

Prof. Dr. med. Richard H.W. Funk



Persönliche Daten

1973-1979	Studium der Medizin, Universität Erlangen-Nürnberg
1976-1979	Promotion, Universität Erlangen-Nürnberg
1980	Wissenschaftlicher Mitarbeiter, Institut für Anatomie, Universität Erlangen-Nürnberg
1981-1982	Millitärdienst als Praktischer Arzt in Regensburg
1982-1986	Assistant professor, University Erlangen-Nürnberg
1986	Habilitation in Anatomie, Dr. med. habil., Universität Erlangen Nürnberg
1988	Professur für Anatomie, Universität Erlangen-Nürnberg
1994 - present	Leiter des Instituts für Anatomie an der Medizinischen Fakultät Carl-Gustav-Carus, Technische Universität Dresden

andere akademische Positionen

1999-2003	Prodekan der Medizinischen Fakultät Carl-Gustav-Carus, Technische Universität Dresden
2000-2006	Vorstandsmitglied der Anatomischen Gesellschaft (Anatomical Society, international)
2004-present	Fachkollegiat der DFG "Grundlagen der Biologie und Medizin, Anatomie"
2009	Kurator am Fraunhofer Institut für Elektrostrahl- und Plasmatechnik (FEP)
April 2010	Mitglied des Senats der Technischen Universität Dresden

Lehre

Makroskopische Anatomie, Allgemeine Anatomie, Embryologie, Neuroanatomie, Histologie

Forschungsprojekte

frühere:	<u>(Funktionelle Morphologie des Gefäßsystems im vorderen Auge</u> (http://www.funk2.fhnw-funk2)
aktuelle:	<u>(Nervenzellen, Retina und Auge</u> (http://www.fhnw-funk2.fhnw-funk2) <u>(Physical factors influencing the cell</u> (http://www.fhnw-funk2.fhnw-funk2) institut/beschaeftigte/rhwfunk3)

Ausgewählte Publikationen

01. Ozkucur N, Monsees TK, Perike S, Do HQ, Funk RH

Local calcium elevation and cell elongation initiate guided motility in electrically stimulated osteoblast-like cells. PLoS One. 2009 Jul 3;4(7):e6131. PubMed PMID: 19584927; PubMed Central PMCID: PMC2702840

02. Funk RH, Monsees T, Ozkucur N

Electromagnetic effects - From cell biology to medicine.

Prog Histochem Cytochem. 2009;43(4):177-264. Epub 2008 Sep 18. Review. PubMed PMID: 19167986

03. Knels L, Valtink M, Roehlecke C, Lupp A, de la Vega J, Mehner M, Funk RH
Blue light stress in retinal neuronal (R28) cells is dependent on wavelength range and irradiance.
Eur J Neurosci. 2011 Aug;34(4):548-58. doi: 10.1111/j.1460-9568.2011.07790.x. PubMed PMID: 21781192
04. Ozkucur N, Perike S, Sharma P, Funk RH
Persistent directional cell migration requires ion transport proteins as direction sensors and membrane potential differences in order to maintain directedness.
BMC Cell Biol. 2011; Jan 22;12:4. PubMed PMID: 21255452; PubMed Central PMCID: PMC3042415.
05. Aryasomayajula A, Derix J, Perike S, Gerlach G, Funk RH
DC microelectrode array for investigating the intracellular ion changes.
Biosens Bioelectron. 2010; Dec 15;26(4):1268-72. Epub 2010 Jul 6. PubMed PMID: 20656468.
06. Pan-Montojo F, Anichtchik O, Dening Y, Knels L, Pursche S, Jung R, Jackson S, Gille G, Spillantini MG, Reichmann H, Funk RH
Progression of Parkinson's disease pathology is reproduced by intragastric administration of rotenone in mice.
PLoS One. 2010 Jan 19;5(1):e8762; PubMed PMID: 20098733
07. Knels L, Worm M, Wendel M, Roehlecke C, Kniep E, Funk RH
Effects of advanced glycation end products-inductor glyoxal and hydrogen peroxide as oxidative stress factors on rat retinal organ cultures and neuroprotection by UK-14,304
J Neurochem. 2008 Aug;106(4):1876-87. Epub 2008 Jul 4; PubMed PMID: 18624919
08. Roehlecke C, Schaller A, Knels L, Funk RH
The influence of sublethal blue light exposure on human RPE cells.
Mol Vis. 2009 Sep 21;15:1929-38; PubMed PMID: 19784391; PubMed Central PMCID: PMC2751800
09. Kniep EM, Roehlecke C, Ozkucur N, Steinberg A, Reber F, Knels L, Funk RH
Inhibition of apoptosis and reduction of intracellular pH decrease in retinal neural cell cultures by a blocker of carbonic anhydrase.
Invest Ophthalmol Vis Sci. 2006 Mar;47(3):1185-92; PubMed PMID: 16505057
10. Krafft C, Knetschke T, Funk RH, Salzer R
Studies on stress-induced changes at the subcellular level by Raman microspectroscopic mapping.
Anal Chem. 2006 Jul 1;78(13):4424-9; PubMed PMID: 16808450
11. Roehlecke C, Schumann U, Ader M, Brunssen C, Bramke S, Morawietz H, Funk RH
Stress reaction in outer segments of photoreceptors after blue light irradiation.
PLoS One. 2013 Sep 11;8(9):e71570. doi: 10.1371/journal.pone.0071570. eCollection 2013
12. Pan-Montojo F, Schwarz M, Winkler C, Arnhold M, O'Sullivan GA, Pal A, Said J, Marsico G, Verbavatz JM, Rodrigo-Angulo M, Gille G, Funk RH, Reichmann H
Environmental toxins trigger PD-like progression via increased alpha-synuclein release from enteric neurons in mice.
Sci Rep. 2012;2:898. doi: 10.1038/srep00898. Epub 2012 Nov 30
13. Funk RH
Functional Differences in the Microcirculatory Units of the Eye.
Klin Monbl Augenheilkd. 2015 Jan 14. [Epub ahead of print] German. PubMed PMID: 25587887
14. Roehlecke C, Schumann U, Ader M, Brunssen C, Bramke S, Morawietz H, Funk RH
Stress reaction in outer segments of photoreceptors after blue light irradiation.
PLoS One. 2013 Sep 11;8(9):e71570. doi: 10.1371/journal.pone.0071570. eCollection 2013. PubMed PMID: 24039718; PubMed Central PMCID: PMC3770596
15. Wittig D, Jászai J, Corbeil D, Funk RH
Immunohistochemical localization and characterization of putative mesenchymal stem cell markers in the retinal

capillary network of rodents.

Cells Tissues Organs. 2013;197(5):344-59. doi: 10.1159/000346661. Epub 2013 Apr 3. PubMed PMID: 23571553

16. Pan-Montojo F, Funk RH

Implications of Parkinson's disease pathophysiology for the development of cell replacement strategies and drug discovery in neurodegenerative diseases.

CNS Neurol Disord Drug Targets. 2012 Nov 1;11(7):907-20. Review. PubMed PMID: 23131153

17. Ozkucur N, Song B, Bola S, Zhang L, Reid B, Fu G, Funk RH, Zhao M

NHE3 phosphorylation via PKC η marks the polarity and orientation of directionally migrating cells.

Cell Mol Life Sci. 2014 Dec;71(23):4653-63. doi: 10.1007/s00018-014-1632-1. Epub 2014 May 1. PubMed PMID: 24788043

18. Perike S, Özkucur N, Sharma P, Staroske W, Bläsche R, Barth K, Funk RH

Phospho-NHE3 forms membrane patches and interacts with beta-actin to sense and maintain constant direction during cell migration.

Exp Cell Res. 2014 May 15;324(1):13-29. doi: 10.1016/j.yexcr.2014.03.005. Epub 2014 Mar 19. Erratum in: Exp Cell Res. 204 Aug 1;326(1):185. PubMed PMID: 24657527

19. Wittig D, Wang X, Walter C, Gerdes HH, Funk RH, Roehlecke C

Multi-level communication of human retinal pigment epithelial cells via tunneling nanotubes

PLoS One. 2012;7(3):e33195. doi: 10.1371/journal.pone.0033195. Epub 2012 Mar 22. PubMed PMID: 22457742; PubMed Central PMCID: PMC3310865

Torsten Schwalm

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