

Prof. Dr. agr. habil. J. Barbara Nebe

General Information

- Nebe, J. Barbara, apl. Prof. Dr. agr. habil., 03.01.1958, female
- Department of Cell Biology, Rostock University Medical Center (UMR), Schillingallee 69, 18057 Rostock, +49 381-494-7771, barbara.nebe@med.uni-rostock.de
- apl. Prof. for Cell Biology
- 2 daughters, childcare leave 1 year each (1988 and 2000)

University Training and Degree

Animal Sciences (1985-1991), University of Rostock, Dipl.-Ing. agr., Prof. Dr. sc. med. D. Falkenhagen

Advanced Academic Qualifications

Habilitation: Joint habilitation process of Faculty of Medicine and Faculty of Agricultural Science, University of Rostock, 2005, Prof. Dr. med. vet. habil. E. Mohr, Prof. Dr. med. habil. R. Schmidt
Doctorate: Animal physiology, University of Rostock, 1995, Prof. Dr. rer. nat. J. Rychly, Prof. Dr. sc. med. vet. W. Methling

Postgraduate Professional Career

since 2013	Chair, Dept. of Cell Biology, Rostock University Medical Center
2011	apl. Professor for Cell Biology, University of Rostock
2006 –2012	Vice-chair, Dept. of Cell Biology, Rostock University Medical Center
1991 – 2006	Scientific assistant, Dept. of Clinical Research, Medical Faculty of University of Rostock

Other

since 2013	Founder member and curatorship member of the National Center for Plasma Medicine e.V.
2008-2013	Member of the Executive Committee of the German Society of Biomaterials (DGBM)
2008-2013	Steering Committee BMBF "Campus PlasmaMed"
2008-2013	Equal Opportunity Commissioners, University of Rostock, UMR
2002	Best lecture award: Briese V, Richter D-U, Nebe B, 118. Congress Norddeutsche Gesellschaft für Gynäkologie (NGGG)
1996	Joachim-Jungius Price, awarded from the University of Rostock

Organization and Co-organization of 9 international congresses:

- THERMEC'2016 International Conference on Processing and Manufacturing of Advanced Materials, Symposium "Biomimetic Materials, Nanostructured Biomaterials & Biological Interactions", Graz
- 5th International Symposium Interface Biology of Implants (IBI), Rostock-Warnemünde 2015
- 4th IBI, Rostock-Warnemünde 2012
- THERMEC'2013 International Conference on Processing and Manufacturing of Advanced Materials, Symposium "Biomimetic Materials, Nanostructured Biomaterials & Biological Interactions", Las Vegas

- THERMEC“2009, Symposium “Functionalized Materials for Therapeutic Applications”, Berlin
- 3rd IBI, Rostock-Warnemünde 2009
- E-MRS Fall Meeting, Symposium J “Surface Functionalization and activation of biomaterials”, Warsaw 2006
- 2nd IBI, Rostock-Warnemünde 2006
- 1st IBI, Rostock-Warnemünde 2003

Reviewer for Wallenberg Academy Fellows 2015 Stockholm, for Volkswagen foundation, for Margarete-von-Wrangell stipendium, for Carl Zeiss foundation, for Reutlingen University for Applied Sciences Reviewer for German Research Society DFG: (i) Collaborative Research Center SFB TRR 67, and (ii) Research Units FOR 2180 (2014) und FOR 2165 (2014)

Publications

Scopus (07.07.2016): h-index 24, 142 international, peer-reviewed publications, cited 2306 times

a) *Articles which at the time of proposal submission have been published or officially accepted by publication outlets with scientific quality assurance, and book publications*

- [1] B. Finke, F. Luethen, K. Schroeder, P. D. Mueller, C. Bergemann, M. Frant, A. Ohl, and B. J. Nebe. “The effect of positively charged plasma polymerization on initial osteoblastic focal adhesion on titanium surfaces”. In: *Biomaterials* 28.30 (2007), pp. 4521–4534.
- [2] M. Hoentsch, R. Bussiahn, H. Rebl, C. Bergemann, M. Eggert, M. Frank, T. von Woedtke, and B. Nebe. “Persistent Effectivity of Gas Plasma-Treated, Long Time-Stored Liquid on Epithelial Cell Adhesion Capacity and Membrane Morphology”. In: *PloS one* 9.8 (2014), e104559.
- [3] F. Kunz, H. Rebl, A. Quade, C. Matschegewski, B. Finke, and J. Nebe. “Osteoblasts with impaired spreading capacity benefit from the positive charges of plasma polymerised allylamine”. In: *Eur. Cell. Mater* 29 (2015), pp. 177–189.
- [4] F. Lüthen, R. Lange, P. Becker, J. Rychly, U. Beck, and J. B. Nebe. “The influence of surface roughness of titanium on β 1-and β 3-integrin adhesion and the organization of fibronectin in human osteoblastic cells”. In: *Biomaterials* 26.15 (2005), pp. 2423–2440.
- [5] C. Matschegewski, S. Staehlke, R. Loeffler, R. Lange, F. Chai, D. P. Kern, U. Beck, and B. J. Nebe. “Cell architecture–cell function dependencies on titanium arrays with regular geometry”. In: *Biomaterials* 31.22 (2010), pp. 5729–5740.
- [6] C. Moerke, P. Mueller, and B. Nebe. “Attempted caveolae-mediated phagocytosis of surface-fixed micro-pillars by human osteoblasts”. In: *Biomaterials* 76 (2016), pp. 102–114.
- [7] J. B. Nebe, L. Müller, F. Lüthen, A. Ewald, C. Bergemann, E. Conforto, and F. A. Müller. “Osteoblast response to biomimetically altered titanium surfaces”. In: *Acta biomaterialia* 4.6 (2008), pp. 1985–1995.
- [8] J. Nebe, F. Luethen, R. Lange, and U. Beck. “Interface interactions of osteoblasts with structured titanium and the correlation between physicochemical characteristics and cell biological parameters”. In: *Macromolecular bioscience* 7.5 (2007), pp. 567–578.
- [9] H. Rebl, B. Finke, R. Lange, K.-D. Weltmann, and J. B. Nebe. “Impact of plasma chemistry versus titanium surface topography on osteoblast orientation”. In: *Acta biomaterialia* 8.10 (2012), pp. 3840–3851.
- [10] S. Staehlke, A. Koertge, and B. Nebe. “Intracellular calcium dynamics dependent on defined microtopographical features of titanium”. In: *Biomaterials* 46 (2015), pp. 48–57.

b) *Other publications*

c) *Patents, subdivided into pending and issued*

- [11] C. Bergemann, H. Hansmann, F. Kunz, B. Nebe, V. Weissmann, and J. Wetzel. “JPT-3D-Cellnyzer (Cell reactor)”. Pat. DE 10 2010 064 098.0.
- [12] R. Guthoff, J. Rychly, R. Beck, and B. Nebe. “New pharmaceutical applications of Mibefradil in the surgical ophthalmology”. Pat. DE 199 54 788, A61K 31/4184. 2006.01.

Projects with External Funds since 2011

Funder	ID Number	Title	Sum ¹	Duration
BMBF	13GW0109D	KMU innovative: Medicine Technology: Uro-antibak joint research project: "Temporary implants and instruments for urological applications with antibacterial and incrustation-inhibiting polymer surfaces"	510 T€	2016 – 2019
DFG	15057/1,2	GRK: "Analysis and simulation of electrical interactions of implants with bio-systems" (welisa), spokesperson U. van Rienen; TP A-4 + E-4: B. Nebe: "Influence of topographical and chemical surface characteristics (cell adhesion and signalling)"	475 T€	2008 – 2017
BMBF	13N12105	CEMOSTOBAS: "Bioactive implants: Cell biological and microbiological characteristics and animal experiments", joint research project B. Nebe, R. Bader et al.	78 T€	2012 – 2016
Industry	-	"Coatings and cell biological response", subcontracted work	50 T€	2013 – 2015
University Medical Center Rostock, FORUN program	-	"PlasmaBiomedicine: Physical plasma in regenerative medicine" Awarded to prepare a joint research project (DFG)	150 T€	2013 – 2015
Industry	-	Bilateral research with the companies VITA Zahntechnik, DOT GmbH, Carl Zeiss Meditec Company, Eppendorf Polymere GmbH	373 T€	2008 – 2015
BMBF	13N9775, 13N11183	Excellence project, Campus PlasmaMed, spokesperson: K-D. Weltmann; TP PlasmaImp: "Plasma chemical modifications of biological surfaces for bone implants", joint research project B. Nebe, R. Bader, et al.	482 T€	2008 – 2013
DFG	NE560/7-1,7-2	"Influence of micro- and nano-structured titanium surfaces on the biosystem: Mathematic modelling on the basis of systematic experimental investigations", joint research project B. Nebe, U. Beck, D. Kern	350 T€	2008 – 2012
Deutsche Krebshilfe Mildred Scheel	107822	"Molecular and cell biological analysis to mechanisms of action of established and potential phytoestrogens as precondition for the development of strategies for tumor prevention and therapy", joint research project: B. Nebe, B. Piechulla, V. Briese, U. Kragl et al.	118 T€	2009 – 2012
Federal state M-V and EU	ESF: V220-630-08-FMV-S-009 EFRE: V220-630-08-TFMV-F-009	Joint research project tissue regeneration GEREMA: B. Nebe, R. Bader, J. Gimsa, E.-D. Klinkenberg, et al. Nebe TP: VOCELL "Regulation of cell physiology in 3D-scaffolds"	502 T€	2008 – 2011

Completed Dissertations since 2011

¹ Share of the professorial chair

Name	Title	Year
Caroline Mörke	Caveolae-mediated phagocytosis of biomaterial surface structures by human osteoblasts (Dr. rer. nat.)	2016
Henrike Rebl	Osteoblast physiology and morphology on cell adhesive plasma-polymerized allylamine and ethylene diamine layers (Dr. rer. nat.)	2015
Maxi Höntsch	Cell physiological investigations on epithelial cell attachment, viability and tight junction formation in vitro by using an atmospheric pressure argon plasma (Dr. rer. nat.)	2014
Susanne Stähle	Interaction of human osteoblasts with geometrically structured implant surfaces – Cell architecture and signal transduction (Dr. rer. hum.)	2014
Claudia Matschegewski	Analysis of initial adhesion mechanisms of human osteoblasts in dependence of physico-chemical surface characteristics of defined micro structured titanium surfaces (Dr. rer. nat.)	2013