

Journal Publications

- Kankeu, C., Clarke, K., Passante, E. and Huber H.J., Doxorubicin-Induced Chronic Dilated Cardiomyopathy - The apoptosis hypothesis revisited, *J. Mol. Medicine* 2016
- Veltman, D., Laeremans, T., Passante, E. and Heinrich Huber, H.J., Signal transduction analysis suggests that a shift from downstream to upstream NLRP3-inflammasome pathway modulation can attenuate inflammation after cellular damage, *Journal of Theoretical Biology* 2016
- Besenhard, M., Jarzabek, M., O'Farrell, A., Callanan, J., Prehn, J., Byrne, A., Huber, H. (2016). Modelling tumour cell proliferation from vascular structure using tissue decomposition into avascular elements. *Journal of Theoretical Biology*, 2016
- Niamh M C Connolly, Beatrice D'Orsi, Naser Monsefi, Heinrich J Huber, Jochen H M Prehn: *Computational Analysis of AMPK-Mediated Neuroprotection Suggests Acute Excitotoxic Bioenergetics and Glucose Dynamics Are Regulated by a Minimal Set of Critical Reactions*. PLoS ONE 02/2016; 11(2):e0148326. DOI:10.1371/journal.pone.0148326
- Heinrich J Huber, Paul Holvoet: *Exosomes: emerging roles in communication between blood cells and vascular tissues during atherosclerosis*. Current opinion in lipidology 08/2015; 26(5). DOI:10.1097/MOL.0000000000000214
- B Van der Schueren, R Vangoitsenhoven, B Geeraert, D De Keyzer, M Hulsmans, M Lannoo, H J Huber, C Mathieu, P Holvoet: *Low cytochrome oxidase 4I1 links mitochondrial dysfunction to obesity and type 2 diabetes in humans and mice*. International journal of obesity (2005) 04/2015; 39(8). DOI:10.1038/ijo.2015.58
- L Flanagan, A U Lindner, C de Chaumont, J Kehoe, J Fay, O Bacon, S Toomey, H J Huber, B T Hennessy, E W Kay, D A McNamara, J H M Prehn: *BCL2 protein signalling determines acute responses to neoadjuvant chemoradiotherapy in rectal cancer*. Journal of Molecular Medicine 11/2014; 93(3). DOI:10.1007/s00109-014-1221-7
- Eric Van Cutsem, Gerald Prager, Daniel Sargent, Annette T. Byrne, Heinrich J. Huber, Gary Middleton, Khurum Khan, Leticia De, Thomas Seufferlein: *Biomarker-driven Studies in Metastatic Colorectal Cancer (mCRC): Challenges and Opportunities*. Journal of OncoPathology 11/2014; the journal of oncopathology 2:4 december 2014(4). DOI:10.13032/tjop.2052-5931.100113.
- Niamh M C Connolly, Heiko Düssmann, Ujval Anilkumar, Heinrich J Huber, Jochen H M Prehn: *Single-Cell Imaging of Bioenergetic Responses to Neuronal Excitotoxicity and Oxygen and Glucose Deprivation*. Frontiers in Neuroscience 07/2014; 34(31):10192-10205. DOI:10.1523/JNEUROSCI.3127-13.2014
- Heinrich J Huber, Ross G McKiernan, Jochen H M Prehn: *Harnessing system models of cell death signalling for cytotoxic chemotherapy: Towards personalised medicine approaches?*. Journal of Molecular Medicine 01/2014; 92(3). DOI:10.1007/s00109-014-1126-5
- P Weisová, S P Alvarez, S M Kilbride, U Anilkumar, B Baumann, J Jordán, T Bernas, H J Huber, H Düssmann, J H M Prehn: *Latrepirdine is a potent activator of AMP-activated protein kinase and reduces neuronal excitability*. Translational Psychiatry 10/2013; 3(10):e317. DOI:10.1038/tp.2013.92
- Andreas U Lindner, Jochen H M Prehn, Heinrich J Huber: *The indirect activation model of mitochondrial outer membrane permeabilisation (MOMP) initiation requires a trade-off between robustness in the absence of and sensitivity in the presence of stress*. Molecular BioSystems 07/2013; 9(9). DOI:10.1039/c3mb70076c
- AC Murphy, B Weyhenmeyer, J Schmid, S M Kilbride, M Rehm, H J Huber, C Senft, J Weissenberger, V Seifert, M Dunst, M Mittelbronn, D Kögel, J H M Prehn, B M Murphy: *Activation of executioner caspases is a predictor of progression-free survival in glioblastoma patients: A systems medicine approach*. Cell Death & Disease 05/2013; 4(5):e629. DOI:10.1038/cddis.2013.157

Fernando López-Caamal, Richard H Middleton, Heinrich J Huber: *Equilibria and stability of a class of positive feedback loops: Mathematical analysis and its application to caspase-dependent apoptosis*. Journal of Mathematical Biology 01/2013; 68(3). DOI:10.1007/s00285-013-0644-z

Andreas U Lindner, Caoimhín G Concannon, Gerhardt J Boukes, Mary D Cannon, Fabien Llambi, Deborah Ryan, Karen Boland, Joan Kehoe, Deborah A McNamara, Frank Murray, Elaine W Kay, Suzanne Hector, Douglas R Green, Heinrich J Huber, Jochen H M Prehn: *Systems Analysis of BCL2 Protein Family Interactions Establishes a Model to Predict Responses to Chemotherapy*. Cancer Research 01/2013; 73(2):519-528. DOI:10.1158/0008-5472.CAN-12-2269 (Shared Senior publication)

Jasmin Schmid, Heiko Dussmann, Gerhardt J Boukes, Lorna Flanagan, Andreas U Lindner, Carla L O'Connor, Markus Rehm, Jochen H M Prehn, Heinrich J Huber: *Systems Analysis of Cancer Cell Heterogeneity in Caspase-dependent Apoptosis Subsequent to Mitochondrial Outer Membrane Permeabilization*. Journal of Biological Chemistry 10/2012; 287(49). DOI:10.1074/jbc.M112.411827

Crina-Maria Ionescu, Radka Svobodová Vařeková, Jochen H M Prehn, Heinrich J Huber, Jaroslav Koča: *Charge Profile Analysis Reveals That Activation of Pro-apoptotic Regulators Bax and Bak Relies on Charge Transfer Mediated Allosteric Regulation*. PLoS Computational Biology 06/2012; 8(6):e1002565. DOI:10.1371/journal.pcbi.1002565

David Sehnal, Radka Svobodová Vařeková, Heinrich J Huber, Stanislav Geidl, Crina-Maria Ionescu, Michaela Wimmerová, Jaroslav Koča: *SiteBinder – an improved approach for comparing multiple protein structural motifs. Case studies on biologically important motifs*. Journal of Cheminformatics 05/2012; 4(1). DOI:10.1186/1758-2946-4-S1-P59

D Davila, N M C Connolly, H Bonner, P Weisová, H Dussmann, C G Concannon, H J Huber, J H M Prehn: *Two-step activation of FOXO3 by AMPK generates a coherent feed-forward loop determining excitotoxic cell fate*. Cell death and differentiation 04/2012; 19(10):1677-88. DOI:10.1038/cdd.2012.49

Maike A Laussmann, Egle Passante, Christian T Hellwig, Bartłomiej Tomiczek, Lorna Flanagan, Jochen H M Prehn, Heinrich J Huber, Markus Rehm: *Proteasome Inhibition Can Impair Caspase-8 Activation upon Submaximal Stimulation of Apoptotic Tumor Necrosis Factor-related Apoptosis Inducing Ligand (TRAIL) Signaling*. Journal of Biological Chemistry 03/2012; 287(18):14402-11. DOI:10.1074/jbc.M111.304378

David Sehnal, Radka Svobodová Vařeková, Heinrich J Huber, Stanislav Geidl, Crina-Maria Ionescu, Michaela Wimmerová, Jaroslav Koča: *SiteBinder: An Improved Approach for Comparing Multiple Protein Structural Motifs*. Journal of Chemical Information and Modeling 02/2012; 52(2):343-59. DOI:10.1021/ci200444d

Fernando López-Caamal, Míriam R García, Richard H Middleton, Heinrich J Huber: *Positive feedback in the Akt/mTOR pathway and its implications for growth signal progression in skeletal muscle cells: An analytical study*. Journal of Theoretical Biology 02/2012; 301:15-27. DOI:10.1016/j.jtbi.2012.01.026

Heinrich J Huber, Niamh M C Connolly, Heiko Dussmann, Jochen H M Prehn: *A structured approach to the study of metabolic control principles in intact and impaired mitochondria*. Molecular BioSystems 01/2012; 8(3):828-42. DOI:10.1039/c2mb05434e

Suzanne Hector, Markus Rehm, Jasmin Schmid, Joan Kehoe, Niamh McCawley, Patrick Dicker, Frank Murray, Deborah McNamara, Elaine W Kay, Caoimhín G Concannon, Heinrich J Huber, Jochen H M Prehn: *Clinical application of a systems model of apoptosis execution for the prediction of colorectal cancer therapy responses and personalisation of therapy*. Gut 11/2011; 61(5):725-33. DOI:10.1136/gutjnl-2011-300433

Radka Svobodova Varekova, Stanislav Geidl, Crina-Maria Ionescu, Ondrej Skrehota, Michal Kudera, David Sehnal, Tomás Bouchal, Ruben Abagyan, Heinrich J Huber, Jaroslav Koca: *Predicting pK(a) Values of Substituted Phenols from Atomic Charges: Comparison of Different Quantum Mechanical Methods and Charge*

Distribution Schemes. Journal of Chemical Information and Modeling 08/2011; 51(8):1795-806.

DOI:10.1021/ci200133w

Heinrich J Huber, Heiko Dussmann, Seán M Kilbride, Markus Rehm, Jochen H M Prehn: Glucose metabolism determines resistance of cancer cells to bioenergetic crisis after cytochrome-c release. Mol Syst Biol 7:470. Molecular Systems Biology 03/2011; 7(1):470. DOI:10.1038/msb.2011.2

Heinrich J Huber, Heiko Dussmann, Jakub Wenus, Seán M Kilbride, Jochen H M Prehn: Mathematical modelling of the mitochondrial apoptosis pathway. Biochimica et Biophysica Acta 10/2010; 1813(4):608-15. DOI:10.1016/j.bbamcr.2010.10.004

Liam P Tuffy, Caoimhín G Concannon, Beatrice D'Orsi, Matthew A King, Ina Woods, Heinrich J Huber, Manus W Ward, Jochen H M Prehn: Characterization of Puma-Dependent and Puma-Independent Neuronal Cell Death Pathways following Prolonged Proteasomal Inhibition. Molecular and Cellular Biology 10/2010; 30(23):5484-501. DOI:10.1128/MCB.00575-10

Perrine Paul, Heiko Dussmann, Tytus Bernas, Heinrich Huber, Dimitrios Kalamatianos: Automatic noise quantification for confocal fluorescence microscopy images. Computerized medical imaging and graphics: the official journal of the Computerized Medical Imaging Society 05/2010; 34(6):426-34. DOI:10.1016/j.compmedimag.2010.04.001

Heinrich J Huber, Maike A Laussmann, Jochen H M Prehn, Markus Rehm: Diffusion is capable of translating anisotropic apoptosis initiation into a homogeneous execution of cell death. BMC Systems Biology 02/2010; 4(9):9. DOI:10.1186/1752-0509-4-9

Jakub Wenus, Heiko Düssmann, Perrine Paul, Dimitrios Kalamatianos, Markus Rehm, Peter Wellstead, Jochen Prehn, Heinrich Huber: ALISSA: An automated live-cell imaging system for signal transduction analyses. BioTechniques 12/2009; 47(6):1033-40. DOI:10.2144/000113247

H Düssmann, M Rehm, C G Concannon, S Anguissola, M Würstle, S Kacmar, P Völler, H J Huber, J H M Prehn: Single-cell quantification of Bax activation and mathematical modeling suggest pore formation on minimal mitochondrial Bax accumulation. Cell Death Differ. Cell death and differentiation 10/2009; 17(2):278-90. DOI:10.1038/cdd.2009.123

M Rehm, H J Huber, C T Hellwig, S Anguissola, H Dussmann, J H M Prehn: Dynamics of outer mitochondrial membrane permeabilization during apoptosis. Cell Death Differ. Cell death and differentiation 02/2009; 16(4):613-23. DOI:10.1038/cdd.2008.187

Carla L. O'Connor, Sergio Anguissola, Heinrich J. Huber, Heiko Dussmann, Jochen H.M. Prehn, Markus Rehm: Intracellular signaling dynamics during apoptosis execution in the presence or absence of X-linked-inhibitor-of-apoptosis-protein. Biochim Biophys Acta. Biochimica et Biophysica Acta 10/2008; 1783(10-1783):1903-1913. DOI:10.1016/j.bbamcr.2008.05.025

Heinrich J Huber, Martin Plchut, Petronela Weisová, Heiko Düssmann, Jakub Wenus, Markus Rehm, Manus W Ward, Jochen H M Prehn: TOXI-SIM-A simulation tool for the analysis of mitochondrial and plasma membrane potentials. J Neurosci Methods. Journal of Neuroscience Methods 10/2008; 176(2):270-5. DOI:10.1016/j.jneumeth.2008.09.003

Radka Svobodová Vareková, Ivan Bradáć, Martin Plchút, Michal Skrdla, Michael Wacenovsky, Helmuth Mahr, Georg Mayer, Herbert Tanner, Hermann Brugger, Josef Withalm, Peter Lederer, Heinrich Huber, Gerhard Gierlinger, Ronald Graf, Hakim Tafer, Ivo Hofacker, Peter Schuster, Martin Polcik: www.rnaworkbench.com: A new program for analyzing RNA interference. Computer Methods and Programs in Biomedicine 05/2008; 90(1):89-94. DOI:10.1016/j.cmpb.2007.12.001

Manus W Ward, Heinrich J Huber, Petronela Weisová, Heiko Düssmann, David G Nicholls, Jochen H M Prehn: Ward MW, Huber HJ, Weisová P, Düssmann H, Nicholls DG, Prehn JH Mitochondrial and plasma membrane

potential of cultured cerebellar neurons during glutamate-induced necrosis, apoptosis, and tolerance. *J Neurosci* 27:8238-8249. The Journal of Neuroscience : The Official Journal of the Society for Neuroscience 09/2007; 27(31):8238-49. DOI:10.1523/JNEUROSCI.1984-07.2007

Heinrich J Huber, Markus Rehm, Martin Plchut, Heiko Düssmann, Jochen H M Prehn: *APOPTO-CELL - A simulation tool and interactive database for analyzing cellular susceptibility to apoptosis.* Bioinformatics 04/2007; 23(5):648-50. DOI:10.1093/bioinformatics/btl684

Manus W Ward, Heinrich J Huber, Petronela Weisová, Heiko Düssmann, David G Nicholls, Jochen H M Prehn: *Neurobiology of Disease Mitochondrial and Plasma Membrane Potential of Cultured Cerebellar Neurons during Glutamate-Induced Necrosis, Apoptosis, and Tolerance.* (Shared Senior Authorship)

Markus Rehm, Heinrich J Huber, Heiko Dussmann, Jochen H M Prehn: Rehm M, Huber HJ, Dussmann H, Prehn JH.. Systems analysis of effector caspase activation and its control by X-linked inhibitor of apoptosis protein. *EMBO J* 25: 4338-4349. The EMBO Journal 10/2006; 25(18):4338-49.
DOI:10.1038/sj.emboj.7601295 (Shared First Authorship)

Journal Publications (before industry)

H Huber, H Leeb: *Spin-orbit potentials from inversion: Relativistic versus nonrelativistic schemes.* *Journal of Physics G Nuclear and Particle Physics* 12/1998; 24(7):1287. DOI:10.1088/0954-3899/24/7/010

H. Huber, H. Leeb: *An exact inversion method for the determination of spin-orbit potentials from scattering data.* *European Physical Journal A* 01/1998; 1(2):221-228. DOI:10.1007/s100500050051

H. Huber, D. R. Lun, L. J. Allen, K. Amos: *Determination of scattering phase shifts via the generalized unitarity theorem for spin-orbit interactions.* *Physical Review A* 03/1997; 55(3). DOI:10.1103/PhysRevA.55.2015

H Huber, D. R. Lun, L. J. Allen, K Amos: *Analyticity and unitarity as constraints to obtain scattering phase shifts and an application to e-He scattering.* *Physical Review A* 09/1996; 54(2):1363-1371.
DOI:10.1103/PhysRevA.54.1363

Book Chapters

Jochen H. M. Prehn, Heinrich J. Huber, Carla O'Connor: *Systems Biology of Apoptosis.* Systems Biology of Apoptosis, 01/2012: pages 85-99; , ISBN: 978-1-4614-4008-6

H Huber, G Gomez Estrada, H Dussmann, C O 'connor, M Rehm: *Extending the explanatory power of live cell imaging by computationally modelling the execution of apoptotic cell death.* Formatex publishing, 2008

Heinrich Huber, Eric Bullinger, Markus Rehm: *Systems Biology Approaches to the Study of Apoptosis.* Essentials of Apoptosis, 12/2008: pages 283-297;

Patents

Gugerell, Martin, Dr Heinrich Johann Huber, and Albert Kain. 'Method for Setting up and Providing Services in a Mobile Communications Network and Administration Device for Carrying Out the Method', March 15, 2006. <http://www.freepatentsonline.com/EP1635583.html>.

Gugerell, Martin, and Heinrich Huber. 'Method and System for Distribution of Text-Based Information Services', December 7, 2007. <http://patentscope.wipo.int/search/en/WO2007137975>.

Gugerell, Martin, Heinrich Huber, Erwin Postmann, and Ulrich Weiss. 'Connection Setup for the Exchange of Data of an IP-Based Service', January 6, 2006. <https://www.google.com/patents/US20080247342>

Prehn, Jochen, Heinrich Huber, and Markus Rehm. 'A Computer-Implemented Method for the Prediction of Cancer Response to Genotoxic Chemotherapy and Personalised Neoadjuvant Treatments, March 1, 2013, <https://www.google.com/patents/US20140221232>

Prehn, Jochen, Andreas Lindner, Heinrich Huber. 'Dose-response medical outcome model predictor system and method, April 1, 2015, <https://www.google.com/patents/US20140221232>

Conference Proceedings

Perrine Paul, Dimitrios Kalamatianos, Heiko Duessmann, Heinrich Huber: *Automatic quality assessment for fluorescence microscopy images*. Proceedings of the 8th IEEE International Conference on Bioinformatics and Bioengineering, BIBE 2008, October 8-10, 2008, Athens, Greece; 10/2008

Helmut Leeb, Heinrich Huber, Harald Lehninger: *Inverse scattering schemes for the Dirac equation at fixed energy. American Physical Society, Division of Nuclear Physics Meeting*. American Physical Society, Division of Nuclear Physics Meeting, 28-31 October 1998 (art.nr. B6.07)

Gruen K, Huber H, Jank J, Leeb H, Oberhummer H, 3. International symposium on nuclear astrophysics; Assergi (Italy); 8-13 Jul 1994, https://inis.iaea.org/search/search.aspx?orig_q=RN:27023918

Huber, H.; Krauss, H.; Krausmann, E.; Oberhummer, H.; Rauscher, T., Direct radiation capture of neutrons on nuclei with low level density, 43. Annual convention of the Austrian Physical Society, Graz 1993

Technical Reports

J Pollich, F Sembowski, B Haugset, T E Fagri, H I Myrhaug, M Mikalsen, S L Tomassen, T C Lech, R Engels, A K Petersen, H Huber, P Markovics, M Yakici, A Göker, R Hu B. Bierig, N Whitehead: *AmbieSense Reference Information Model*. Affiliation: The Robert Gordon University