

## Curriculum Vitae Lars Kaestner

### Personal Data

Title	Prof. Dr. rer. nat.
First name	Lars
Name	Kaestner
Current position	PI, permanent position
Current institution(s)/site(s), country	Theoretical Medicine and Biosciences, Medical Faculty, Saarland University, Homburg/Saar, Germany Experimental Physics, Dynamics of Fluids, Saarland University, Saarbruecken, Germany;
Identifiers/ORCID	ORCID-ID: 0000-0001-6796-9535

### Qualifications and Career

Stages	Periods and Details
Diploma in Biophysics	Photobiophysics, 09/1990 – 08/1996, Humboldt University Berlin, Germany; University of Bristol, UK; Lomonosov University Moscow, Russia
Doctorate	01/1997 – 03/2000, Prof. Ingolf Bernhardt, Electrophysiology and biophysics of red blood cells, Biophysics, Humboldt University Berlin, Germany; Physiology, University of Oxford, UK; Biological Station Roscoff, Sorbonne University Paris, France
Stages of academic/professional career	since 2003, PI and lecturer, Medical Faculty and Faculty of Natural Science and Technology, Saarland University, Homburg and Saarbruecken, Germany  since 2015, Guest Professor, Department of Biology and Biotechnology, University of Pavia, Italy  2011-17, Head of Research Center for Molecular Imaging and Screening, Medical Faculty, Saarland University, Homburg, Germany  2003-11, PostDoc, Institute for Molecular Cell Biology, Medical Faculty, Saarland University, Homburg, Germany  2001-02, R&D Manager, Gentian AS, Oslo, Norway

### Supplementary Career Information

since 2020, Initiator and Coordinator of the ITN 'Erythrocytes properties and viability in dependence of flow and extra-cellular environment' (EVIDENCE)  
2020/21, Initiator and Leader of the project 'Transdermal oxygen supply of COVID-19 patients', Volkswagen Foundation  
2018-20, Initiator and Co-applicant of the DACH project 'Neocytolysis: Quantification and characterisation of mechanisms', German Research Foundation (DFG)  
2017/18, Applicant of the project 'Label-free and cost efficient cancer cell detector' funded by the Volkswagen Foundation  
2015-19, Initiator and Work package leader of the ITN 'Regulation of red cell life-span erythropoiesis, survival, senescence and clearance' (RELEVANCE)  
2013-18, Initiator and Coordinator of the EC 7<sup>th</sup> Framework programme: 'Combined Molecular Microscopy for Therapy and Personalized Medication in Rare Anaemias Treatments' (CoMMITMenT)  
2011-15, Initiator and Work package leader in the collaborative project 'CordiLux', Federal Ministry for Education and Research (BMBF)  
2007-14, PI in the Clinical Research Group 'Signal Transduction in adaptive and maladaptive Remodeling of the Heart' (KFO 129), German Research Foundation (DFG)  
2006-15, PI in the Graduate School 'Calcium-Signalling and Cellular Nanodomains' (GK 1326), German Research Foundation (DFG)

### **Engagement in the Research System**

since 2012, Member of the Medical Faculty Committee, Saarland University, Germany  
since 2013, Member of the organizing committee of the biannual meetings of the European Red Cell Society (ERCS)  
2014, Host and main organizer of the International Symposium 'Advanced Microscopy Techniques in Life Sciences', Homburg, Germany  
since 2014, Member of the regional commission to evaluate and endorse animal experiments, Saarland, Germany  
2017, Main organizer of the conference 'Regulation of Erythrocytes Life Cycle - From Stem Cells to Clearance Mechanisms', EMBL Heidelberg, Germany  
since 2019, Member of the committee 'Scientific Competence of Medical Students', Saarland University, Germany  
since 2019, Vice president of the regional commission to evaluate and endorse animal experiments, Saarland, Germany  
since 2020, Organizer of the International Red Blood Cell Seminar - a biweekly online seminar  
since 2020, Co-Founder, Shareholder and Consultant, Cysmic GmbH, Saarbruecken, Germany  
  
2023, Main Organizer of the 'International Meeting on Neuroacanthocytosis Syndromes', University Hospital Homburg, Germany

### **Supervision of Researchers in Early Career Phases**

since 2011, supervision of **4 PostDocs**  
since 2003, supervision of **22 PhD/MD students**  
  
since 2016, supervision of **5 Diploma/Master Students**

since 2014, Reviewer in **international PhD-thesis committees**: A. Makhro, University Zürich, Switzerland; R. Huisjes, University of Utrecht, The Netherlands; L. Conrard, Catholic University Louvain, Belgium; D. Monedero Alonso, Sorbonne University, Paris, France; F. Agliandolo, University Amsterdam, The Netherlands; R. Buks, INSERM, Paris, France; A. Abay, University Amsterdam, The Netherlands; F. C. Alçiçek, Jagiellonian University Krakow, Poland

## Scientific Results

### Category A

Flormann, D., Qiao, M., Murciano, N., Iacono, G., Darras, A., Hof, S., Recktenwald, S.M., Rotordam, M.G., Becker, N., Geisel, J., Wagner, C., von Lindern, M., van den Akker, E., Kaestner, L. (2022) Transient Receptor Potential channel Vanilloid type 2 in red cells of cannabis consumer. *Am. J. Hematol.*, doi: 10.1002/ajh.26509.

Minetti, G, Bogdanova, A, Maierbäurl, H., Kaestner, L. (2022) Space anemia unexplained: red blood cells seem to be space-proof. *Am. J. Hematol.*, doi.org/10.1002/ajh.26663.

Jansen, J., Qiao, M., Hertz, L., Wang, X., Fermo, E., Zaninoni, A., Colombatti, R., Bernhardt, I., Bianchi, P., Kaestner, L. (2021) Mechanistic ion channel interactions in red cells of patients with Gárdos channelopathy. *Blood Adv.*, **5**, 3303-8. doi.org/10.1182/bloodadvances.2020003823.

Klein, M., Kaestner, L., Bogdanova, A.Y., Minetti, G., Rudloff S., Lundby, C., Makhro, A., Seiler, E., van Cromvoirt, A., Fenk, S., Simionato, G., Hertz, L., Recktenwald, Schäfer, L., Haider, T., Fried, S., Borsch, Marti, H.H., Sander, A., Mairbäurl, H. (2021) Absence of neocytolysis in humans returning from a three-week high-altitude sojourn. *Acta Physiol.*, **00**:e13647.

Wang, J., Hertz, L., Ruppenthal, S., El Nemer, W., Connes, P., Goede, J.S., Bogdanova, A., Birnbaumer, L., Kaestner, L. (2021) Lysophosphatidic acid activated calcium signaling is elevated in red cells from sickle cell disease patients. *Cells*, **10**, 456.

Rotordam, G.M., Fermo, E., Becker, N., Barcellini, W., Brüggemann, A., Fertig, N., Egée, S., Markus Rapedius, M., Bianchi, P., Kaestner, L. (2019) A novel gain-of-function mutation of Piezo1 is functionally affirmed in red blood cells by high-throughput patch clamp. *Haematologica*, **104**, e181.

Kaestner, L., Minetti, G. (2017) The potential of erythrocytes as cellular aging models. *Cell Death Diff.* **24**, 1475–1477.

Danielczok, J.G., Terriac, E., Hertz, L., Petkova-Kirova, P., Lautenschläger, F., Laschke, M.W., Kaestner, L. (2017) Red blood cell passage of small capillaries is associated with transient Ca<sup>2+</sup>-mediated adaptations. *Front. Physiol.*, **8**, 979.

Kaestner, L., Scholz, A., Tian, Q., Ruppenthal, S., Tabellion, W., Wiesen, K., Katus, H.A., Müller, O.J., Kotlikoff, M.I., Lipp, P. (2014) Genetically encoded Ca<sup>2+</sup> indicators in cardiac myocytes. *Circulation Research*, **114**, 1623-1639.

Wang, J., Wagner-Britz, L., Bogdanova, A., Ruppenthal, S., Wiesen, K., Kaiser, E., Tian, Q., Krause, E., Bernhardt, I., Lipp, P., Philipp, S.E., Kaestner L. (2013) Morphologically homogeneous red blood cells present a heterogeneous response to hormonal stimulation. *PLoS ONE*, **8**(6): e67697.

## **Academic Distinctions**

1997-2000, Awardee of the Graduate School 'Dynamics and Evolution of macromolecular and cellular processes' (DFG funded) Humboldt University Berlin, Germany

2013, Nomination for the 'Best Professor of the Saarland 2013'

2014, Venia Legendi in Biophysics

2022, Main Poster Price at the Meeting of the European Red Cell Society, Varese, Italy

## **Other Information**

since 2008, Reviewer for more than 30 scientific journals including, e.g., 'Blood' and 'Circulation Research' - currently approximately one review per week

since 2016, Reviewer for international funding organizations, in particular the 'Canada-Belgium joint funding program'; 'Sanquin', Amsterdam, The Netherlands; the 'Fund of Scientific Research' (FNRS), Belgium; the 'Medical Research Council' (MRC), UK; the 'Agence Nationale de la Recherche' (ANR), France; the German Research Foundation (DFG), Germany

since 2018, Specialty Chief Editor at Frontiers in Physiology, Frontiers Media S.A., Switzerland