

Curriculum Vitae: Univ.Prof. Dipl.-Ing. Dr. Herbert Stangl

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Personal data Date of birth July 9, 1965
Place of birth Güssing, Austria
Nationality Austria

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**Present appointment**

Associate professor at Center for Pathobiochemistry and Genetics,
Head - Institute for Medical Chemistry, Medical University of Vienna,
Austria

Main areas of research

Lipoprotein metabolism: Transfer of cholesterol between lipoproteins and cells, in particular reverse cholesterol transport by HDL. Cellular HDL particle uptake and resecretion, the signaling behavior of HDL and their physiological relevance.

Academic career and positions

- 1991 – 1993 PhD thesis at the Institute of Biochemical Technology and Microbiology, Department of Microbial Biochemistry, University of Technology Vienna, Austria
- 1993 PhD, Biochemistry, University of Technology Vienna, Austria
- 1996 – 1999 Postdoctoral fellow at the Department of Molecular Genetics, Southwestern Medical Center at Dallas University of Texas, Dallas TX, USA; mentor: Dr.Helen H. Hobbs
- 1993 – 2004 Assistant professor at the Institute for Medical Chemistry, Medical School, University of Vienna, Austria
- 2004 Appointment as a.o. Univ. Professor by the Med. Univ. Vienna
- 2007 – present Associate professor at Center for Pathobiochemistry and Genetics, Institute for Medical Chemistry, Med. Univ. Vienna
- 1996 – 1997 Erwin-Schrödinger Fellowship, Austrian Science Fund (FWF)

Awards

Memberships Board member of the Austrian Atherosclerosis Society

5 selected research grants

Fonds zur Förderung der Wissenschaftlichen Forschung (FWF):

2015- Transfer of miRNA from single HDL particles to cells. P29110-B27

2010 – 2014 Trafficking of HDL and its lipids in mouse models, P22838-B13

2008 – 2012 Physiological relevance of HDL uptake and resecretion: An alternative pathway to remove cholesterol from cells?, P 20116-B11

2002- 2006 Characterization of HDL-cholesterol uptake in cells. P16361-B14

Austrian Academy of Science

2012 – 2013 Doc-fForte to Mag. Stefanie Fruhwürth, Transport of HDL and HDL-derived cholesterol through the endothelial barrier, P23280

Selected Cooperation Partners:

Prof. Dr. Gerhard Schütz, Inst. f. Biophysics, Technical University of Vienna

Prof. Dr. Christoph Binder, CeMM – Wien, Austrian Academy of Science and Medical University of Vienna

Dr. Birgit Plochberger, FH Upper Austria, Campus Linz

PD. Dr. Thomas Scherer, Department of Medicine III, Medical University of Vienna

Publications of the last 5 years

Axmann M, Meier SM, Karner A, Strobl W, **Stangl H**, Plochberger B.
Serum and Lipoprotein Particle miRNA Profile in Uremia Patients.
Genes (Basel). 2018 Nov 5;9(11). pii: E533. doi: 10.3390/genes9110533.

Plochberger B, Axmann M, Röhrl C, Weghuber J, Brameshuber M, Rosboth BK, Mayr S, Ros R, Bittman R, **Stangl H**, Schütz GJ.
Direct observation of cargo transfer from HDL particles to the plasma membrane.
Atherosclerosis. 2018 Aug 27;277:53-59. doi: 10.1016/j.atherosclerosis.2018.08.032.

Wang L, Eftekhari P, Schachner D, Ignatova ID, Palme V, Schilcher N, Ladurner A, Heiss EH, **Stangl H**, Dirsch VM, Atanasov AG.
Novel interactomics approach identifies ABCA1 as direct target of evodiamine, which increases macrophage cholesterol efflux.
Sci Rep. 2018 Jul 23;8(1):11061. doi: 10.1038/s41598-018-29281-1

Röhrl C, **Stangl H**.
Cholesterol metabolism-physiological regulation and pathophysiological deregulation by the endoplasmic reticulum.
Wien Med Wochenschr. 2018 Sep;168(11-12):280-285. doi: 10.1007/s10354-018-0626-2. Epub 2018 Feb 27

Wollhofen R, Axmann M, Freudenthaler P, Gabriel C, Röhrl C, **Stangl H**, Klar TA, Jacak J.
Multiphoton-Polymerized 3D Protein Assay.
ACS Appl Mater Interfaces. 2018 Jan 17;10(2):1474-1479. doi: 10.1021/acsami.7b13183. Epub 2018 Jan 5.

Eigner K, Filik Y, Mark F, Schütz B, Klambauer G, Moriggl R, Hengstschläger M, **Stangl H**, Mikula M, Röhrl C.
The unfolded protein response impacts melanoma progression by enhancing FGF expression and can be antagonized by a chemical chaperone.
Sci Rep. 2017 Dec 13;7(1):17498. doi: 10.1038/s41598-017-17888-9.

Plochberger B, Röhrl C, Preiner J, Rankl C, Brameshuber M, Madl J, Bittman R, Ros R, Sezgin E, Eggeling C, Hinterdorfer P, **Stangl H**, Schütz GJ.
HDL particles incorporate into lipid bilayers - a combined AFM and single molecule fluorescence microscopy study.
Sci Rep. 2017 Nov 21;7(1):15886. doi: 10.1038/s41598-017-15949-7

Kinslechner K, Schörghofer D, Schütz B, Vallianou M, Wingelhofer B, Mikulits W, Röhrl C, Hengstschläger M, Moriggl R, **Stangl H**, Mikula M.
Malignant Phenotypes in Metastatic Melanoma are Governed by SR-BI and its Association with Glycosylation and STAT5 Activation.
Mol Cancer Res. 2017 Oct 3. doi: 10.1158/1541-7786.MCR-17-0292

Wang L, Palme V, Schilcher N, Ladurner A, Heiss EH, **Stangl H**, Bauer R, Dirsch VM, Atanasov AG.
The Dietary Constituent Falcariindiol Promotes Cholesterol Efflux from THP-1 Macrophages by Increasing ABCA1 Gene Transcription and Protein Stability.

Front Pharmacol. 2017 Sep 1;8:596. doi: 10.3389/fphar.2017.00596.

Balthasar C, **Stangl H**, Widhalm R, Granitzer S, Hengstschläger M, Gundacker C. Methylmercury Uptake into BeWo Cells Depends on LAT2-4F2hc, a System L Amino Acid Transporter.

Int J Mol Sci. 2017 Aug 8;18(8). pii: E1730. doi: 10.3390/ijms18081730

Wang L, Palme V, Rotter S, Schilcher N, Cukaj M, Wang D, Ladurner A, Heiss EH, **Stangl H**, Dirsch VM, Atanasov AG.

Piperine inhibits ABCA1 degradation and promotes cholesterol efflux from THP-1-derived macrophages.

Mol Nutr Food Res. 2017 Apr;61(4). doi: 10.1002/mnfr.201500960. Epub 2016 Dec 23

Eberhart T, Eigner K, Filik Y, Fruhwürth S, **Stangl H**, Röhl C.

The unfolded protein response is a negative regulator of scavenger receptor class B, type I (SR-BI) expression.

Biochem Biophys Res Commun. 2016 Oct 21;479(3):557-562

Wang L, Ladurner A, Latkolik S, Schwaiger S, Linder T, Hošek J, Palme V, Schilcher N, Polanský O, Heiss EH, **Stangl H**, Mihovilovic MD, Stuppner H, Dirsch VM, Atanasov AG.

Leoligin, the Major Lignan from Edelweiss (*Leontopodium nivale* subsp. *alpinum*), Promotes Cholesterol Efflux from THP-1 Macrophages.

J Nat Prod. 2016 Jun 24;79(6):1651-7

Wüstner D, Lund FW, Röhl C, **Stangl H**.

Potential of BODIPY-cholesterol for analysis of cholesterol transport and diffusion in living cells.

Chem Phys Lipids. 2016 Jan;194:12-28.

Schörghofer D, Kinslechner K, Preitschopf A, Schütz B, Röhl C, Hengstschläger M, **Stangl H**, Mikula M.

The HDL receptor SR-BI is associated with human prostate cancer progression and plays a possible role in establishing androgen independence.

Reprod Biol Endocrinol. 2015 Aug 7;13:88. doi: 10.1186/s12958-015-0087-z.

Meier SM, Wultsch A, Hollaus M, Ammann M, Pemberger E, Liebscher F, Lambers B, Fruhwürth S, Stojakovic T, Scharnagl H, Schmidt A, Springer A, Becker J, Aufricht C, Handisurya A, Kapeller S, Röhl C, **Stangl H**, Strobl W.

Effect of chronic kidney disease on macrophage cholesterol efflux.

Life Sci. 2015 Sep 1;136:1-6.

Wultsch A, Kaufmann U, Ott J, Stojakovic T, Scharnagl H, **Stangl H**, Strobl WM.

Profound Changes in Sex Hormone Levels during Cross-Sex Hormone Therapy of Transsexuals do not Alter Serum Cholesterol Acceptor Capacity.

J Sex Med. 2015 Jun;12(6):1436-9.

Ranftler C, Meisslitzer-Ruppitsch C, **Stangl H**, Röhl C, Fruhwürth S, Neumüller J, Pavelka M, Ellinger A.

2-Deoxy-D-glucose treatment changes the Golgi apparatus architecture without blocking synthesis of complex lipids.

Histochem Cell Biol. 2015 Apr;143(4):369-80.

Preitschopf A, Li K, Schörghofer D, Kinslechner K, Schütz B, Thi Thanh Pham H, Rosner M, Joo GJ, Röhl C, Weichhart T, **Stangl H**, Lubec G, Hengstschläger M, Mikula M.

mTORC1 is essential for early steps during Schwann cell differentiation of amniotic fluid stem cells and regulates lipogenic gene expression.

PLoS One. 2014 Sep 15;9(9):e107004.

Fruhwürth S, Kovacs WJ, Bittman R, Messner S, Röhl C, **Stangl H**.

Differential basolateral-apical distribution of scavenger receptor, class B, type I in cultured cells and the liver.

Histochem Cell Biol. 2014 Dec;142(6):645-55..

Röhl C, Eigner K, Fruhwürth S, **Stangl H**.

Bile acids reduce endocytosis of high-density lipoprotein (HDL) in HepG2 cells.

PLoS One. 2014 Jul 10;9(7):e102026.

Fruhwürth S, Krieger S, Winter K, Rosner M, Mikula M, Weichhart T, Bittman R, Hengstschläger M, **Stangl H**.

Inhibition of mTOR down-regulates scavenger receptor, class B, type I (SR-BI) expression, reduces endothelial cell migration and impairs nitric oxide production.

Biochim Biophys Acta. 2014 Jul;1841(7):944-53.

Fruhwürth S, Pavelka M, Bittman R, Kovacs WJ, Walter KM, Röhl C, **Stangl H**.

High-density lipoprotein endocytosis in endothelial cells.

World J Biol Chem. 2013 Nov 26;4(4):131-40.

Röhl C, Eigner K, Winter K, Korbelius M, Obrowsky S, Kratky D, Kovacs WJ, **Stangl H**.

Endoplasmic reticulum stress impairs cholesterol efflux and synthesis in hepatic cells. J Lipid Res. 2014 Jan;55(1):94-103.

Röhl C, **Stangl H**.

HDL endocytosis and resecretion.

Biochim Biophys Acta; 1831:1626-1633 (2013).

Schernthaner GH, **Stangl H**.

Reduced adiponectin receptor signalling accelerates atherosclerosis and may worsen the outcome in type 2 diabetes mellitus - another one of those missing links?

Atherosclerosis; 229:30-1 (2013).

Meisslitzer-Ruppitsch C, Röhl C, Ranftler C, **Stangl H**, Neumüller J, Pavelka M, Ellinger A.

Photooxidation technology for correlative light and electron microscopy.

Methods Mol Biol.; 931:423-36 (2013).

Top 10 Publications

Plochberger B, Röhrl C, Preiner J, Rankl C, Brameshuber M, Madl J, Bittman R, Ros R, Sezgin E, Eggeling C, Hinterdorfer P, **Stangl H**, Schütz GJ.

HDL particles incorporate into lipid bilayers - a combined AFM and single molecule fluorescence microscopy study.

Sci Rep. 2017 Nov 21;7(1):15886. doi: 10.1038/s41598-017-15949-7

Kinslechner K, Schörghofer D, Schütz B, Vallianou M, Wingelhofer B, Mikulits W, Röhrl C, Hengstschläger M, Moriggl R, **Stangl H**, Mikula M.

Malignant Phenotypes in Metastatic Melanoma are Governed by SR-BI and its Association with Glycosylation and STAT5 Activation.

Mol Cancer Res. 2017 Oct 3. doi: 10.1158/1541-7786.MCR-17-0292

Röhrl C, Eigner K, Winter K, Korbelius M, Obrowsky S, Kratky D, Kovacs WJ, **Stangl H**.

Endoplasmic reticulum stress impairs cholesterol efflux and synthesis in hepatic cells. J Lipid Res. 2014 Jan;55(1):94-103.

Cardilo-Reis L, Gruber S, Schreier SM, Drechsler M, Papac-Milicevic N, Weber C, Wagner O, **Stangl H**, Soehnlein O, Binder CJ.

Interleukin-13 protects from atherosclerosis and modulates plaque composition by skewing the macrophage phenotype.

EMBO Mol Med.; 4:1072-86 (2012).

Röhrl C, Meisslitzer-Ruppitsch C, Bittman R, Li Z, Pabst G, Prassl R, Strobl W, Neumüller J, Ellinger A, Pavelka M, **Stangl H**.

Combined light and electron microscopy using diaminobenzidine photooxidation to monitor trafficking of lipids derived from lipoprotein particles.

Curr Pharm Biotechnol. 2012 Feb;13(2):331-40

Röhrl C, Pagler TA, Strobl W, Ellinger A, Neumüller J, Pavelka M, **Stangl H**, Meisslitzer-Ruppitsch C.

Characterization of endocytic compartments after holo-HDL particle uptake in HepG2 cells.

Histochem Cell Biol. 33: 261-72 (2010).

Pagler TA, Rhode S, Neuhofer A, Laggner H, Strobl W, Hinterdorfer C, Volf I, Pavelka M, Eckhardt ER, van der Westhuyzen DR, Schütz GJ, **Stangl H**.

SR-BI-mediated high density lipoprotein (HDL) endocytosis leads to HDL resecretion facilitating cholesterol efflux.

J Biol Chem. 281:11193-111204 (2006).

Madl J, Rhode S, **Stangl H**, Stockinger H, Hinterdorfer P, Schütz GJ, Kada G.

A combined optical and atomic force microscope for live cell investigations.

Ultramicroscopy. 106:645-51 (2006).

Stangl H, Hyatt M, Hobbs HH.

Transport of Lipids from High and Low Density Lipoproteins via Scavenger Receptor – BI;

J. Biol. Chem. 274 (46): 32692-32698 (1999).

Stangl H, Cao G, Wyne KL, Hobbs HH.

Scavenger Receptor, Class B, Type I - dependent Stimulation of Cholesterol Esterification by High Density Lipoproteins, Low Density Lipoproteins, and Nonlipoprotein Cholesterol;

J. Biol. Chem. 273(47): 31002-31008 (1998).