

DR. JANA GRUNE

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Date of birth
10.05.1987

Nationality
German

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[Publication list Jana Grune](#)

Profile

Junior Research Group Leader at the German Heart Center of the Charité (DHZC), Charité – Universitätsmedizin Berlin, Berlin with extensive experience in Physiology, Pharmacology, and Immunology.

Employment History

Junior Research Group Leader at the German Heart Center of the Charité Charité – Universitätsmedizin Berlin, Berlin

December 2022 — present

Research Assistant at Department of Physiology, **Kuebler lab**, Charité – Universitätsmedizin Berlin, Berlin

January 2018 — November 2022

Research Assistant at Center for Systems Biology, Harvard Medical School/Massachusetts General Hospital, **Nahrendorf lab**, Boston

April 2019 — December 2021

Research Assistant and Scientific Coordinator at Center for Cardiovascular Research, **Kintscher lab**, Charité – Universitätsmedizin Berlin, Berlin

November 2015 — December 2017

Education

PhD (Pharmacology), University of Potsdam, Potsdam and PhD Student at Center for Cardiovascular Research, **Kintscher lab**, Charité – Universitätsmedizin Berlin, Berlin

January 2012 — October 2015

Master thesis, Max-Planck Institute for Molecular Genetics Berlin, Berlin

March 2011 — September 2011

Master of Science (Toxicology), Charité – Universitätsmedizin Berlin, Berlin

October 2009 — October 2011

Bachelor of Science (Nutrition Science), Justus-Liebig-Universität Gießen, Gießen

October 2006 — October 2009

Grants

Corona-Stiftung Nachwuchsforschergruppe "Immune modulatory effects of aldosterone in pulmonary hypertension-associated lung vascular maladaptations.", 1 032 900 euro

January 2023 — December 2027

DZHK Junior Research Group "Immune modulatory effects of aldosterone in pulmonary hypertension-associated lung vascular maladaptations.", 1 800 000 euro

December 2022 — Nov 2028

Sub-project in the collaborating research center 1470 "Cardio-pulmonary interaction in HFpEF", 480 000 euro

Jan 2022 — December 2025

Charité 3R grant „Simulation of Heart failure in Ovo With Microscopy and Echocardiography (ShowMe)", 120 000 euro

February 2021 — December 2022

DZHK-Postdoc Start Up Grant "B-Cell Mediated Autoimmunity in Pulmonary Hypertension Associated to Left Heart Disease.", 60 000 euro

May 2019 — June 2021

DFG Auslandsstipendium, 120 000 euro

April 2019 — December 2021

DGK Forschungsstipendium "Spironolactone prevents hypoxic pulmonary vasoconstriction via inhibition of Pannexin 1", 50 000 euro

January 2019 — December 2020

Grant Sonnenfeld Stiftung: "Stereomikroskop", 12 000 euro

September 2017

DynAge Grant, FU Berlin for "Reduced Autophagic Response in the aged Cardiomyocyte", 10 000 euro

June 2016 — December 2016

★ Activities

PI, member of the steering committee and gender equality acceleration board and representative of the young scientists in the collaborating research center 1470 "Multilevel mechanistic characterization of heart failure with preserved ejection fraction".

Member of Charité 3R, German Society for Cardiology (DGK), DZHK

Member of the DZHK evaluation board of the DZHK partner site Berlin

👤 Prices

DGK 'Franz-Maximilin-Groedel-Forschungspreis', 2023

DGK 'Hans-Blömer-Young Investigator Award', 2022

Visualsonics Travel Grant "Establishing a new application in 3D small animal echocardiography", 2019

Best Poster "Basic Research". European Council for Cardiovascular Research (ECCR), Garda, Italy, 2016

Publication list (23.03.2023)

Published first and last authorships (original articles)

Covington TA, Pilz PM, Mulhern RM, Ngoy S, Loscalzo A, Liu J, Fisch S, **Grune J**. GPx3 deficiency exacerbates maladaptive RV remodeling in experimental pulmonary artery banding. *Am J Physiol Lung Cell Mol Physiol*. 2023 Mar 7. doi: 10.1152/ajplung.00379.2022. Online ahead of print.

Grune J, Lewis AJM, Yamazoe M, Hulsmans M, Rohde D, Xiao L, Zhang S, Ott C, Calcagno DM, Zhou Y, Timm K, Shanmuganathan M, Pulous F, Schloss MJ, Foy BH, Capen D, Wojtkiewicz GR, Iwamoto Y, Grune T, Brown D, Higgins J, Ferreira VM, Herring N, Channon KM, Neubauer S, Oxford Acute Myocardial Infarction (OxAMI) Study, Sosnovik DE, Milan DJ, Swirski FK, King KR, Aguirre AD, Ellinor PT, Nahrendorf M. Neutrophils incite and macrophages avert electrical storm after myocardial infarction. *Nature Cardiovascular Research*

Ott C, Pappritz K, Hegemann N, John C, Jeuthe S, McAlpine CS, Iwamoto Y, Lauryn JH, Klages J, Klopffleisch R, Van Linthout S, Swirski F, Nahrendorf M, Kintscher U, Grune T, Kuebler WM*, **Grune J***. Spontaneous Degenerative Aortic Valve Disease in New Zealand Obese Mice. *J Am Heart Assoc*. 2021 Dec 7;10(23):e023131. Epub 2021 Nov 15.

Ott C, Jung T, Brix S, John C, Betz IR, Foryst-Ludwig A, Deubel S, Kuebler WM, Grune T, Kintscher U, **Grune J**. Hypertrophy-Reduced Autophagy Causes Cardiac Dysfunction by Directly Impacting Cardiomyocyte Contractility. *Cells*. 2021 Apr 4;10(4):805.

Pappritz K*, **Grune J***, Klein O, Hegemann N, Dong F, El-Shafeey M, Lin J, Kuebler WM, Kintscher U, Tschöpe C, Van Linthout S. Speckle-tracking echocardiography combined with imaging mass spectrometry assesses region-dependent alterations. *Sci Rep*. 2020 Feb 27;10(1):3629. *these authors contributed equally to the work.

Lapinskas T*, Kelle S*, **Grune J***, Foryst-Ludwig A, Meyborg H, Jeuthe S, Wellnhofer E, Elsanhoury A, Pieske B, Gebker R, Kintscher U, Stawowy P. Serelaxin Improves Regional Myocardial Function in Experimental Heart Failure: An In Vivo Cardiac Magnetic Resonance Study. *J Am Heart Assoc*. 2020 Feb 4;9(3):e013702. *these authors contributed equally to the work.

Grune J, Ritter D, Kraker K, Pappritz K, Beyhoff N, Schutte T, Ott C, John C, van Linthout S, Tschöpe C, Dechend R, Müller DN, Haase N, Grune T, Kintscher U, Kuebler WM (2019) Accurate assessment of LV function using the first automated 2D-border detection algorithm for small animals - evaluation and application to models of LV dysfunction. *Cardiovasc Ultrasound* 17:7.

Grune J, Beyhoff N, Smeir E, Chudek R, Blumrich A, Ban Z, Brix S, Betz IR, Schupp M, Foryst-Ludwig A, Klopffleisch R, Stawowy P, Houtman R, Kolkhof P, Kintscher U (2018a) Selective Mineralocorticoid Receptor Cofactor Modulation as Molecular Basis for Finerenone's Antifibrotic Activity. *Hypertension* 71:599-608

Grune J, Blumrich A, Brix S, Jeuthe S, Drescher C, Grune T, Foryst-Ludwig A, Messroghli D, Kuebler WM, Ott C, Kintscher U (2018b) Evaluation of a commercial multi-dimensional echocardiography technique for ventricular volumetry in small animals. *Cardiovasc Ultrasound* 16:10.

Beyhoff N, Brix S, Betz IR, Klopffleisch R, Foryst-Ludwig A, Krannich A, Stawowy P, Knebel F, **Grune J***, Kintscher U* (2017) Application of Speckle-Tracking Echocardiography in an Experimental Model of Isolated Subendocardial Damage. *J Am Soc Echocardiogr* 30:1239-1250 e1232. *these authors contributed equally to the work.

Grune J*, Meyborg H*, Bezhaeva T, Kappert K, Hillmeister P, Kintscher U, Pieske B, Stawowy P (2017) PCSK9 regulates the chemokine receptor CCR2 on monocytes. *Biochem Biophys Res Commun* 485:312-318. *these authors contributed equally to the work.

Lapinskas T*, **Grune J***, Zamani SM, Jeuthe S, Messroghli D, Gebker R, Meyborg H, Kintscher U, Zaliunas R, Pieske B, Stawowy P, Kelle S (2017) Cardiovascular magnetic resonance feature tracking in small animals - a preliminary study on reproducibility and sample size calculation. *BMC Med Imaging* 17:51. *these authors contributed equally to the work.

Grune J, Benz V, Brix S, Salatzki J, Blumrich A, Hoft B, Klopffleisch R, Foryst-Ludwig A, Kolkhof P, Kintscher U (2016). Steroidal and Nonsteroidal Mineralocorticoid Receptor Antagonists Cause Differential Cardiac Gene Expression in Pressure Overload-induced Cardiac Hypertrophy. *J Cardiovasc Pharmacol* 67:402-411.

Published co-authorships (original articles)

Bapat A, Li G, Xiao L, Yeri A, Hulsmans M, **Grune J**, Yamazoe M, Schloss MJ, Iwamoto Y, Tedeschi J, Yang X, Nahrendorf M, Rosenzweig A, Ellinor PT, Das S, Milan D. Genetic inhibition of serum glucocorticoid kinase 1 prevents obesity-related atrial fibrillation. *JCI Insight*. 2022 Oct 10;7(19):e160885. doi: 10.1172/jci.insight.160885.

Pulous FE, Cruz-Hernández JC, Yang C, Kaya Z, Paccalet A, Wojtkiewicz G, Capen D, Brown D, Wu JW, Schloss MJ, Vinegoni C, Richter D, Yamazoe M, Hulsmans M, Momin N, **Grune J**, Rohde D, McAlpine CS, Panizzi P, Weissleder R, Kim DE, Swirski FK, Lin CP, Moskowitz MA, Nahrendorf M. Cerebrospinal fluid can exit into the skull bone marrow and instruct cranial hematopoiesis in mice with bacterial meningitis. *Nat Neurosci*. 2022 May 2. Online ahead of print.

Rohde D, Vandoorne K, Lee I-H, **Grune J**, Zhang S, McAlpine CS, Schloss MJ, Nayar R, Courties G, Frodermann V, Wojtkiewicz G, Honold L, Chen Q, Schmidt S, Iwamoto Y, Sun Y, Cremer S, Hoyer FF, Iborra-Egea O, Muñoz-Guijosa C, Ji F, Zhou B, Adams RH, Wythe JD, Hidalgo J, Watanabe H, Jung Y, van der Laan A, Piek JJ, Kfoury Y, Désogère PA, Vinegoni C, Dutta P, Sadreyev RI, Caravan P, Bayes-Genis A, Libby P, Scadden DT, Lin CP, Naxerova K, Swirski FK, Nahrendorf M. Cardiovascular disease increases myeloid cell production by inducing vascular pathologies in the hematopoietic stem cell niche. *Nature Cardiovasc Res*. Accepted 2021 Oct 26.

Hannemann C, Schecker JH, Brettschneider A, **Grune J**, Rösener N, Weller A, Stangl V, Fisher EA, Stangl K, Ludwig A, Hewing B. Deficiency of inactive rhomboid protein 2 (iRhom2) attenuates diet-induced hyperlipidaemia and early atherogenesis. *Cardiovasc Res*. 2022 Jan 7;118(1):156-168.

Betz IR, Qaiyumi SJ, Goeritzer M, Thiele A, Brix S, Beyhoff N, **Grune J**, Klopffleisch R, Greulich F, Uhlenhaut NH, Kintscher U, Foryst-Ludwig A. Cardioprotective Effects of Palmitoleic Acid (C16:1n7) in a Mouse Model of Catecholamine-Induced Cardiac Damage Are Mediated by PPAR Activation. *Int J Mol Sci*. 2021 Nov 24;22(23):12695.

Grimmer B, Krauszman A, Hu X, Kabir G, Connelly KA, Li M, **Grune J**, Madry C, Isakson BE, Kuebler WM. Pannexin 1-a novel regulator of acute hypoxic pulmonary vasoconstriction. *Cardiovasc Res*. 2021 Oct 20;cvab326. Online ahead of print.

Hegemann N, Primessnig U, Bode D, Wakula P, Beindorff N, Klopffleisch R, Michalick L, **Grune J**, Hohendanner F, Messroghli D, Pieske B, Kuebler WM, Heinzl FR. Right-ventricular dysfunction in HFpEF is linked to altered cardiomyocyte Ca²⁺ homeostasis and myofilament sensitivity. *ESC Heart Fail*. 2021 Aug;8(4):3130-3144. Epub 2021 May 17.

Ritter D, Goeritzer M, Thiele A, Blumrich A, Beyhoff N, Luettgies K, Smeir E, Kasch J, **Grune J**, Müller OJ, Klopffleisch R, Jaeger C, Foryst-Ludwig A, Kintscher U. Liver X Receptor Agonist AZ876 Induces Beneficial Endogenous Cardiac Lipid Reprogramming and Protects Against Isoproterenol-Induced Cardiac Damage. *J Am Heart Assoc.* 2021 Jul 20;10(14):e019473.

Thiele A, Luettgies K, Ritter D, Beyhoff N, Smeir E, **Grune J**, Steinhoff JS, Schupp M, Klopffleisch R, Rothe M, Wilck N, Bartolomaeus H, Migglautsch AK, Breinbauer R, Kershaw EE, Grabner GF, Zechner R, Kintscher U, Foryst-Ludwig A. Pharmacological inhibition of adipose tissue Adipose Triglyceride Lipase (ATGL) by Atglistatin prevents catecholamine-induced myocardial damage. *Cardiovasc Res.* 2021 Jun 1:cvab182.

Lerchbaumer MH, Lauryn JH, Bachmann U, Enghard P, Fischer T, **Grune J**, Hegemann N, Khadzhyrov D, Kruse JM, Lehner LJ, Lindner T, Oezkan T, Zickler D, Kuebler WM, Hamm B, Eckardt KU, Muench F. Point-of-care lung ultrasound in COVID-19 patients: inter- and intra-observer agreement in a prospective observational study. *Sci Rep.* 2021 May 21;11(1):10678.

Blumrich A, Vogler G, Dresen S, Diop SB, Jaeger C, Leberer S, **Grune J**, Wirth EK, Hoeft B, Renko K, Foryst-Ludwig A, Spranger J, Sigrist S, Bodmer R, Kintscher U. Fat-body brummer lipase determines survival and cardiac function during starvation in *Drosophila melanogaster*. *iScience.* 2021 Mar 9;24(4):102288.

Panizzi P, Krohn-Grimberghe M, Keliher E, Ye YX, **Grune J**, Frodermann V, Sun Y, Muse CG, Bushey K, Iwamoto Y, van Leent MMT, Meerwaldt A, Toner YC, Munitz J, Maier A, Soultanidis G, Calcagno C, Pérez-Medina C, Carlucci G, Riddell KP, Barney S, Horne G, Anderson B, Maddur-Appajaiah A, Verhamme IM, Bock PE, Wojtkiewicz GR, Courties G, Swirski FK, Church WR, Walz PH, Tillson DM, Mulder WJM, Nahrendorf M. Multimodal imaging of bacterial-host interface in mice and piglets with *Staphylococcus aureus* endocarditis. *Sci Transl Med.* 2020 Nov 4;12(568):eaay2104.

Kräker K, Herse F, Golic M, Reichhart N, Crespo-Garcia S, Strauß O, **Grune J**, Kintscher U, Ebrahim M, Bader M, Alenina N, Heuser A, Luft FC, Müller DN, Dechend R, Haase N. Effects of empagliflozin and target-organ damage in a novel rodent model of heart failure induced by combined hypertension and diabetes. *Sci Rep.* 2020 Aug 20;10(1):14061.

Frodermann V, Rohde D, Courties G, Severe N, Schloss MJ, Amatullah H, McAlpine CS, Cremer S, Hoyer FF, Ji F, van Koeverden ID, Herisson F, Honold L, Masson GS, Zhang S, **Grune J**, Iwamoto Y, Schmidt SP, Wojtkiewicz GR, Lee IH, Gustafsson K, Pasterkamp G, de Jager SCA, Sadreyev RI, MacFadyen J, Libby P, Ridker P, Scadden DT, Naxerova K, Jeffrey KL, Swirski FK, Nahrendorf M. Exercise reduces inflammatory cell production and cardiovascular inflammation via instruction of hematopoietic progenitor cells. *Nat Med.* 2019 Nov;25(11):1761-1771.

Beyhoff N, Lohr D, Foryst-Ludwig A, Klopffleisch R, Brix S, **Grune J**, Thiele A, Erfinanda L, Tabuchi A, Kuebler WM, Pieske B, Schreiber LM, Kintscher U. Characterization of Myocardial Microstructure and Function in an Experimental Model of Isolated Subendocardial Damage. *Hypertension.* 2019 Aug;74(2):295-304.

John C, **Grune J**, Ott C, Nowotny K, Deubel S, Kühne A, Schubert C, Kintscher U, Regitz-Zagrosek V, Grune T. Sex Differences in Cardiac Mitochondria in the New Zealand Obese Mouse. *Front Endocrinol (Lausanne).* 2018 Dec 4;9:732. doi: 10.3389/fendo.2018.00732. eCollection 2018.

Salatzki J, Foryst-Ludwig A, Bentele K, Blumrich A, Smeir E, Ban Z, Brix S, **Grune J**, Beyhoff N, Klopffleisch R, Dunst S, Surma MA, Klose C, Rothe M, Heinzl FR, Krannich A, Kershaw EE, Beule D, Schulze PC, Marx N, Kintscher U (2018) Adipose tissue ATGL modifies the cardiac lipidome in pressure-overload-induced left ventricular failure. *PLoS Genet* 14:e1007171.

Foryst-Ludwig A, Kreissl MC, Benz V, Brix S, Smeir E, Ban Z, Januszewicz E, Salatzki J, **Grune J**,

Schwanstecher AK, Blumrich A, Schirbel A, Klopffleisch R, Rothe M, Blume K, Halle M, Wolfarth B, Kershaw EE, Kintscher U (2015) Adipose Tissue Lipolysis Promotes Exercise-induced Cardiac Hypertrophy Involving the Lipokine C16:1n7-Palmitoleate. *J Biol Chem* 290:23603-23615.

Ebert G, Steininger A, Weissmann R, Boldt V, Lind-Thomsen A, **Grune J**, Badelt S, Hessler M, Peiser M, Hitzler M, Jensen LR, Muller I, Hu H, Arndt PF, Kuss AW, Tebel K, Ullmann R (2014) Distribution of segmental duplications in the context of higher order chromatin organisation of human chromosome 7. *BMC Genomics* 15:537.

Published Reviews and editorials

Funk-Hilsdorf TC, Behrens F, **Grune J**, Simmons S. Dysregulated immunity in pulmonary hypertension – from companion to composer. *Front Physiol.* 2022 Feb 17;13:819145.

Grune J, Yamazoe M, Nahrendorf M. Electroimmunology and cardiac arrhythmia. *Nat Rev Cardiol.* 2021 Mar 2. 2021 Aug;18(8):547-564.

Heinzel FR, Hegemann N, Hohendanner F, Primessnig U, **Grune J**, Blaschke F, de Boer RA, Pieske B, Schiattarella GG, Kuebler WM. Left ventricular dysfunction in heart failure with preserved ejection fraction- molecular mechanisms and impact on right ventricular function. *Cardiovasc Diagn Ther.* 2020 Oct;10(5):1541-1560.

Szulcek R, **Grune J**, Kuebler WM. The updated cancer paradigm of PAH: recognizing complexity. *Am J Physiol Lung Cell Mol Physiol.* 2020 Jun 1;318(6):L1111-L1114.

Grune J, Beyhoff N, Hegemann N, Lauryn JH, Kuebler WM. From bedside to bench: lung ultrasound for the assessment of pulmonary edema in animal models. *Cell Tissue Res.* 2020 May;380(2):379-392.

Grune J, Tabuchi A, Kuebler WM. Alveolar dynamics during mechanical ventilation in the healthy and injured lung. *Intensive Care Med Exp.* 2019 Jul 25;7(Suppl 1):34.

Grune J, Kuebler WM. Is there a role for endothelin-1 receptor antagonists in the treatment of lung fibrosis associated with pulmonary hypertension? *Eur Respir J.* 2018 Aug 30;52(2):1801287.