

## *Curriculum vitae*

Prof. Dr. Viktoria Weber

### Personal Data

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**Date of birth** 03-02-1967, Krems, Austria

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### Current Positions, Employment, and Faculty Appointments

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**since 2015 Full professor (§98) for Medical Biochemistry**

Danube University Krems, Krems, Austria

**since 2010 Vice-Rector for Research**

Danube University Krems, Krems, Austria

**2013-2019 Head, Christian Doppler Laboratory**

Innovative Therapy Approaches in Sepsis [www.sepsisresearch.at](http://www.sepsisresearch.at)

**since 2015 Head, Center for Biomedical Technology**

Danube University Krems, Krems, Austria

**since July 2018 Head, Department for Biomedical Research**

Danube University Krems, Krems, Austria

### Education

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**1985 - 1990 University of Natural Resources and Life Sciences (Biotechnology),**  
Vienna, Austria

**1990 Graduation (Dipl.-Ing.), with distinction**

**1990 - 1993 Doctoral thesis**

Institute for Chemistry, University of Natural Resources and Life Sciences,  
Vienna, Austria

**1993 Promotion (Dr. rer. nat. techn.), with distinction**

**2008 Habilitation (venia docendi) for Biochemistry**

University of Natural Resources and Life Sciences, Vienna, Austria

### Academic and Professional Career

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**1991 - 1994 Researcher**

Institute for Chemistry, University of Natural Resources and Life Sciences,  
Vienna, Austria (Glycobiology, with Prof. Leopold März)

**Oct 1992 Advanced Course on Glycoconjugates**, Federal European Biochemical  
Societies (FEBS), Lille, France

**1994 - 1996 Post-doctoral Training**

Institute for Tumor Biology and Cancer Research, Medical University Vienna,  
Austria (with Prof. Dr. Ulrike Wintersberger)

**1996 - 1999 Maternity leave**

**1999 - 2008 Group Leader Biochemistry**, Center for Biomedical Technology, Danube  
University Krems (with Prof. Dr. Dieter Falkenhagen)

### **Research Interests**

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- Blood-biomaterial interface and blood compatibility
- Extracorporeal therapies
- Extracellular vesicles (characterization and functional studies in inflammation and coagulation)
- Pathophysiology of sepsis [www.sepsisresearch.at](http://www.sepsisresearch.at)
- Advanced pathogen detection in blood stream infection

### **Honors and Awards**

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- Member, Leibniz-Sozietät der Wissenschaften zu Berlin (since 2021)
- Science2Business Award (2017)
- Liese Prokop Award (2005)
- Young Investigator Award, European Society for Artificial Organs (2000)
- Anton Kurir Award, University of Natural Resources and Life Sciences Vienna (1994)

### **Reviewing Activities & Board Memberships**

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**Supervisory Board** Vienna Biocenter Core Facilities (VBCF)

**Board** Complexity Science Hub [www.csh.ac.at](http://www.csh.ac.at)

**Reviewer for funding** Österreichische Nationalbank

**organizations** Research Executive Agency EU FP7 PEOPLE: International Incoming,  
Outgoing, and Intra-European Fellowships

Romanian Council for Research and Development

Polish-Norwegian Research Programme

South Moravian Programme for Distinguished Researchers

National Research Foundation Singapore

Dutch Research Council

**Reviewer for journals** Acta Biomaterialia  
Biomacromolecules  
Biomaterials  
Blood Purification  
Cellulose  
Chemical Reviews  
Frontiers in Immunology  
International Journal of Artificial Organs  
Journal of Bioactive and Compatible Polymers  
Journal of Biomaterials Science, Polymer Edition  
Journal of Chromatography A  
Journal of Nanosciences and Nanotechnology  
Journal of Nanotechnology  
Nature Communications  
Scientific Reports (Editorial Board Member)  
Therapeutic Apheresis and Dialysis  
Transfusion and Apheresis Science

### **Memberships in Professional Societies**

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**ESAO** European Society for Artificial Organs (President) [www.esao.org](http://www.esao.org)  
**ISEV** International Society for Extracellular Vesicles (Member)  
**ÖGMBT** Austrian Association of Molecular Life Sciences and Biotechnology (Board Member and Vice President) [www.oegmbt.at](http://www.oegmbt.at)  
**DSG** Deutsche Sepsis-Gesellschaft  
**ESS** European Shock Society  
**ASEV** Austrian Society for Extracellular Vesicles (Founding Member and Vice President, [www.asev.at](http://www.asev.at))

### **Organisation of Conferences**

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- Scientific Advisory Board, Conference of the European Society for Artificial Organs (since 2007)
- Annual meeting of the ÖGMBT, Vienna, (2010)
- ASAIO-ESAO Winter School, Semmering (2011, 2012)
- ESAO Summer School on Biomaterials, Krems (2011)
- Symposium Extracellular Vesicles in Inflammation (2015, 2016, 2019, 2021)
- BionanoMed (2016, 2017)

- Annual Meeting of the ESAO (2016, 2017)
- ESAO Winter School (2018-2020)

## Peer-Reviewed Articles

Steinberger S, Karuthedom George S, Lauková L, Weiss R, Tripisciano C, Birner-Gruenberger R, Weber V, Allmaier G, Weiss VU. (2021) A possible role of gas-phase electrophoretic mobility molecular analysis (nES GEMMA) in extracellular vesicle research. *Anal Bioanal Chem*. Oct 7. doi: 10.1007/s00216-021-03692-y.

Rock G, Weber V, Stegmayr B. (2021) Therapeutic plasma exchange (TPE) as a plausible rescue therapy in severe vaccine-induced immune thrombotic thrombocytopenia. *Transfus Apher Sci*. Aug;60(4):103174

Huber S, Knoll, MA, Berktold M, Würzner R, Brindlmayer A, Weber V, Posch AE, Mrazek K, Lepuschitz S, Ante M, Beisken S, Orth-Höller D, Weinberger J (2021). Genomic and phenotypic analysis of linezolid-resistant *Staphylococcus epidermidis* in a tertiary hospital in Innsbruck, Austria. *Microorganisms* 9: 1023

Fendl B, Weiss R, Eichhorn T, Linsberger I, Afonyushkin T, Puhm F, Binder CJ, Fischer MB, Weber V (2021) Extracellular vesicles are associated with C-reactive protein in sepsis and elicit a pro-inflammatory response in human monocytes. *Sci Rep*.11(1):6996

Huber S, Weinberger J, Pilecky M, Lorenz IH, Schildberger A, Weber V, Fuchs S, Posch W, Knabl L, Würzner R, Posch A (2021) A high leukocyte count and administration of hydrocortisone hamper PCR-based diagnostics for bloodstream infections. *Eur J Clin Microbiol Infect Dis*. Jul;40(7):1441-1449.

Eichhorn T, Linsberger I, Lauková L, Tripisciano C, Fendl B, Weiss R, König F, Valicek G, Miestinger G, Hörmann C, Weber V (2021) Analysis of inflammatory mediator profiles in sepsis patients reveals that extracellular histones are strongly elevated in non-survivors *Mediators Inflamm* Mar 17;2021:8395048

Lauková L, Weiss R, Semak V, Weber V (2021) Desialylation of platelet surface glycans enhances platelet adhesion to adsorbent polymers in whole blood lipoprotein apheresis. *Int J Artif Organs*. Jun;44(6):378-384.

Tripisciano C, Weiss R, Karuthedom George S, Fischer MB, Weber V (2020) Extracellular vesicles derived from platelets, red blood cells, and monocyte-like cells differ regarding their ability to induce factor XII-dependent thrombin generation. *Front Cell Dev Biol* 8:298

Wisgrill L, Lamm C, Hell L, Thaler J, Berger A, Weiss R, Weber V, Rinoesl H, Hiesmayr MJ, Spittler A, Bernardi M (2020) Influence of hemoadsorption during cardiopulmonary bypass on blood vesicle count and function. *J Transl Med* 18(1):202

Weiss VU, Balantic K, Pittenauer E, Tripisciano C, Friedbacher G, Weber V, Marchetti-Deschmann M, Allmaier G (2020) Nano electrospray differential mobility analysis based size selection of liposomes and very-low density lipoprotein particles for offline hyphenation to MALDI mass spectrometry. *J Pharm Biomed Anal* 179:112998

Pasztorek M, Rossmann E, Mayr C, Hauser F, Jacak J, Ebner A, Weber V, Fischer MB (2019) Influence of platelet lysate on 2D and 3D amniotic mesenchymal stem cell cultures. *Front Bioeng Biotechnol* 7:338

Almeria C, Weiss R, Roy M, Tripisciano C, Kasper C, Weber V, Egger D (2019) Hypoxia conditioned mesenchymal stem cell-derived extracellular vesicles induce increased vascular tube formation in vitro. *Front Bioeng Biotechnol* 7:292

Fendl B, Weiss R, Eichhorn T, Spittler A, Fischer MB, Weber V (2019) Storage of human whole blood, but not isolated monocytes, preserves the distribution of monocyte subsets. *Biochem Biophys Res Commun* 517(4):709-714

- Pilecky M, Schildberger A, Knabl L, Orth-Höller D, Weber V (2019) Influence of antibiotic treatment on the detection of *S. aureus* in whole blood following pathogen enrichment. *BMC Microbiol* 19(1):180
- Pilecky M, Schildberger A, Orth-Höller D, Weber V (2019) Pathogen enrichment from whole blood for diagnostic and therapeutic applications: prospects and limitations. *Diagn Microbiol Infect Dis* 94(1):7-14
- Fendl B, Eichhorn T, Weiss R, Tripisciano C, Spittler A, Fischer MB, Weber V (2018) Differential interaction of platelet-derived extracellular vesicles with circulating immune cells: roles of TAM receptors, CD11b, and phosphatidylserine. *Frontiers in Immunology* 9:2797
- Théry C, Witwer KW, Weber V, et al. (2018) Minimal information for studies of extracellular vesicles 2018 (MISEV2018): a position statement of the International Society for Extracellular Vesicles and update of the MISEV2014 guidelines. *Journal of Extracellular Vesicles* 7:1, Article ID 1535750.
- Egger D, Tripisciano C, Weber V, Kasper C (2018) Dynamic cultivation of mesenchymal stem cell aggregates. *Bioengineering (Basel)* 5(2).
- Gubensek J, Strobl K, Harm S, Weiss R, Eichhorn T, Buturovic-Ponikvar J, Weber V, Hartmann J (2018) Influence of citrate concentration on the activation of blood cells in an in vitro dialysis setup. *PLoS One* 13(6):e0199204.
- Weiss R, Gröger M, Rauscher S, Fendl B, Eichhorn T, Fischer MB, Spittler A, Weber V (2018) Differential interaction of platelet-derived extracellular vesicles with leukocyte subsets in human whole blood. *Sci Rep* 8(1):6598.
- Mushahary D, Spittler A, Kasper C, Weber V, Charwart V (2018) Isolation, cultivation, and characterization of human mesenchymal stem cells. *Cytometry A* 93(1):19-31.
- Eichhorn T, Hartmann J, Harm S, Linsberger I, König F, Valicek G, Miestinger G, Hörmann C, Weber V (2017) Clearance of selected cytokines with continuous veno-venous hemodialysis using Ultraflux EMiC2 versus Ultraflux AV1000S. *Blood Purif* 44:260-266.
- Tripisciano C, Weiss R, Eichhorn T, Spittler A, Heuser T, Fischer MB, Weber V (2017) Different potential of extracellular vesicles to support thrombin generation: Contributions of phosphatidylserine, tissue factor, and cellular origin. *Sci Rep* 7(1):6522.
- Weiss R, Eichhorn T, Spittler A, Micusik M, Fischer MB, Weber V (2017) Release and cellular origin of extracellular vesicles during circulation of whole blood over adsorbent polymers for lipid apheresis. *J Biomed Mater Res B* 105(3):636-646.
- Weber V, Groth T (2017) Materials, surfaces, and systems for extracorporeal therapies and beyond. *Int J Artif Organs* 40(1):1-3.
- Eichhorn T, Fischer MB, Weber V (2017) Mechanisms of endothelial activation in sepsis and cell culture models to study the heterogeneous host response. *Int J Artif Organs* 40(1):9-14.
- Semak V, Fischer MB, Weber V (2017) Biomimetic principles to develop blood compatible surfaces. *Int J Artif Organs* 40(1):22-30.
- Strobl K, Harm S, Weber V, Hartmann J (2017) The role of ionized calcium and magnesium in regional citrate anticoagulation and its impact on inflammatory parameters. *Int J Artif Organs* 40(1):15-21.
- Weiss R, Eichhorn T, Spittler A, Mičušík M, Fischer MB, Weber V (2017) Release and cellular origin of extracellular vesicles during circulation of whole blood over adsorbent polymers for lipid apheresis. *J Biomed Mater Res B* 105(3):636-646.
- Weiss R, Fischer MB, Weber V (2017) The impact of citrate concentration on adhesion of platelets and leukocytes to adsorbents in whole blood lipid apheresis. *J Clin Apher* 32(6):375-383.
- Eichhorn T, Rauscher S, Hammer C, Gröger M, Fischer MB, Weber V (2016) Polystyrene-divinylbenzene based adsorbents reduce endothelial activation and monocyte adhesion under septic conditions in a pore-size dependent manner. *Inflammation* 39(5):1737-1746.

Fendl B, Weiss R, Fischer MB, Spittler A, Weber V (2016) Characterization of extracellular vesicles in whole blood: Influence of pre-analytical parameters and visualization of vesicle-cell interactions using imaging flow cytometry. *Biochem Biophys Res Commun* 478(1):168-173.

Buchacher T, Ohradanova-Repic A, Stockinger H, Fischer MB, Weber V (2015) Macrophage M2 polarization favors survival of the intracellular pathogen *C. pneumoniae*. *PLoS One* 10(11):e0143593

Buchacher T, Wiesinger-Mayr H, Vierlinger K, Ruger BM, Stanek G, Fischer MB, Weber V (2014) Human blood monocytes support persistence, but not replication of the intracellular pathogen *C. pneumoniae*. *BMC Immunology* 15:60.

Tripisciano C, Eichhorn T, Harm S, Weber V (2014) Adsorption of the Inflammatory Mediator High-Mobility Group Box 1 by Polymers with Different Charge and Porosity. *Biomed Research International* 238160.

Weiss R, Spittler A, Schmitz G, Fischer MB, Weber V (2014) Thrombocyte adhesion and release of extracellular microvesicles correlate with surface roughness of adsorbent polymers for lipid apheresis *Biomacromolecules*, 15(7):2648-2655

La Spina R, Tripisciano C, Mecca T, Cunsolo F, Weber V, Mattiasson B (2014) Chemically modified poly(2-hydroxyethyl methacrylate) cryogel for the adsorption of heparin. *J Biomed Materials Research B* 102(6):1207-1216.

Weber V, Tripisciano C (2013) Application Potential of Cellulose-Based Adsorbents in Extracorporeal Blood Purification. *Trends in Carbohydrate Research* 5(2):1-6

Schildberger A, Rossmannith E, Eichhorn T, Strassl K, Weber V (2013) Monocytes, Peripheral Blood Mononuclear Cells, and THP-1 Cells Exhibit Different Cytokine Expression Patterns Following Stimulation with Lipopolysaccharide. *Mediators of Inflammation* 697972

Eichhorn T, Ivanov AE, Dainiak MB, Leistner A, Linsberger I, Jungvid H, Mikhalovsky SV, Weber V (2013) Macroporous composite cryogels with embedded polystyrene divinylbenzene microparticles for the adsorption of toxic metabolites from blood. *Journal of Chemistry* 348412

Tripisciano C, Leistner A, Linsberger I, Leistner A, Falkenhagen D, Weber V (2012) Effect of anticoagulation with citrate versus heparin on the adsorption of coagulation factors to blood purification resins with different charge. *Biomacromolecules* 13:484-488.

Tripisciano C, Kozynchenko OP, Linsberger I, Phillips GJ, Howell CA, Sandeman SR, Tennison SR, Mikhalovsky SV, Weber V, and D Falkenhagen (2011) Activation-Dependent Adsorption of Cytokines and Toxins Related to Liver Failure to Carbon Beads. *Biomacromolecules* 12(10):3733-3740

Schildberger A, Buchacher T, Weber V, and D Falkenhagen (2011) Adsorptive Modulation of Inflammatory Mediators Dampens Endothelial Cell Activation. *Blood Purif* 32(4):286-295.

Ettenauer M, Loth F, Thummmler K, Fischer S, Weber V, and D Falkenhagen (2011) Characterization and functionalization of cellulose microbeads for extracorporeal blood purification. *Cellulose* 18:1257-1263.

Thummmler K, Fischer S, Feldner A, Weber V, Ettenauer M, Loth F, and D Falkenhagen (2011) Preparation and characterization of cellulose microspheres. *Cellulose* 18:135-142.

Eifler R, Lind J, Falkenhagen D, Weber V, Fischer MB, and R Zeillinger (2011) Enrichment of circulating tumor cells from a large blood volume using leukapheresis and elutriation: a proof of concept. *Clinical Cytometry* 80(2):100-111.

Weber V, Ettenauer M, Linsberger I, Loth F, Thummmler K, Feldner A, Fischer S, and D Falkenhagen (2010) Functionalization and application of cellulose microparticles as adsorbents in extracorporeal blood purification. *Macromolecular Symposia* 294:90-95.

Cantaluppi V, Weber V, Lauritano C, Figliolini F, Beltramo S, Biancone L, Del Cal M, Cruz D, Ronco C, Segolini GP, Tetta C, and G Camussi (2010) Protective effect of resin adsorption on septic plasma-induced tubular injury. *Critical Care* 14(1):R4

Schildberger A, Rossmannith E, Weber V, and D Falkenhagen (2010) Monitoring of endothelial cell activation in experimental sepsis with a two-step cell culture model. *Innate Immun* 16:278-287.

Weber V, Linsberger I, Hauner M, Leistner A, Leistner A, and D Falkenhagen (2008) Neutral styrene divinylbenzene copolymers for adsorption of toxins in liver failure. *Biomacromolecules* 9(4):1322-1328.

Meijers BK, Weber V, Bammens B, Dehaen W, Verbeke K, Falkenhagen D, and P Evenepoel (2008) Removal of the uremic retention solute p-cresol using fractionated plasma separation and adsorption. *Artif Organs* 32(3):214-219.

Ettenauer M, Posnicek T, Brandl M, Weber V, and D Falkenhagen (2007) Magnetic fluorescent microparticles as markers for particle release in extracorporeal blood purification. *Biomacromolecules* 8(12):3693-3696.

Weber V, Hartmann J, Linsberger I, Falkenhagen D (2007) Efficient adsorption of tumor necrosis factor with an in vitro set-up of the Microspheres-Based Detoxification System. *Blood Purif* 25:169-174.

Falkenhagen D, Brandl M, Hartmann J, Kellner KH, Linsberger I, Posnicek T, Weber V (2006) Fluidized bed systems for extracorporeal liver support. *Ther Apher Dial* 10(2):154-159.

Weber V, Linsberger I, Ettenauer M, Loth F, Höyhty M, and D Falkenhagen (2005) Development of specific adsorbents for tumor necrosis factor- $\alpha$  (TNF- $\alpha$ ): influence of antibody immobilization on performance and biocompatibility. *Biomacromolecules* 6:1864-1870.

Vaslaki LR, Berta K, Major L, Weber V, Weber C, Wojke R, Passlick-Deetjen J, and D Falkenhagen (2005) On-line haemodiafiltration does not induce inflammatory response in end-stage renal disease patients: results from a multicenter cross-over study. *Artif Organs* 29(5):406-412.

Reiter G, Hassler N, Weber V, Falkenhagen D, Fringeli UP (2004) In situ FTIR ATR spectroscopic study of the interaction of immobilized human tumor necrosis factor- $\alpha$  with a monoclonal antibody in aqueous environment. *Biochem Biophys Acta* 1699:253-261.

Völlenkle C, Weigert S, Ilk N, Egelseer E, Weber V, Loth F, Falkenhagen D, Sleytr UB, and M Sára (2004) Construction of a functional S-layer fusion protein comprising an IgG-binding domain for the development of specific adsorbents for extracorporeal blood purification. *Appl Environ Microbiol* 70(3):1514-1521.

Weber V, Linsberger I, Rossmannith E, Weber C, and D Falkenhagen (2004) Pyrogen transfer across high- and low flux hemodialysis membranes. *Artif Organs* 28(2):210-217.

Poschalko A, Rohr T, Gruber H, Bianco A, Guichard G, Briand JP, Weber V, and D Falkenhagen (2003) SUBPOL: A novel sucrose-based polymer support for solid-phase peptide synthesis and affinity chromatography applications. *J Am Chem Soc* 125:13415-13426.

Weber V, Weigert S, Sára M, Sleytr UB, and D Falkenhagen (2001) Development of affinity microparticles for extracorporeal blood purification based on crystalline bacterial cell surface (S-layer) proteins. *Ther Apher* 5:433-438.

Weber V., Wernitznig A., Hager G., Harata M., Frank P., and U. Wintersberger (1997) Purification and nucleic-acid-binding properties of a *Saccharomyces cerevisiae* protein involved in the control of ploidy. *Eur. J Biochem* 249:309-317.

Weber V, Harata M, Hauser H, and U Wintersberger (1995) The actin-related protein Act3p of *Saccharomyces cerevisiae* is located in the nucleus. *Mol Biol Cell* 6:1263-1270.

Kubelka V, Altmann F, and L März (1995) The asparagine-linked carbohydrate of honeybee venom hyaluronidase. *Glycoconjugate J* 12:77-83.

Kubelka V, Altmann F, Kornfeld G, and L. März (1994) Structures of the N-linked oligosaccharides of the membrane glycoproteins from three lepidopteran cell lines (Sf-21, IZD-Mb-0503, Bm-N). *Arch Biochem Biophys* 308:148-157.

Tretter V, Altmann F, Kubelka V, März L., and WM Becker (1993) Fucose  $\alpha$ 1,3-linked to the core region of glycoprotein N-glycans creates an important epitope for IgE from honeybee venom allergic individuals. *Int Arch Allergy Immunol* 102:259-266.

Voss T, Ergülen E, Ahorn H, Kubelka V, Sugiyama K, Maurer-Fogy I, and J Glössl (1993) Expression of human interferon  $\omega$ 1 in Sf9 cells. *Eur J Biochem* 217:913-919.

Kubelka V, Altmann F, Schumacher E, Tretter V, März L, Hard K, Kamerling JP, and JFG Vliegthart (1993) Primary structures of the N-linked carbohydrate chains from honeybee venom phospholipase A<sub>2</sub>. *Eur J Biochem* 213:1193-1204.

Staudacher E, Kubelka V, and L März (1992) Distinct N-glycan fucosylation potentials of three lepidopteran cell lines. *Eur J Biochem* 207:987-993.

Altmann F, Kubelka V, Staudacher E, Uhl C, and L März (1991) Characterization of the isoforms of phospholipase A<sub>2</sub> from honeybee venom. *Insect Biochem* 21:467-472.