-4666(15)30099-5. doi: 10.1016/j.cyto.2015.11.011 [review]
11. Castiglia, V., Piersigilli, A., Ebner, F., Janos, M., Goldmann, O., Damböck, U., Kröger, A., Weiss, S., Knapp, S., Jamieson, A., Kirschnig, C., Kalinke, U., Strobl, B., Müller, M., Stoiber, D., Lienenklaus, S., and Kovarik, P. (2016). Type I Interferon Signaling

- Prevents Lethal Systemic IL-1 Signaling-Driven Hyperinflammation during Invasive Bacterial Infection of Soft Tissue. **Cell Host Microbe** 19, 375-387. doi: 10.1016/j.chom.2016.02.003.
12. Gotthardt, D., Putz, E.M., Grundschober, E., Prchal-Murphy, M., Straka, E., Kudweis, P., Heller, G., Bago-Horvath, Z., Witalisz-Siepracka, A., Cumaraswamy, A.A., Gunning, P.T., Strobl, B., Müller, M., Moriggl, R., Stockmann, C., and Sexl, V. (2016). STAT5 is a key regulator in NK cells and acts as molecular switch from tumor surveillance to tumor promotion. **Cancer Discov** 6, 414-429. doi: 10.1158/2159-8290.CD-15-0732
 13. Maier, B.B., Hladik, A., Lakovits, K., Korosec, A., Martins, R., Kral, J.B., Mesteri, I., Strobl, B., Müller, M., Kalinke, U., Merad, M., and Knapp, S. (2016). Type I interferon promotes alveolar epithelial type II cell survival during pulmonary S. pneumoniae infection and sterile lung injury in mice. **Eur J Immunol** 46, 2175-2186. doi: 10.1002/eji.201546201
 14. Majoros, A., Platanitis, E., Szappanos, D., Cheoan, H.J., Vogl, C., Shukla, P., Stark, G.R., Sexl, V., Schreiber, R.D., Schindler, C., Müller, M., and Decker, T. (2016). Response to interferons and antibacterial innate immunity in absence of tyrosine-phosphorylated STAT1. **EMBO Rep** 17, 367-382. doi: 10.15252/embr.201540726.
 15. Putz, E.M., Majoros, A., Gotthardt, D., Zebedin-Brandl, E., Prchal-Murphy, M., Eisinger, D.A., Schlattl, A., Schreiber, R.D., Carotta, S., Müller, M., Gerner, C., Decker, T., and Sexl, V. (2016). Novel non-canonical role of STAT1 in Natural Killer cell cytotoxicity. **Oncolimmunology** 5: e1186314. doi: 10.1080/2162402X.2016.1186314
 16. Schön, K., Schornsteiner, E., Dzieciol, M., Wagner, M., Müller, M., and Schmitz-Esser, S. (2016). Microbial communities in dairy processing environment floor drains are dominated by product-associated bacteria and yeasts. **Food Cont** 70, 210-215. doi: 10.1016/j.foodcont.2016.05.057
 17. Zotz, J.S., Wölbing, F., Lassnig, C., Kauffmann, M., Schulte, U., Kolb, A., Whitelaw, B., Müller, M., Biedermann, T., and Huber, M. (2016). CD13/aminopeptidase N is a negative regulator of mast cell activation. **FASEB J** 30, 2225-2235. doi: 10.1096/fj.201600278
 18. Bakiri, L., Macho-Maschler, S., Custic, I., Niemiec, J., Guio-Carrion, A., Hasenfuss, S.C., Müller, M., Beug, H., and Wagner, E. (2015). Fra-1/AP-1 induces mammary epithelial cell EMT by modulating Zeb1/2 and TGFbeta expression. **Cell Death Diff** 22, 336-350. DOI: 10.1038/cdd.2014.157
 19. Berry, D., Kuzyk, O., Rauch, I., Heider, S., Schwab, C., Hainzl, E., Decker, T., Müller, M., Strobl, B., Schleper, C., Urich, T., Wagner, M., Kenner, L., and Loy, A. (2015). Intestinal microbiota signatures associated with inflammation history in mice experiencing recurring colitis. **Front Microbiol** 6, 1408. doi: 10.3389/fmicb.2015.01408
 20. Gilbert, S., Nivarthi, H., Mayhew, C.N., Lo, Y.H., Noah, T.K., Vallance, J., Rulicke, T., Muller, M., Jegga, A.G., Tang, W., Zhang, D., Helmrath, M., Shroyer, N., Moriggl, R., and Han, X. (2015). Activated STAT5 Confers Resistance to Intestinal Injury by Increasing Intestinal Stem Cell Proliferation and Regeneration. **Stem Cell Rep** 4, 209-225. doi: 10.1016/j.stemcr.2014.12.004
 21. Hainzl, E., Stockinger, S., Rauch, I., Heider, S., Berry, D., Lassnig, C., Schwab, C., Rosebrock, F., Milinovich, G., Schleder, M., Wagner, M., Schleper, C., Loy, A., Urich, T., Kenner, L., Han, X., Decker, T., Strobl, B., and Müller, M. (2015). Intestinal epithelial cell tyrosine kinase 2 transduces interleukin-22 signals to protect from acute colitis. **J Immunol** 195, 5011-5024. DOI: 10.4049/jimmunol.1402565
 22. Leopold Wager, C.M., Hole, C.R., Wozniak, K.L., Olszewski, M.A., Müller, M., and Wormley Jr., F.L. (2015). STAT1 Signaling within Macrophages is Required for Anti-fungal Activity against Cryptococcus neoformans. **Infect Immun** 83, 4513-4527. doi:10.1128/IAI.00935-15
 23. Pathria, P., Gotthardt, D., Prchal-Murphy, M., Putz, E.M., Holcman, M., Schleder, M., Grabner, B., Crncec, I., Svinka, J., Musteanu, M., Hoffmann, T., Filipits, M.,

- Berger, W., Poli, V., Kenner, L., Bilban, M., Casanova, E., Müller, M., Strobl, B., Bayer, E., Mohr, T., Sexl, V., and Eferl, R. (2015). Myeloid STAT3 promotes formation of colitis-associated colorectal cancer in mice. **Oncoimmunology** 4, e998529. DOI: 10.1080/2162402X.2014.998529
24. Prchal-Murphy, M., Witalisz-Siepracka, A., Bednarik, K.T., Putz, E.M., Gotthardt, D., Meissl, K., Sexl, V., Müller, M., and Strobl, B. (2015). In vivo tumor surveillance by NK cells requires TYK2 but not TYK2 kinase activity. **Oncoimmunology** 4, e1047579. DOI: 10.1080/2162402X.2015.1047579
 25. Rauch, I., Rosebrock, F., Hainzl, E., Heider, S., Majoros, A., Wienerroither, S., Strobl, B., Stockinger, S., Staeheli, P., Kenner, L., Müller, M., and Decker, T. (2015). Non canonical effects of IRF9 in intestinal inflammation: more than type I and type III interferons. **Mol Cell Biol** 35, 2332-2343. DOI: 10.1128/MCB.01498-14
 26. Shukla, P., Vogl, C., Wallner, B., Rigler, D., Müller, M., and Macho-Maschler, S. (2015). High-Throughput mRNA and miRNA Profiling of Epithelial-Mesenchymal Transition in MDCK cells. **BMC Genomics** 16, 944. DOI: 10.1186/s12864-015-2036-9
 27. Smetko, A., Soudre, A., Silbermayr, K., Muller, S., Brem, G., Hanotte, O., Boettcher, P.J., Stella, A., Meszaros, G., Wurzinger, M., Curik, I., Muller, M., Burgstaller, J., and Solkner, J. (2015). Trypanosomiasis: potential driver of selection in African cattle. **Front Genet** 6, 137. DOI: 10.3389/fgene.2015.00137
 28. Stiedl, P., Mc Mahon, R., Blaas, L., Stanek, V., Svinka, J., Grabner, B., Zollner, G., Claudel, T., Müller, M., Mikulits, W., Esterbauer, H., Eferl, R., Haybaeck, J., Trauner, M., and Casanova, E. (2015). Growth hormone resistance exacerbates cholestasis-induced murine liver fibrosis. **Hepatology** 61, 613-626. DOI: 10.1002/hep.27408
 29. Üstün, S., Lassnig, C., Preitschopf, A., Mikula, M., Müller, M., Hengstschläger, M., and Weichhart, T. (2015). Effects of the mTOR inhibitor everolimus and the PI3K/mTOR inhibitor NVP-BEZ235 in murine acute lung injury models. **Transpl Immunol** 33, 45-50. DOI: 10.1016/j.trim.2015.06.001
 30. Wienerroither, S., Shukla, P., Farlik, M., Majoros, A., Stych, B., Vogl, C., Cheon, H., Stark, G.R., Strobl, B., Müller, M., and Decker, T. (2015). Cooperative transcriptional activation of antimicrobial genes by STAT and NFκB pathways through concerted recruitment of the mediator complex. **Cell Rep** 12, 300-312. DOI: 10.1016/j.celrep.2015.06.021
 31. Bosmann, M., Russkamp, N.F., Strobl, B., Roewe, J., Balouzian, L., Pache, F., Radsak, M.P., van Rooijen, N., Zetoune, F.S., Sarma, J.V., Núñez, G., Müller, M., Murray, P.J., and Ward, P.A. (2014). Interruption of macrophage-derived IL-27(p28) production by IL-10 during sepsis requires STAT3 but not SOCS3. **J Immunol** 193, 5668-5677. DOI: 10.4049/jimmunol.1302280
 32. Bosmann, M., Strobl, B., Kichler, N., Pache, F., Murray, P.J., Müller, M., and Ward, P.A. (2014). Tyrosine kinase 2 promotes sepsis-associated lethality by facilitating production of interleukin-27. **J Leukoc Biol** 96, 123-131. DOI: 10.1189/jlb.3A1013-541R
 33. Gotthardt, D., Putz, E.M., Straka, E., Kudweis, P., Baggio, M., Poli, V., Strobl, B., Müller, M., and Sexl, V. (2014). Loss of STAT3 in murine NK cells enhances NK cell-dependent tumor surveillance. **Blood** 124, 2370-2379. DOI: 10.1182/blood-2014-03-564450
 34. Grunert, T., Monahan, A., Lassnig, C., Vogl, C., Strobl, B., Müller, M., and Ehling-Schulz, M. (2014). Deciphering host genotype-specific impacts on the metabolic fingerprint of *Listeria monocytogenes* by FTIR spectroscopy. **PLoS One** 9, e115959. DOI: 10.1371/journal.pone.0115959
 35. Keil, E., Finkenstädt, D., Wufka, C., Trilling, M., Liebfried, P., Strobl, B., Müller, M., and Pfeffer, K. (2014). Important scaffold function of the Janus kinase 2 uncovered by a novel mouse model harboring a Jak2 activation loop mutation. **Blood** 123, 520-529. DOI: 10.1182/blood-2013-03-492157
 36. Kovacic, B., Hoelbl-Kovacic, A., Fischhuber, K.M., Leitner, N.R., Gotthardt, D., Casanova, E., Sexl, V., and Müller, M. (2014). A fate-tracing mouse model to

- distinguish between myeloid and lymphoid lineages. **Haematologica** 99, 1006-1015. DOI: 10.3324/haematol.2013.097154
37. Leitner, N.R., Lassnig, C., Rom, R., Heider, S., Bago-Horvath, Z., Eferl, R., Müller, S., Kolbe, T., Kenner, L., Rüllicke, T., Strobl, B., and Müller, M. (2014). Inducible, dose-adjustable and time-restricted reconstitution of Stat1 deficiency in vivo. **PLoS One** 29, e86608. DOI: 10.1371/journal.pone.0086608
 38. Liehl, P., Zuzarte-Luís, V., Chan, J., Zillinger, T., Baptista, F., Carapau, D., Konert, M., Hanson, K.K., Carret, C., Lassnig, C., Müller, M., Kalinke, U., Saeed, M., Ferreira Chora, A., Golenbock, D.T., Strobl, B., Prudencio, M., Coelho, L.P., Kappe, S.H., Superti-Furga, J., Pichlmair, A., Vigário, A.M., Rice, C.M., Fitzgerald, K.A., Barchert, W., and Mota, M.M. (2014). Host-cell sensors for Plasmodium activate innate immunity against liver-stage infection. **Nat Med** 20, 47-53. DOI: 10.1038/nm.3424
 39. Rauch, I., Hainzl, E., Rosebrock, F., Heider, S., Schwab, C., Berry, D., Stoiber, D., Wagner, M., Schleper, C., Loy, A., Urich, T., Müller, M., Strobl, B., Kenner, L., and Decker, T. (2014). Type I interferons have opposing effects during the emergence and recovery phases of colitis. **Eur J Immunol** 44, 2749-2760. DOI: 10.1002/eji.201344401
 40. Schwab, C., Berry, D., Rauch, I., Rennisch, I., Ramesmayer, J., Hainzl, E., Heider, S., Decker, T., Kenner, L., Müller, M., Strobl, B., Wagner, M., Schleper, C., Loy, A., and Urich, T. (2014). Longitudinal study of murine microbiota activity and interactions with the host during acute inflammation and recovery. **ISME J** 8, 1101-1114. DOI: 10.1038/ismej.2013.223
 41. Semper, C., Leitner, N.R., Lassnig, C., Parrini, M., Mahlakoiv, T., Rammerstorfer, M., Lorenz, K., Rigler, D., Müller, S., Kolbe, T., Vogl, C., Rüllicke, T., Staeheli, P., Decker, T., Müller, M., and Strobl, B. (2014). STAT1 β is not dominant negative and is capable of contributing to IFN γ -dependent innate immunity. **Mol Cell Biol** 34, 2235-2248. DOI: 10.1128/MCB.00295-14
 42. Übel, C., Graser, A., Koch, S., Rieker, R.J., Lehr, H.A., Müller, M., and Finotto, S. (2014). Role of Tyk-2 in Th9 and Th17 cells in allergic asthma. **Sci Rep** 4, 5865. DOI: 10.1038/srep05865
 43. Vielnascher, R.M., Hainzl, E., Leitner, N.R., Rammerstorfer, M., Popp, D., Witalisz, A., Rom, R., Karaghiosoff, M., Kolbe, T., Müller, S., Rüllicke, T., Lassnig, C., Strobl, B., and Müller, M. (2014). Conditional ablation of TYK2 in immunity to viral infection and tumor surveillance. **Transgenic Res** 23, 519-529. DOI: 10.1007/s11248-014-9795-y
 44. Wienerroither, S., Rauch, I., Rosebrock, F., Jamieson, A.M., Bradner, J., Muhar, M., Zuber, J., Müller, M., and Decker, T. (2014). Regulation of NO synthesis, local inflammation and innate immunity to pathogens by BET family proteins. **Mol Cell Biol** 34, 415-427. DOI: 10.1128/MCB.01353-13

10 Most Important Career Publications (only as first or corresponding author)

1. Hainzl, E., Stockinger, S., Rauch, I., Heider, S., Berry, D., Lassnig, C., Schwab, C., Rosebrock, F., Milinovich, G., Schleder, M., Wagner, M., Schleper, C., Loy, A., Urich, T., Kenner, L., Han, X., Decker, T., Strobl, B., and Müller, M. (2015). Intestinal epithelial cell tyrosine kinase 2 transduces interleukin-22 signals to protect from acute colitis. **J Immunol** 195, 5011-5024. DOI: 10.4049/jimmunol.1402565
2. Prchal-Murphy, M., Semper, C., Lassnig, C., Wallner, B., Gausterer, C., Teppner-Klymiuk, I., Kobolak, J., Müller, S., Kolbe, T., Karaghiosoff, M., Dinnyes, A., Rüllicke, T., Leitner, N.R., Strobl, B., and Müller, M. (2012). TYK2 Kinase Activity Is Required for Functional Type I Interferon Responses In Vivo. **PLoS One** 7, e39141. DOI: 10.1371/journal.pone.0039141
3. Vogl, C., Flatt, T., Fuhrmann, B., Hofmann, E., Wallner, B., Stiefvater, R., Kovarik, P., Strobl, B., and Müller, M. (2010). Transcriptome analysis reveals a major impact of JAK protein tyrosine kinase 2 (Tyk2) on the expression of interferon-responsive and metabolic genes. **BMC Genomics** 11, 199. DOI: 10.1186/1471-2164-11-199

4. Costantino, G., Egerbacher, M., Kolbe, T., Karaghiosoff, M., Strobl, B., Vogl, C., Helmreich, M., and Müller M. (2008) Tyk2 and Stat1 contribute to intestinal ischemia/reperfusion (I/R) injury. **Shock** 29, 238-244.
5. Lassnig, C., Sanchez, C.M., Egerbacher, M., Walter, I., Majer, S., Kolbe, T., Pallares, P., Enjuanes, L., Müller, M. (2005) Development of a transgenic mouse model susceptible to human coronavirus 229E. **Proc Natl Acad Sci USA** 102, 8275-8280.
6. Strobl, B., Bubic, I., Bruns, U., Steinborn, R., Lajko, R., Kolbe, T., Karaghiosoff, M., Kalinke, U., Jonjic, S., Müller, M. (2005). Novel functions of Tyk2 in the antiviral defense against murine cytomegalovirus. **J Immunol** 175, 4000-4008.
7. Karaghiosoff, M., Steinborn, R., Kovarik, P., Kriegshäuser, G., Baccarini, M., Donabauer, B., Reichart, U., Kolbe, T., Bogdan, C., Leanderson, T., Levy, D., Decker, T., and Müller, M. (2003). Central role for type I interferons and Tyk2 in lipopolysaccharide-induced endotoxin shock. **Nat Immunol** 4, 471-477.
8. Karaghiosoff, M., Neubauer, H., Lassnig, C., Kovarik, P., Schindler, H., Pircher, H., McCoy, B., Bogdan, C., Decker, T., Brem, G., Pfeffer, K., and Müller, M. (2000). Partial impairment of cytokine responses in Tyk2-deficient mice. **Immunity** 13, 549-560.
9. Müller, M., Briscoe, J., Laxton, C., Guschin, D., Ziemicki, A., Silvennoinen, O., Harpur, A.G., Barbieri, G., Witthuhn, B.A., Schindler, C., Pellegrini, S., Wilks, A.F., Ihle, J.N., Stark, G.R. and Kerr, I.M. (1993). The protein tyrosine kinase JAK1 complements defects in the interferon- α/β and - γ signal transduction. **Nature** 366, 129-135.
10. Müller, M., Laxton, C., Briscoe, J., Schindler, C., Improta, T., Darnell, J.E., Jr., Stark, G.R. and Kerr, I.M. (1993). Complementation of a mutant cell line: central role of the 91-kDa polypeptide of ISGF3 in the interferon- α and - γ signal transduction pathways. **EMBO J** 12, 4221-4228.