ANNA A. POPOVA, Ph.D.

Date and place of birth: 30.03.1983, Moscow, Russia

Nationality: Russian

Marital status: married, two children

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EDUCATION

08/2006-03/2010 **University Medical Centre Mannheim, University of Heidelberg**
Department of Dermatology and Allergology

Ph.D. Cell and Molecular Biology, *Magna Cum-Laude*
Dissertation Title: "New mechanisms of signal transduction in alternatively activated macrophages"

09/2000-06/2005 **Lomonosov Moscow State University, Moscow, Russia**
Department of Cell Biology and Immunology

M.Sc. Microbiology, *with excellence*
Masters Diploma Title: "Investigation of polymorphism of latent membrane protein 1 of Epstein-Barr virus"

PROFESSIONAL EMPLOYMENT

03/2018 – present Co-founder and CTO of Aquarray GmbH

01/2014 – present **Project Leader,** Institute of Biological and Chemical Systems – Functional and Molecular Systems (IBSC-FMS), Karlsruhe Institute of Technology (KIT), Karlsruhe, Germany
- *Developing microarray technology for high-throughput screenings of live cells*

09/2009 – 12/2013 **Maternity leave**

08/2006 – 08/2009 **PhD Student,** Department of Dermatology and Allergology, University Medical Centre Mannheim, University of Heidelberg, Mannheim, Germany

- *Investigated regulation of M-CSF production and its receptor expression and activity in M1 and M2 macrophages*
- *Found new binding partners for IL-17BR using Yeast-Two-Hybrid system and investigated their roles in IL-17BR signaling in alternatively activated macrophages*

05/2006 – 07/2006 **Research Assistant,** Institute for Medical Physics and Biophysics, University Hospital Charite, Berlin, Germany
- *Assembled eukaryotic ribosomal pretermination complex for electron microscopy.*

11/2005 – 04/2006 **Research Assistant,** Engelhardt Institute of Molecular Biology, Moscow, Russia
- *Studied mechanisms of termination of protein translation using eukaryotic reconstituted translation system*

08/2004 – 11/2004 **Research Assistant,** Institute for Virus Research, Kyoto University, Kyoto, Japan
- *Performed sequencing analysis of LMP1 genes isolated from various donors*

09/2002 – 07/2005 **Research Assistant,** Laboratory of Viral Carcinogenesis, Institute for Carcinogenesis, Blokhin Cancer Research Center, Moscow, Russia
- *Investigated polymorphism of latent membrane protein1 (LMP1) of Epstein-Barr virus*
- *Examined influence of different mutations on functional activity of LMP1 protein*

RESEARCH TECHNIQUES

Molecular Biology — DNA and RNA isolation and purification, PCR, Real-Time PCR, molecular cloning, artificial mutagenesis, sequencing analysis, protein isolation and purification (nickel chromatography, gel-filtration, ion-exchange chromatography (FPLC)), Toeprinting assay, Yeast Two-Hybrid screening, GST-pull-down assay, confocal microscopy, cell-based high throughput screening, Lab-on-a-Chip technologies

Immunology — Western blot analysis, Immunofluorescence, ELISA, FACS analysis

Tissue Culture — Human embryonic kidney (HEK) 293 cells, Human cervical cancer cells (Hela), Human hepatocellular liver carcinoma cell line (HepG2) and many others, transfection of cell lines; isolation of primary human monocytes from human blood, 3D cell culture, spheroids

LANGUAGES

English (fluent) · German (very good) · Russian (native)

PUBLICATIONS

1. Shraddha Chakraborty, Victor Gourain, Maximilian Benz, Johannes M. Scheiger,c, Pavel A. Levkin* and Anna A. Popova,* (2021). **Droplet Microarrays for cell culture: effect of surface properties and nanoliter culture volume on global transcriptomic landscape.** *Materials Today Bio doi: https://doi.org/10.1016/j.mtbio.2021.10011*

2. Haijun Cui, Xianxian Wang, Janine Wesslowski, Tina Tronser, Jakob Rosenbauer, Alexander Schug, Gary Davidson, Anna A. Popova,* and Pavel A. Levkin* (2021). **Assembly of Multi-Spheroid Cellular Architectures by Programmable Droplet Merging.** *Advanced Materials doi:10.1002/adma.202006434*

3. Anna A. Popova, Sascha Dietrich, Wolfgang Huber, Markus Reischl, Ravindra Peravali1, and Pavel A. Levkin (2020). **Miniaturized Drug Sensitivity and Resistance Test on Patient-Derived Cells Using Droplet-Microarray.** *SLAS Technology doi: 10.1177/2472630320934432*

4. Popova AA, Levkin PA (2020) **Precision Medicine in Oncology: In Vitro Drug Sensitivity and Resistance Test (DSRT) for Selection of Personalized Anticancer Therapy** *Adv. Therap.* DOI:10.1002/adtp.201900100

5. Popova AA, Tronser T, Demir K, Kuodyte K, Starkuviene V, Wajda P, Levkin PA (2019) **Facile One Step Formation and Screening of Tumor Spheroids Using Droplet-Microarray Platform** *Small* doi.org/10.1002/smll.201901299

6. Popova AA, Marcato D, Peravali R, Wehl I, Schepers U, Levkin PA (2018) **Fish-Microarray: Miniaturized Platform for Single-Embryo High-Throughput Screenings** *Adv Funct. Mater*. doi.org/10.1002/adfm.201703486

7. Tronser T, Popova AA, Jaggy M, Bastmeyer M, Levkin PA (2017) **Droplet Microarray Based on Patterned Superhydrophobic Surfaces Prevents Stem Cell Differentiation and Enables High-Throughput Stem Cell Screening.** *Adv Healthc Mater*. doi: 10.1002/adhm.201700622.

8. Tronser T, Popova AA, Levkin PA (2017) **Miniaturized platform for high-throughput screening of stem cells.** *Curr. Opin. Biotechnol.* 4: 46: 141-149 doi: 10.1016/j.copbio.2017.03.005.

9. Gabriella E. Jogia, Tina Tronser, Anna A. Popova and Pavel A. Levkin (2016) **Single Cell Analysis using Droplet Microarray** *Microarrays*, 2016, 5(4):28. doi:10.3390/microarrays5040028.

10. Anna A. Popova, Claire Depew, Katya Manuella, Alexander Trubitsyn, Ravindra Peravali, Jorge Ángel González Ordiano, Markus Reischl, and Pavel A. Levkin (2016) **Evaluation of the Droplet-Microarray Platform for High-Throughput Screening of Suspension Cells.** *SLAS Technol.* 22(2):163-175. doi: 10.1177/2211068216677204.

11. Ana I. Neto, Konstantin Demir, Anna A. Popova, Mariana B. Oliveira, João F. Mano, and Pavel A. Levkin (2016) **Fabrication of Hydrogel Particles of Defined Shapes Using Superhydrophobic-Hydrophilic Micropatterns,** *Adv. Mater.* DOI: 10.1002/adma.201602350

12. A. A. Popova, T. G. Hartanto, E. Schmitt and P. A. Levkin (2016) **Droplet-Microarray on superhydrophobic-superhydrophilic patterns for high throughput live cell screenings** *RSC Adv* (6): 38263-38276.

13. Popova A, Schillo S, Demir K, Ueda E, Nesterov-Mueller A, Levkin P (2015) **Droplet-Array (DA) Sandwich Chip: A Versatile Platform for High-Throughput Cell Screening Based on Superhydrophobic–Superhydrophilic Micropatterning**, *Adv. Mater.* 27: 5217–22

14. Nurgazieva D, Mickley A, Moganti K, Ming W, Ovsyi I, Popova A, Sachindra, Awad K, Wang N, Bieback K, Goerdt S, Kzhyshkowska J, Gratchev A (2015) **TGF-β1, but not bone morphogenetic proteins, activates Smad1/5 pathway in primary human macrophages and induces expression of proatherogenic genes**, J Immunol. 194 (2): 709-18

15. Popova A, Kzhyshkowska J, Nurgazieva D, Goerdt S, Gratchev A. (2011), **Smurf2 regulates IL17BR by proteasomal degradation of its novel binding partner DAZAP2**, Immunobiology 217 (3): 321-8

16. Popova A, Kzhyshkowska J, Nurgazieva D, Goerdt S, Gratchev A. (2010), **Pro- and anti-inflammatory control of M-CSF-mediated macrophages differentiation**, Immunobiology 216 (1-2): 164-72

17. Gratchev A, Kzhyshkowska J, Kannookadan S, Ochsenreiter M, Popova A, Yu X, Mamidi S, Stonehouse-Usselmann E, Muller-Molinet I, Gooi L, Goerdt S. (2008), **Activation of TGF-beta-specific multistep gene expression program in mature macrophages requires glucocorticoid-mediated surface expression of TGF-beta receptor II**, J. Immunol. 180 (10): 6553-65.

CONFERENCES AND WORKSHOPS

- 21st Annual Meeting of European Macrophage and Dendritic Cell Society (EMDS)
- Screening Europe 2015
- Meet&Match: NOVEL IN-VITRO MODELS FOR DRUG DISCOVERY AND TOXICITY TESTING
- SCIENION's Workshop DIAGNOSTICS 5.0 - Partnering for Tomorrow's Medical Care
- EMBL Personalized Health 2015
- SLAS2016 5th annual international conference and exhibition
- DECHEMA, 3D cell culture 2016
- Artificial Organs 2016
- SLAS High Content Screening 2017
- ELRIG Drug Discovery 2017
- SLAS2018
- nICLAS Forum Fraunhofer IPA 2018
- Basel Life EMBO 2018
- SLAS2019
- SLAS2019 Europe
- Meet&Match: Precision Medicine 2019
- EMBL Precision Health 2019
- SLAS 2020
- ISS Research and Development Conference (ISSRDC) 2020 Online Series

AWARDS

- Poster Prize, EMBL/Stanford Personalized Health Conference 2015
- The Tony B. Award, The SLAS Academic Travel Awards Program, SLAS2016
- Nominated for SLAS Innovation Award, SLAS 2016
- The Tony B. Award, The SLAS Academic Travel Awards Program, SLAS2018
- The Tony B. Award, The SLAS Academic Travel Awards Program, SLAS2019

PROJECT GRANTS

- HeiKa 2017 "Eradicating integrin-mediated resistance to the cancer therapies by combinatorial screening in 3D using miniaturized Droplet-Microarrays". Funded period: 01.01.2018 – 31.12.2018.
- DFG PO 1820/3-1: "ChIPseq-on-Chip: Droplet-Microarray as a miniaturized high throughput platform for parallel ChIP-seq experiments". Funded period: 01.09.2018 – 31.08.2020.
- HeiKa 2019 "High-throughput compound screening in 3D glioma tumorsphere models". Funded period: 01.01.2020 – 31.12.2020.
- Ministerium für Wissenschaft, Forschung und Kunst Baden-Württemberg Ideenwettbewerb Biotechnologie – Von der Natur lernen, Phase 1 and 2: „Evaluation of Droplet Microarray (DMA) platform for Drug Sensitivity and Resistance Test (DSRT) with large number of samples from patients with different cancer types". Funded period: 01.03.2020 – 28.02.2023.
- HeiKa 2020 "Combining Droplet Microarrays and Mass Spectrometry for Single-Cell Proteomics". Funded period: 01.01.2021 – 31.12.2021.
- KIT Future Fields "Screening Platform for Personalized Oncology (SPPO) – Standardized Individual Profiling of Tumours based on Miniaturized Technology for Drug Sensitivity Screening". Funded period: 01.01.2021 – 31.08.2022.