

Peer Review Publications

M. Bessa-Gonçalves, A.M. Silva, J.P.Brás, **H. Helmholz**, B.J.C. Luthringer-Feyerabend, R. Willumeit-Römer, M.A. Barbosa, S.G. Santos. Fibrinogen and magnesium combination biomaterials modulate macrophage phenotype, NF- κ B signaling and crosstalk with mesenchymal stem/stromal cells. *Acta Biomaterialia* (2020).

M.D. Costantino, A. Schuster, **H. Helmholz**, A. Meyer-Rachner, R. Willumeit-Römer, B.J.C. Luthringer-Feyerabend (2020): Inflammatory response to magnesium-based biodegradable implant materials. *Acta Biomaterialia* 101:598-608

M. Omid, N. Ahmad Agha, A. Müller, F. Feyerabend, **H. Helmholz**, R. Willumeit-Römer, H. Schlüter, B.J.C. Luthringer-Feyerabend. Investigation of the impact of magnesium versus titanium implants on protein composition in osteoblast by label free quantification. *Metallomics* 2020;12(6):916-934.

H. Helmholz, B. J.C. Luthringer-Feyerabend, R. Willumeit-Römer (2019): Elemental mapping of biodegradable magnesium-based implants in bone and soft tissue by means of μ X-ray fluorescence analysis. *Journal of Analytical Atomic Spectrometry JAAS* 34:356-365

L.A. Moreno, M. Omid, M. Wurlitzer, B.J.C. Luthringer, **H. Helmholz**, H. Schlüter, R. Willumeit-Römer, A. Fugenschuh. Understanding Protein Networks using Vester's Sensitivity Model. *IEEE/ACM Transactions on Computational Biology and Bioinformatics* 2018:1-1.³

B. Zeller-Plumhoff., **H. Helmholz**, F. Feyerabend, T. Dose, F. Wilde, A. Hipp, F. Beckmann, R. Willumeit-Römer, J. U. Hammel. Quantitative characterization of degradation processes in situ by means of a bioreactor coupled flow chamber under physiological conditions using time-lapse SR μ CT. (2018) (Cover) *Materials and Corrosion* 69(3):298-306

H. Helmholz, Ch. Ruhnau, D. Pröfrock, B. Erbslöh, A. Prange, Seasonal and annual variations in physiological and biochemical responses from transplanted marine bioindicator species *Mytilus* spp. during a long term field exposure experiment *Science of the Total Environment* 565 (2016), 626-636

H. Helmholz, S. Lassen, Ch. Ruhnau, D. Pröfrock, B. Erbslöh, A. Prange, Investigation on the proteome response of transplanted blue mussel (*Mytilus* sp.) during a long term exposure experiment at differently impacted field stations in the German Bight (North Sea). *Marine Environmental Research* 110 (2015), 69-80 doi:10.1016/j.marenvres.2015.07.021

Ž. Strižak, D. Ivanković, D. Pröfrock, **H. Helmholz**, A-M. Cindrić, M. Erk, A. Prange, Characterization of the cytosolic distribution of priority pollutant metals and metalloids in the digestive gland cytosol of marine mussels: Seasonal and spatial variability. *Science of the Total Environment* 470-471 (2014), 159-170

S. Lassen, A. Wiebring, **H. Helmholz**, Ch. Ruhnau, A. Prange, Isolation of a Nav channel blocking polypeptide from *Cyanea capillata* medusae - A neurotoxin contained in fishing tentacle isorhizas. *Toxicon* 59 (2012), 610-616

- H. Helmholz**, A. Wiebring, S. Lassen, Ch. Ruhnau, Ch. Schütt, A. Prange Cnidom analysis combined with an in vitro evaluation of the lytic, cyto- and neurotoxic potential of *Cyanea capillata* (Cnidaria:Scyphozoa). *Scientia Marina* 76 (2012), 339-348 DOI: 10.3989/scimar.03381.16E
- H. Helmholz**, Z. Dong, Ch. Ruhnau, D. Liu, Investigation on fish gill cell toxicity and haemolytic activity of *Nemopilema nomurai* (Scyphozoa, Rhizostoma) from the northern Yellow Sea of China. *Current Topics in Toxicology* 7 (2011), 79-87
- S. Lassen, **H. Helmholz**, C. Ruhnau, A. Prange, A novel proteinaceous cytotoxin from the northern Scyphozoa *Cyanea capillata* (L.) with structural homology to cubozoan hemolysins. *Toxicon* 57 (2011), 721 – 729
- H. Helmholz**, Selective toxin-lipid membrane interactions of natural, haemolytic Scyphozoan toxin analyzed by surface plasmon resonance. *Biochimica et Biophysica Acta - Biomembranes* 1798 (2010), 1944-1952
- A. Wiebring, **H. Helmholz**, I. Sötje, S. Lassen, A. Prange, H. Tiemann, Development of a new micromanipulation method for the separation of different types of nematocysts utilizing laser catapulting. *Journal of Marine Biotechnology* 12 (2010) 308-317
- H. Helmholz**, B. Johnston, C. Ruhnau, A. Prange, Gill cell toxicity of northern boreal scyphomedusae *Cyanea capillata* and *Aurelia aurita* measured by an in vitro cell assay, *Hydrobiologia* 645 (2010) 223-234.
- A. Wiebring, **H. Helmholz**, S. Lassen, A. Prange, G. Jarms, Separation and analysis of different types of nematocysts from *Cyanea capillata* (L.) medusae, *Hydrobiologia* 645 (2010) 203-212.
- S. Lassen, **H. Helmholz**, C. Ruhnau, A. Prange, Characterisation of neurotoxic polypeptides from *Cyanea capillata* medusae (Scyphozoa), *Hydrobiologia* 645 (2010) 213-221.
- H. Helmholz**, S. Naatz, S. Lassen, A. Prange, Isolation of a cytotoxic glycoprotein from the Scyphozoa *Cyanea lamarckii* by lectin-affinity chromatography and characterization of molecule interactions by surface plasmon resonance, *Journal of Chromatography B* 871 (2008) 60-66.
- H. Helmholz**, C. Ruhnau, C. Schütt, A. Prange, Comparative study on the cell toxicity and enzymatic activity of two northern scyphozoan species *Cyanea capillata* (L.) and *Cyanea lamarckii* (Peron & Leslieur), *Toxicon* 50 (2007) 53-64.
- G. Butschak, U. Karsten, U. Schelhaas, H. Ott, A. Emmendorffer, B. Niemeyer, **H. Helmholz**, S. Goletz, Detection, isolation and partial characterization of an immunostimulating glycoprotein from *Rhodococcus fascians*, *International Immunopharmacology* 6 (2006) 1441-1450.
- H. Rosenfeld, J. Anilyte, **H. Helmholz**, J. Liesiene, P. Thiesen, B. Niemeyer, A. Prange, Comparison of modified supports on the base of glycoprotein interaction studies and of adsorption investigations, *Journal of Chromatography A* 1092 (2005) 76-88.
- H. Helmholz**, S. Cartellieri, L. He, P. Thiesen, B. Niemeyer, Process development in affinity separation of glycoconjugates with lectins as ligands, *Journal of Chromatography A* 1006 (2003) 127-135.

L.Z. He, S. Andre, H.C. Siebert, **H. Helmholz**, B. Niemeyer, H.J. Gabius, Detection of ligand- and solvent-induced shape alterations of cell-growth-regulatory human lectin galectin-1 in solution by small angle neutron and x-ray scattering, *Biophys. J.* 85 (2003) 511-524.

S. Cartellieri, O. Hamer, **H. Helmholz**, B. Niemeyer, One-step affinity purification of fetuin from fetal bovine serum, *Biotechnol. Appl. Biochem.* 35 (2002) 83-89.

S. Cartellieri, **H. Helmholz**, B. Niemeyer, Preparation and Evaluation of *Ricinus communis* Agglutinin Affinity Adsorbents Using Polymeric Supports, *Analytical Biochemistry* 295 (2001) 66-75.

L.-Z. He, V. Garamus, B. Niemeyer, **H. Helmholz**, R. Willumeit, Determination of micelle structure of octyl- β -glucoside in aqueous solution by small angle neutron scattering and geometric analysis, *Journal of Molecular Liquids* 89 (2000) 239-249.

H. Helmholz, P. Etoundi, U. Lindequist, Cultivation of the marine basidiomycete *Nia vibrissa* (Moore & Meyers), *Journal of Biotechnology* 70 (1999) 203-206.

U. Lindequist, C. Kusnick, **H. Helmholz**, K. Liberra, Neue Wirkstoffe aus Pilzen des Meeres, *Zeitschrift für Phytotherapie* 20 (1999) 29-36.

Book contributions

Helmholz H, Natural Substances of Marine Origin with Toxic Properties. in Quante M (et al. (eds): Persistent Pollution - Past, Present and Future. Chapter 17 (2011), 319-335

Miscellaneous publications (non Peer Review)

Helmholz H, Wichels A, Gerdt G, Screening for bioactive glycolipids in sponges from the Orkney Islands: *Biomolecular Engineering*, **20/2** (2003), 79

J. Anilyte, J. Liesiene, **H. Helmholz**, B. Niemeyer, Immobilization of Lectins on Cellulose Matrices Activated with Sodium Periodate, Proceedings of the Baltic Symposium, Jurmala, Latvia, 2003, 178 -182.

S. Cartellieri, **H. Helmholz**, B. Niemeyer, Long term stability of selective adsorbents for glycoconjugate separation. *Chemie Ingenieur Technik* **73** (2001), 733

L. He, **H. Helmholz**, B. Niemeyer, X. Luo A Diffusion Model for Affinity Adsorption of Glycoprotein on Immobilized Lectin in: K.-J. Bathe (ed.), Proceedings, First MIT Conference on Computational Fluid and Solid Mechanics, Cambridge, MA, USA, Volume **2** (2001), 1232 – 1235

S. Cartellieri, O. Braaß, **H. Helmholz**, Thiesen. P H, B. Niemeyer, Functionalization of Silica for the Immobilization of Lectins, *Biotechnology 2000, Berlin* **4** (2000) 79-81.

Selected oral presentations

Helmholz H: Trophic interactions and physiological characteristics of jellyfish. Sino-German Workshop on Coastal Zone Environment Yantai/CN 2009

Helmholz H, Johnston B, Ruhnau Ch, Lassen S, Prange A: In vitro-cell-based assays for the determination of toxic effects of northern scyphozoan species *Cyanea spec.* and *Aurelia aurita* ASLO Aquatic Science Meeting, Nice 2009

Helmholz H and Prange A: Toxic components in the venom of the Lion`s mane jellyfish *Cyanea spec.* 2nd International Symposium on Jellyfish Blooms, Gold Coast/Aus 2007

Helmholz H: Natural substances of marine origin with toxic properties. 5th GKSS Summer School of Environmental Research 2007

Helmholz H, Naatz S, Lassen S and Prange A: Isolation of a cytotoxic glycoprotein from the Scyphozoa *Cyanea lamarckii* by lectin affinity chromatography and characterization of molecule interactions by surface plasmon resonance. Biacore Anwender Symposium München 2007

Helmholz H and Niemeyer B (2002): Silica- and Polymer-based Lectin Adsorbents for Glycoconjugate Separation. XXI International Carbohydrate Symposium, Cairns/Aus

Helmholz H, Cartellieri S and Niemeyer B: Preparation of Biospecific Adsorbents for the Purification of Bioactive Glycoproteins and Glycolipids 3rd Workshop on Functional Materials: Biophysical Properties of Glycolipids and Related Problems, Hamburg 2000

Helmholz H : Biologisch aktive Glycolipide aus marinen Organismen. Workshop Adsorbate und Adsorbentien. Helmut-Schmidt-Universität, Universität der Bundeswehr Hamburg 1999

Selected poster presentations

H. Helmholz, B. Luthringer – Feyerabend, O. Penate – Medina, O. Will, R. Willumeit – Römer. Novel imaging techniques to connect performance and assessment of Mg-based implants in vivo Jahrestagung der Deutschen Gesellschaft für Biomaterialien, Braunschweig 2018

H. Helmholz, M. Omid, B. Luthringer, H. Schlüter, R. Willumeit-Römer. Effects of Magnesium-based, biodegradable implants on the protein pattern of human mesenchymal stem cells under osteogenic differentiation Proteomic Forum 2017, Potsdam D

Helmholz H, Strižak Ž, Ruhnau Ch, Erk M, Prange A Utilization of Proteomic Techniques for the Identification of Potential Contaminant-related Biomarker – Environmental Proteomics Proteomic Forum 2013, Berlin D

Helmholz H, Rieker E, Asendorf N, Pröfrock D, Lassen S, Prange A Proteom analysis of Blue Mussel tissue by two dimensional gel electrophoresis and MALDI – MS 6th SETAC world conference 2012, Berlin, D

Helmholz H, Erk M, Pröfrock D, Strižak Ž, Ivanković D, Prange A Metal exposure and associated effects in mussels: An integrated approach – hyphenated analytical techniques and biomarkers 6th SETAC world conference 2012, Berlin, D

Helmholz H, Wiebring A, Lassen S, Ruhnau Ch, Prange A Size matters - modulation of the Cnidom and the toxic potential of *Cyanea capillata*. 3rd International jellyfish Bloom Symposium 2010, Mar del Plata/Arg

Helmholz H, Lassen S, Ruhnau Ch, Prange A: Toxicological and biochemical characterization of northern scyphozoan species. ICES Annual Science conference, Berlin 2009

Zimmermann A, **Helmholz H**, Proefrock D, Prange A: A new enzyme-assay for PLA₂ activity in jellyfish venom based on phosphorus detection using HPLC-CC-ICP-MS. 2nd International Jellyfish Blooms Symposium 2007, Gold Coast/Aus

Helmholz H, Wichels A and Gerdts G: Screening for bioactive glycolipids in sponges from the Orkney Islands. Marine Biotechnology: Basics and Application, 2003 Matalascanas/E

Helmholz H and Niemeyer B: Biospecific Affinityseparation for the preparation of glycoconjugates from microalgae. Symposium: Natural Products from Marine Organisms, Greifswald 2002

Helmholz H, Witt S and Lindequist U: Investigation of immunmodulating effects of marine fungi. Symposium: Marine Biotechnologie und Biosensorik: neue Anwendungen für Medizin, Umwelt und Ernährung, Greifswald 1999, transkript 12, P11

Helmholz H, Witt S and Lindequist U: Untersuchungen zum Einfluß von marinen Pilzen auf die Bindung von LPS and den Endotoxinrezeptor CD14. DECHEMA Symposium „Aktuelle Entwicklungen in der Naturstoffforschung“ X. Irseer Naturstofftage 1998