

CURRICULUM VITAE

1) *General Information*

Name: König, Renate,

Title: Dr. phil. nat.,

Position:

Group Leader (Paul-Ehrlich-Institut, Langen, Germany)

Paul-Ehrlich-Institut

NG3 "Host-Pathogen-Interactions"

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Publications: <https://pubmed.ncbi.nlm.nih.gov/?term=Koenig%2CRenate&sort=date>

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2) *Education and degrees*

2002 Ph.D. (Dr. phil. nat.) in Biochemistry, Johann-Wolfgang-Goethe University of Frankfurt

1997 M.S. (Diplom) in Biology, University of Bayreuth

3) *Personal statement*

Our group has a strong track record in identifying and characterizing novel cellular regulators of innate immune responses against pathogen infection. We possess considerable expertise in high-throughput screening approaches and the integration of systems-level datasets. Our group incorporates a data science subgroup that focuses on next-generation sequencing analysis and machine learning approaches. An additional subgroup addresses application of machine learning and text mining approaches to support regulators and assessors at PEI.

4) *Academic career*

2010 - present	Group Leader, Paul-Ehrlich-Institute in Langen, Germany www.pei.de/host-pathogen-interactions
2010 - 2020	Adjunct Assistant Professor, Sanford-Burnham Medical Research Institute, San Diego, CA, USA
2017 - 2019	Nominated Member of the HMA/EMA Joint Task Force on Big Data
2008 – 2010	Research Assistant Professor, Sanford-Burnham Medical Research Institute, San Diego, CA, USA, Prof. Chanda
2007 – 2008	Staff Scientist, Sanford-Burnham Medical Research Institute, San Diego, CA, USA, Prof. Chanda
2004 – 2007	Institute Fellow (Staff Scientist), The Genomics Institute of the Novartis Research Foundation, San Diego, CA, USA, Dr. Chanda
2002 – 2004	Postdoc, The Salk Institute, San Diego, CA, USA, Prof. Landau

5) *Awards, Honors and Other*

Session Chair	Frontiers in Retrovirology Conference, Leuven, Belgium, 2018 Cold-Spring-Harbor Retrovirus Meeting, New York, 2016 and 2012 German Society for Virology (GfV), Bochum, Münster, Marburg, Düsseldorf and Hannover in 2015, 2016, 2017, 2019 and 2021
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- CROI (Conference Retroviruses and Opportunistic Infections), Boston, 2014
- 2013, 2015 Appointed Member of the international steering committee for the DÖAK (German-Austrian AIDS congress)
- 2010 – 2010 Member of the HINT Center, HIV Immune Networks Team, www.hint.org

6) Selected publications,

- Sunnie M Yoh, João I. Mamede, Derrick Lau, Narae Ahn, Maria T Sánchez-Aparicio, Joshua Temple, Andrew Tuckwell, Nina V. Fuchs, Gianguido C. Cianci, Laura Riva, Heather Curry, Xin Yin, Stéphanie Gambut, Lacy M. Simons, Judd F. Hultquist, **Renate König**, Yong Xiong, Adolfo García-Sastre, Till Böcking, Thomas J. Hope, Sumit K. Chanda. Recognition of HIV-1 Capsid Licenses Innate Immune Response to Viral Infection. **bioRxiv** 2022.01.10.472699; doi: <https://doi.org/10.1101/2022.01.10.472699>
- Moritz Schüssler, Paula Rauch, Kerstin Schott, Adrian Oo, Nina Verena Fuchs, Baek Kim, **Renate König**. CRISPR/Cas9 knock-in strategy to evaluate phospho-regulation of SAMHD1. **bioRxiv** 2022.01.04.475018; doi: <https://doi.org/10.1101/2022.01.04.475018>
- Schott K, Majer C, Bulashevskaya A, Childs L, Schmidt MHH, Rajalingam K, Munder M, **König R**. 2021. SAMHD1 in cancer: curse or cure? Review. **J Mol Med** (Berl). 2021 Sep 4. doi:10.1007/s00109-021-02131-w. Epub ahead of print. PMID: 34480199.
- Fuchs NV, Schieck M, Neuenkirch M, Tondera C, Schmitz H, Wendeburg L, Steinemann D, Elpers C, Rutsch F, **König R**. 2020. Generation of three induced pluripotent cell lines (iPSCs) from an Aicardi-Goutières syndrome (AGS) patient harboring a deletion in the genomic locus of the sterile alpha motif and HD domain containing protein 1 (SAMHD1). **Stem Cell Res**. 2020 Mar;43:101697. doi:10.1016/j.scr.2019.101697
- Lauterbach-Rivière L, Bergez M, Mönch S, Qu B, Riess M, Vondran FWR, Liese J, Hornung V, Urban S, **König R**. 2020. HBV DNA is a substrate for the cGAS/STING pathway but is not sensed in infected hepatocytes. **Viruses**. 2020 May 29;12(6):592. doi:10.3390/v12060592
- Bergez M, Weber J, Riess M, Erdbeer A, Seifried J, Stanke N, Munz C, Hornung V, **König R***, Lindemann D*. 2019. Insights into Innate Sensing of Prototype Foamy Viruses in Myeloid Cells. **Viruses**. 2019 Nov 26;11(12). pii: E1095. doi:10.3390/v11121095; *equal contribution
- Fuchs NV, Schieck M, Neuenkirch M, Tondera C, Schmitz H, des Portes V, Germanaud D, Steinemann D, Göhring G, **König R**. 2019. Induced pluripotent stem cells (iPSCs) derived from a Renpenning Syndrome Patient with c.459_462delAGAG Mutation in PQBP1 (PEIi001-A). **Stem Cell Research**, Dec;41:101592. doi:10.1016/j.scr.2019.101592
- Schott K, Hein-Fuchs N, Derua R, Mahboubi B, Schnellbacher E, Seifried J, Tondera C, Schmitz H, Shepard C, Brandariz-Nuñez A, Diaz-Griffero F, Reuter A, Kim B, Janssens V, and **König R**; 2018, Dephosphorylation of the HIV-1 restriction factor SAMHD1 is mediated by PP2A-B55 α holoenzymes during mitotic exit. **Nature Communications** Jun 8;9(1):2227,
- Riess M, Fuchs NV, Idica A, Hamdorf M, Flory E, Pedersen IM, **König R**. 2017 Interferons Induce Expression of SAMHD1 in Monocytes through Downregulation of miR-181a and miR-30a. **Journal of Biological Chemistry**. Jan 6;292(1):264-277.
- Guo H*, **König R***, Deng M, Riess M, Mo J, Zhang L, Petrucelli A, Yoh SM, Barefoot B, Samo M, Sempowski GD, Zhang A, Colberg-Poley AM, Feng H, Lemon SM, Liu Y, Zhang Y, Wen H, Zhang Z, Damania B, Tsao LC, Wang Q, Su L, Duncan JA, Chanda SK, Ting JP. 2016. NLRX1 Sequesters STING to Negatively Regulate the Interferon Response,

Thereby Facilitating the Replication of HIV-1 and DNA Viruses. **Cell Host Microbe.**
19(4):515-28. *contributed equally

Sommer AF, Rivière L, Qu B, Schott K, Riess M, Ni Y, Shepard C, Schnellbacher E, Finkernagel M, Himmelsbach K, Welzel K, Kettern N, Donnerhak C, Münk C, Flory E, Liese J, Kim B, Urban S, **König R.** 2016. Restrictive influence of SAMHD1 on Hepatitis B Virus life cycle. **Scientific Reports.** 6:26616.

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Yoh, S.M., M. Schneider, J. Seifried, S. Soonthornvacharin, R.E. Akleh, K.C. Olivieri, P.D. De Jesus, C. Ruan, E. de Castro, P.A. Ruiz, D. Germanaud, V. des Portes, A. Garcia-Sastre, **R. König**, and S.K. Chanda. 2015. PQBP1 Is a Proximal Sensor of the cGAS-Dependent Innate Response to HIV-1. **Cell.** 161:1293-1305. IF: 31.3

Berger A, Sommer AFR, Zwarg J, Hamdorf M, Welzel K, Esly N, Panitz S, Reuter A, Ramos I, Jatiani A, Mulder LCF, Fernandez-Sesma A, Rutsch F, Simon V, **König R**[#], Flory E[#]. 2011. SAMHD1-Deficient CD14+ Cells from Individuals with Aicardi-Goutières Syndrome Are Highly Susceptible to HIV-1 Infection. **PLoS Pathog.** 7(12): e1002425. ^{#co-corresponding authors},

König, R.^{*}, S. Stertz^{*}, Y. Zhou, A. Inoue, H.H. Hoffmann, S. Bhattacharyya, J.G. Alamares, D.M. Tscherne, M.B. Ortigoza, Y. Liang, Q. Gao, S.E. Andrews, S. Bandyopadhyay, P. De Jesus, B.P. Tu, L. Pache, C. Shih, A. Orth, G. Bonamy, L. Miraglia, T. Ideker, A. Garcia-Sastre, J.A. Young, P. Palese, M.L. Shaw, and S.K. Chanda. 2010. Human host factors required for influenza virus replication. **Nature.** 463:813-817. ^{*}contributed ^{equally},

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König R., Chiang C.Y., Tu B.P., Yan S.F., DeJesus P.D., Romero A., Bergauer T., Orth A., Krueger U., Zhou Y., Chanda S.K. 2007. A probability-based approach for the analysis of large-scale RNAi screens. **Nature Methods**, 4(10):847-9.