

Dr. Sandra Högl



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Personal Information

Date of Birth: February, 28th 1979
Place of Birth: Munich, Germany
Nationality: German
Marital Status: Single

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Positions / Work experience

2014 to present Board Certified Anesthesiologist and Researcher at the University Hospital of Ludwig-Maximilians-University, Munich
2012 – 2014 Postdoctoral Research Fellowship, Department of Anesthesiology, University of Colorado, Anschutz Medical Campus, CO, USA
2011 to present Member of the Employee Committee of the University Hospital of Ludwig-Maximilians-University, Munich
2007 – 2012 Residency – Anesthesiology, University Hospital of Ludwig-Maximilians-University, Munich
2005 – 2007 Residency – Anesthesiology, University Hospital of Johann Wolfgang Goethe-University, Frankfurt am Main

Education

2012 German Board certification: Anaesthesiology and Critical Care
2009 German Board Certification in emergency medicine
2008 Certified investigator for clinical trials
May 2005 Final medical examination (Approbation)
1998 – 2005 Medical School (Ludwig-Maximilians-University, Munich)

Internship (4 months):
Catedra de Patología y Clínica Quirúrgicas, Hospital Universitario San Cecilio, Granada, Spain
Internship (2 months):
Department of Anesthesiology, University Medical Center, Health Sciences Center, University of Arizona, Tucson, USA
Clinical elective (1 month):
Department of Colorectal Surgery, St. Peter's Hospital, NHS Trust, Chertsey, Surrey, United Kingdom
General qualification for university entrance (Allgemeine Hochschulreife / Abitur), Munich, Germany

June 1998

Research

Acute respiratory distress syndrome (ARDS, VILI) – pathogenesis, diagnostics, imaging

Experimental research of inflammatory processes and immunomodulatory therapies during sepsis, ARDS und VILI

Inhalative therapeutical drugs for sepsis, ARDS und VILI

Hypoxia and inflammation

2012 - 2014

Postdoctoral Research Fellowship, Department of Anesthesiology, University of Colorado, Anschutz Medical Campus, CO, USA, (Prof. H. K. Eltzschig, MD, PhD, ChAIR, Mucosal Inflammation Program) sponsored by the German National Academy of Science (Naturforscher Leopoldina)

2009 – 2012

Mentee in a mentoring program for young scientists promoted by the German Association of Anesthesiology (DGAI)

2006 – 2007

Post-graduate research fellowship (Patenschaftsmodell / Tandemstelle) at the Pharmazentrum Frankfurt (Department of Pharmacology; Head of Department: Prof. J. Pfeilschifter, Research Group Leader: Prof. H. Mühl). "The biology of interleukin-22: Investigation of human lung carcinoma cells and mechanical lung injury in the rat."

2003 – 2004

Visiting research fellowship, Department of Anesthesiology, Intensive Care Medicine and Pain Therapy (Prof. B. Zwissler) in cooperation with Pharmazentrum Frankfurt (Prof. H. Mühl).

2001 – 2005

Doctoral Thesis: "The role of inhaled Interleukin-10 in experimental endotoxemia in the rat."
Institute of Surgical Research and Clinic for Anesthesiology, Ludwigs-Maximilians-University, Munich, Prof. B. Zwissler (magna cum laude)

Teaching experience

- 2009 to present Tutor in a mentoring program for residencies in anesthesiology at the Ludwig-Maximilians-University, Munich
- 2007 to present Clinical instructor for medical students, Ludwig-Maximilians-University, Munich
- March 2009 “Teach-the-Teacher-Training” hosted by the LMU Harvard Medical International (HMI) Alliance at Frauenchiemsee, Germany
- April 2002 – September 2003 Tutor in a student mentoring program (Ludwig-Maximilians-University, Munich) for freshman medical students
- October 2001 – March 2002 Teaching Assistant at the Institute of Anatomy, Ludwig-Maximilians-University, Munich

Editorial Activities

- Reviewer for different medical journals, including Anesthesiology, PLOS One, Critical Care, Anesthesia & Analgesia, Clinical Medicine Insights, Respiratory Research, Neuroscience Letters, Pediatric Pulmonology, Journal of Translational Medicine, European Radiology.
- Reviewer for a NIAA Grant

Grants and Honors

1. Prize at the poster presentation for experimental studies at the National Conference (Hauptstadtkongress (HAI)) of the German Society of Anesthesiology (DGAI), “Loss of the HIF-Prolyhydroxylase 1 (PHD1) protects the lung epithelial against experimental ventilator-induced lung injury”, 2013
- Sponsorship by the scientific editorial board of „Münchner Medizinische Wochenschrift e.V.“; 9.500 €; 2010
- Mentee in a mentoring program for young scientists promoted by the German Association of Anesthesiology (DGAI); 2009-2011
- Friedrich-Baur-Foundation: “Mechanotransduction and biotrauma in ventilator-induced lung injury (VIL): In-vitro studies of immunomodulation by Interleukin-22 (Flexercell strain unity)”; 9.000 €; 2008
- Sponsorship “Patenschaftsmodell “The biology of interleukin-22: Investigation of human lung carcinoma cells and mechanical lung injury in the rat”; Medical faculty of Johann Wolfgang Goethe-University, Frankfurt; 1-year sponsored fellowship and 24.000 € for material expenses; 2006
- Poster award winner at the “37. Bavarian Anesthesia days” 2007
- “Prophylactic inhalation of iloprost attenuates biotrauma and mortality in ventilator-induced lung injury in the rat.”

Presentations (selection):

- “Where is the oxygen? Hypoxia in acute lung injury”, Results of the Leopoldina Fellowship Program IX, 2015, Halle (Saale)

„Targeting alveolar Adora2b adenosine receptors for the treatment of acute lung injury“, Grand Rounds of the Department of Anesthesiology 2014, University of Colorado, USA

“Hypoxia, or where is the oxygen?” HAI 2013, Chair and invited talk, HAI 2013, National Conference of the German Society of Anesthesiology, Berlin, Germany

“Xenon in Radiology – What the anesthesiologist should know Invited talk at the HAI 2012 “Xenon in radiology – What the anesthesiologist needs to know”

Tutor of the “One-lung ventilation Workshop” at the “Seminar Kongress Anästhesiologie” 2010, Garmisch-Partenkirchen, Germany

“Use of albumin for volume replacement and/or hypoalbuminemia?” Lecture for continuing medical education 2008, Munich, Germany

“Inhaled pharmaceuticals during pulmonary inflammation – the fog burns off” presented at the Kick-off Meeting of the Comprehensive Pulmonary Center 2007, Neuberberg, Germany

“Pneumo- / Chylo- /Hematothorax – Diagnostic and Therapy” Lecture for continuing medical education 2006, Frankfurt, Germany

Peer-reviewed publications

Vohwinkel CU, **Hoegl S**, Eltزشig HK. Hypoxia signaling during acute lung injury. *J Appl Physiol (1985)*. 2015; Epub ahead of print.

Hoegl S, Meinel F, Thieme SF, Johnson T, Eickelberg O, Zwissler B, Nikolaou K. Worsening respiratory function in mechanically ventilated intensive care patients: feasibility and value of xenon-enhanced dual energy CT. *Eur J Radiol*. 2013; 82(3):557-62.

Scheiermann P, **Hoegl S**, Hofstetter C, Pfeilschifter J, Zwissler B, Muhl H et al. Comparing hemodynamics, blood gas analyses and proinflammatory cytokines in endotoxemic and severely septic rats. *Int Immunopharmacol* 2011; 11:719-723.

Scheiermann P, Ott J, **Hoegl S**, Hecker M, Hofstetter C, Seeger W et al. Effects of short-term infusion of lipid emulsions on pro-inflammatory cytokines and lymphocyte apoptosis in septic and non-septic rats. *Br J Nutr* 2011;1-6.

Thieme SF, **Hoegl S**, Nikolaou K, Fisahn J, Irlbeck M, Maxien D, Reiser MF, Becker CR, Johnson TR. Pulmonary ventilation and perfusion imaging with dual-energy CT. *Eur Radiol*. 2010;20(12):2882-9

Hoegl S, Bachmann M, Scheiermann P, Goren J, Hofstetter C, Pfeilschifter J, Zwissler B, Muhl H. Protective Properties of Inhaled IL-22 in a Model of Ventilator-induced Lung Injury. *Am J Respir Cell Mol Biol* 2011; 44(3):369-76.

Hofstetter C, Scheller B, **Hoegl S**, Mack MG, Zwissler B, Byhahn C. Cuff overinflation and endotracheal tube obstruction: case report and experimental study. *Scand J Trauma Resusc Emerg Med* 2010; 18:18.

Scheiermann P, Ahluwalia D, **Hoegl S**, Dolfen A, Revermann M, Zwissler B et al. Effects of intravenous and inhaled levosimendan in severe rodent sepsis. *Intensive Care Med*. 2009 Aug;35(8):1412-9. Epub 2009 Apr 15.

Boost KA, Leipold T, Scheiermann P, **Hoegl S**, Sadik CD, Hofstetter C et al. Sevoflurane and isoflurane decrease TNF-alpha-induced gene expression in human monocytic THP-1 cells: Potential role of intracellular IkappaBalpha regulation. *Int J Mol Med* 2009; 23:665-671.

Hoegl S, Boost KA, Czerwonka H, Dolfen A, Scheiermann P, Muhl H et al. Inhaled IL-10 reduces biotrauma and mortality in a model of ventilator-induced lung injury. *Respir Med* 2009; 103:463-470.

Scheiermann P, **Hoegl S**, Revermann M, Ahluwalia D, Zander J, Boost KA et al. Cecal ligation and incision: an acute onset model of severe sepsis in rats. *J Surg Res* 2009; 151:132-137.

Boost KA, **Hoegl S**, Dolfen A, Czerwonka H, Scheiermann P, Zwissler B et al. Inhaled levosimendan reduces mortality and release of proinflammatory mediators in a rat model of experimental ventilator-induced lung injury. *Crit Care Med* 2008; 36:1873-1879.

Hoegl S, Boost KA, Flondor M, Scheiermann P, Muhl H, Pfeilschifter J et al. Short-term exposure to high-pressure ventilation leads to pulmonary biotrauma and systemic inflammation in the rat. *Int J Mol Med* 2008; 21:513-519

Hofstetter C, Boost KA, **Hoegl S**, Flondor M, Scheller B, Muhl H et al. Norepinephrine and vasopressin counteract anti-inflammatory effects of isoflurane in endotoxemic rats. *Int J Mol Med* 2007 Oct;20(4):597-604.

Boost KA, Flondor M, Hofstetter C, Platadis I, Stegwerth K, **Hoegl S** et al. The beta-adrenoceptor antagonist propranolol counteracts anti-inflammatory effects of isoflurane in rat endotoxemia. *Acta Anaesthesiol Scand* 2007 Aug;51(7):900-8.

Boost KA, **Hoegl S**, Hofstetter C, Flondor M, Stegwerth K, Platadis I et al. Targeting caspase-1 by inhalation-therapy: effects of Ac-YVAD-CHO on IL-1 beta, IL-18 and downstream proinflammatory parameters as detected in rat endotoxaemia. *Intensive Care Med* 2007 May;33(5):863-71..

Hofstetter C, Flondor M, **Hoegl S**, Muhl H, Zwissler B. Interleukin-10 aerosol reduces proinflammatory mediators in bronchoalveolar fluid of endotoxemic rat. *Crit Care Med* 2005 Oct;33(10):2317-22.

Hofstetter C, Flondor M, Thein E, **Hoegl S**, Kemming G, Kisch-Wedel H et al. Aerosol delivery during mechanical ventilation to the rat. *Exp Lung Res* 2004; 30:635-651.

Abstracts

Hoegl S, Eltztzig H K, Zwissler B, McNamee E N, Tbet+ NK Zellen tragen durch Rekrutierung neutrophiler Granulozyten zur Pathogenese des LPS-induzierten, akuten Lungenschadens der Maus bei. *Anästh Intensivmed* 2015, in press

Hoegl S, Brodsky K S, Zwissler B, Eltztzig H K. Die Rolle epithelialer Adora2B Adenosinrezeptoren in einem Mausmodell des akuten Lungenschadens. *Anästh Intensivmed* 2014, 55[Suppl], S348.

McNamee E N, Clambey E T, **Hoegl S**, Dengler V, Masterson J C, McManus M C, Eltztzig H K. HIF-2α Induction of mir-29a Represses TH1-mediated Intestinal Inflammation. *Inflammatory Bowel Diseases* 01/2013; 19:S101-S102

Hoegl S, Chappell D, Flondor M, Boost KA, Hofstetter C, Zwissler B, Rehm M. Die Rolle von Interleukin-22 in der unspezifischen Immunantwort: STAT3/SOCS3-vermittelte antiinflammatorische Effekte im Lungenkompartiment. *Anästh Intensivmed* 2011, 52[Suppl], S480.

- Hoegl S**, Thieme S F, Fisahn J, Irlbeck M, Nikolaou K, Zwißler B, Johnson T R C. Xenon ermöglicht als inhalatives CT-Kontrastmittel (Xe-Dual Energy CT) differenzierte Aussagen über regionale Belüftungsstörungen bei kritisch kranken Patienten. *Anästh Intensivmed* 2010, 51[Suppl], S304.
- Hoegl S**, Bachmann M, Scheiermann P, Goren I, Zwissler B, Muhl H. Die Rolle von Interleukin-22 in der unspezifischen Immunantwort: STAT3/SOCS3-vermittelte antiinflammatorische Effekte im Lungenkompartiment. *Anästh Intensivmed* 2009, 50[Suppl], 433-434.
- Scheiermann P, Ott J, **Hoegl S**, Boost KA, Muhl H, Seeger W, Mayer K, Zwissler B. Wirkung der intravenösen Gabe von n-6- und n-3-haltigen Fettsäuren auf Letalität, proinflammatorische Zytokine und Apoptose in der akuten Sepsis der Ratte. *Anästh Intensivmed* 2009, 50[Suppl], 448-449.
- Hoegl S**, Bachmann M, Scheiermann P, Goren I, Zwissler B, Muhl H. Die prophylaktische Inhalation von Interleukin-22 induziert SOCS3 und kann den beatmungsinduzierten Lungenschaden (VILI) der Ratte vermindern. *Anästh Intensivmed* 2008;49[Suppl];:374
- Scheiermann P, **Hoegl S**, Ahluwalia D, Revermann M, Boost KA, Muhl H et al. Antiinflammatorische und antiapoptotische Eigenschaften von Levosimendan in der akuten Sepsis der Ratte. *Anästh Intensivmed* 2008;49(7):398-399
- Scheiermann P, **Hoegl S**, Revermann M, Ahluwalia D, Zander J, Boost KA et al. Cecal ligation and incision: an acute onset model to study severe sepsis in rats. *Infection* 2007; 35 (Suppl. II): 29
- Hoegl S**, Bachmann M, Scheiermann P, Goren I, Hofstetter C, Pfeilschiffer J, et al. Protection by interleukin-22 inhalation therapy in a rat model of ventilator-induced lung injury. *Naunyn Schmiedebergs Arch Pharmacol* 377[Suppl 1], 43. 2008.
- Hoegl S**, Boost KA, Hofstetter C, Scheiermann P, Flondor M, Zwissler B. Die prophylaktische Inhalation von Interleukin-10 vermindert das Biotrauma bei beatmungsinduziertem Lungenschaden (VILI) der Ratte. *Anästh Intensivmed* 2007;48(7):383
- Boost KA, **Hoegl S**, Hofstetter C, Flondor M, Dolfen A, Czerwonka H et al. Die Inhalation des Calcium-Sensitizers Levosimendan vermindert die Sekretion proinflammatorischer Zytokine und die Letalität beim beatmungsinduzierten Lungenschaden (VILI) der Ratte. *Anästh Intensivmed* 2007;48(7):369-370
- Hoegl S**, Hofstetter C, Flondor M, Thein E, Zwissler B. Efficacy and safety of a new jet-nebulizer system for aerosolization in the ventilated rat. *Eur J of Anaesth* 2003; 30 (suppl): A-259.

Book Chapters

Chapter: Thoracic Imaging - Lung Ventilation; in "Dual Energy CT in Clinical Practice (Medical Radiology, Diagnostic Imaging)"; Volume editors: T.R.C. Johnson, C. Fink, S.O. Schönberg, and M.F. Reiser; Springer, Berlin 2011