

Cecilia Engdahl
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 436 40 Askim, Sweden
 Born: 10th of June 1983
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Higher education;

Master of Science in Medical Biology, Health science, Linköping University (2002-2006)
Basic education with in medicine and biology

Ethics, CTE, Linköping University (2005)
Basic ethics and bioethics

Teaching and Learning in Higher Education (2016-2018)
4 courses for improve my pedagogic skills in teaching higher education

Doctor's degree;

Ph.D., 11th of January 2013

Institute of Medicine, Sahlgrenska Academy, University of Gothenburg (2007-2013)
Arthritis and immune-mediated bone loss –role of estrogen signaling pathways
 ISBN 978-91-628-8577-9. Supervisor; Marie Lagerquist Co-supervisor; Hans Carlsten

Current position;

Researcher at Dep. of Rheum and Inflamm Research, University of Gothenburg (2018-)
Investigation of antibodies induction of bone loss and initiation of autoimmune diseases

Previous positions;

Postdoc at Dep. of Rheum and Inflamm Research, University of Gothenburg (2016-2018)
Investigation of estrogen regulation of antibodies and antibodies induction of bone loss

Postdoc at Dep. of Internal Medicine 3, University Clinic of Erlangen, FAU (2014-2017)
Research around the preclinical phase of autoimmunity

Postdoc at Centre for Bone and Arthritis research, University of Gothenburg (2013-2014)
Research within the field of arthritis and immune-mediated bone loss

Medical inflammation research, Lund University (2006)
Master thesis and project work in gene regulation of rheumatoid arthritis

Transfusion medicine, LMÖ, University hospital Linköping (2004-2006)
Employment part time as medical laboratory scientist (BMA/MTA)

Grants; (all as principal investigator)

GVs 80-årsfund, grant to cover laboratory expenses (400kSEK) (2019-2020) (2019)

Reumatiker förbundet, expenses (100kSEK) (2019) (2019)

O.E. och Edlas Johansson vetenskapliga stiftelse (100kSEK) (2019) (2019)

Åke Wiberg foundation, expenses (219kSEK) (2019) (2018)

Tore Nilsson foundation for medical research, expenses (70kSEK) (2019) (2018)

Bollan scholarship, animal cost (65kSEK) (2019-2020) (2018)

ALF-grant for young scientist, salary and expenses (900kSEK) (2018-2021) (2018)

Reumatiker förbundet, expenses (50kSEK) (2018) (2018)

Stiftelsen Lars Hiertas Minne, expenses (50kSEK) (2018) (2018)

Åke Wiberg foundation, expenses (200kSEK) (2018) (2017)

Tore Nilsson foundation for medical research, expenses (70kSEK) (2018)	(2017)
GVs 80-årsfound, grant to cover laboratory expenses (500kSEK) (2017-2018)	(2017)
SSMF, PostDoc scholarship and expenses (2.2 MSEK) (2017-2019)	(2015)
ELAN, salary for technical assistant and expenses (45kEURO) (2016-2017)	(2015)
VR. Int. Postdoc, salary and expenses (3.15 MSEK) (2014-2018)	(2013)

Supervising experience;

Supervisor, for a biology student, Master Thesis, Edina Sehic	(2017)
Co-supervisor, for a Ph.D. student, Jauquiline Nordqvist	(2016-)
Supervisor, for a PostDoc, Jasmin Raufer	(2016-2017)
Co-supervisor, for a Ph.D. student, Karin Gustafsson	(2014-)
Co-supervisor, for a pharmacology student, Master Thesis, Lea Wawryniak	(2009)

Teaching experience;

Teaching for Pharmaceutically, Autoimmunity	(2019-)
Teaching for Dietetics Program, Immunology, first-cycle	(2018-)
Course coordinator, Rheumatology for specialized nurses	(2017)
Course coordinator and teaching immunological laboratory technic, PhD students	(2017-)
Teaching for Health promotion, Physiology	(2017-2018)
Group discussion for Medical students, Basic Immunology	(2017-)
Teaching in Osteoimmunologi, for Ph.D. students and first level	(2010, 2014, 2017)
Group discussion for Medical students, scientific publications	(2009-2013 2017-)

Additional information;

Steering group member for Future Faculty Sahlgrenska Academy	(2017-)
Co-chair Future Faculty Sahlgrenska Academy	(2019-)
<i>Promotes the interests of early career researchers at Sahlgrenska Academy</i>	
Nyfiken på ledarskap	(2017-2018)
<i>A competence development course from Gothenburg University</i>	
Dubbelkursen	(2017)
<i>Team leader course organist of RISE with different participant from industry and academia</i>	

Langue;

Swedish (<i>Mother tongue</i>)
English (<i>Independent user</i>)
German (<i>Upper intermedia user</i>)

References;

Professor Georg Schett. Dep. of Internal Medicine 3, University Clinic of Erlangen, FAU
georg.schett@uk-erlangen.de +49 91318539193

Professor Hans Carlsten. Dep. of Rheum and Inflamm Research, University of Gothenburg
hans.carlsten@rheuma.gu.se +46 313424017

Publications; Cecilia Engdahl née Håkansson

Total number of publications: **29 peer-reviewed articles since 2007**

My publications include two accepted article, where I was the lead author, performed during my postdoc in *Journal of Bone and Mineral Research* (top-ranked journal in the bone field, Impact factor =6.1) and in *Arthritis Research therapy* (Impact factor =4.6), this second paper was also lifted as a High Light in *Nature Rheumatology*.

My publication list also includes me as leading author two times articles in *Arthritis & Rheumatism* (Impact factor =6.9). As well as publications in *Nature Medicine* (Impact factor =28) and three times in *Proc Natl Acad Sci* (Impact factor =9.7). etc.

Key articles;

Engdahl C, Bondt A, Harre U, Raufer J, Pfeifle R, Camponeschi A, Wuhrer M, Seeling M, Mårtensson I-L, Nimmerjahn F, Krönke G, Scherer H.U, Forsblad-d'Elia H, Schett G. Estrogen induces St6gal 1 expression and increases IgG sialylation in mice and patients with rheumatoid arthritis- a potential explanation for the increased risk of rheumatoid arthritis in postmenopausal women *Arthritis Res Ther*, 2018 May 2;20(1):84. (*Lifted as a highlight in Nature Reviews Rheumatology*, 14, 385 (2018) *Hormone status regulated autoantibody pathogenicity*)

Engdahl C, Bang H, Dietel K, Lang C.S. Harre U, Schett G. Periarticular bone loss in arthritis is induced by autoantibodies against citrullinated vimentin. *J Bone Miner Res*, 2017 Aug;32(8):1681-1691

Henning P, Ohlsson C, **Engdahl C**, Farman H, Windahl S, Carlsten H, Lagerquist MK. The effect of estrogen on bone requires ERalpha in non-hematopoietic cells but is enhanced by ERalpha in hematopoietic cells *Am J Physiol Endocrinol Metab*. 2014 Oct1;307(7):589-95

Engdahl C, Börjesson AE, Forsman FH, Andersson A, Stubelius A, Krust A, Chambon A, Islander U, Ohlsson C, Carlsten H, Lagerquist MK. The role of total and cartilage-specific ERalpha expression for the ameliorating effect of estrogen treatment on arthritis *Arthritis Res Ther*. 2014 Jul15;16(4)

Engdahl C, Lagerquist MK, Stubelius A, Andersson A, Studer E, Ohlsson C, Westberg L, Carlsten H, Forsblad-d'Elia H. Role of Androgen and Estrogen Receptors for the action of Dehydroepiandrosterone (DHEA) *Endocrinology*, 2014 Mar;155(2):889-96 8

Ohlsson C, **Engdahl C**, Fåk F, Andersson A, Windahl SH, Farman HH, Movérare-Skrtic S, Islander U, Sjögren K. Probiotics protect mice from ovariectomy-induced cortical bone loss *PLoS One*, 2014 Mar17;9(3)

Engdahl C, Lindholm C, Stubelius A, Ohlsson C, Carlsten H, Lagerquist MK. Periarticular bone loss in antigen-induced arthritis *Arthritis Rheum*, 2013 Nov;65(11):2857-65.

Sjögren K, **Engdahl C**, Henning P, Lerner UH, Tremaroli V Lagerquist MK, Bäckhed F, Ohlsson C. The Gut Microbiota Regulates Bone Mass in Mice *J Bone Miner Res*, 2012 Jun;27(6):1357-67

Ohlsson C, **Engdahl C**, Börjesson AE, Windahl SH, Studer E, Westberg L, Eriksson E, Koskela A, Tuukkanen J, Krust A, Chambon P, Carlsten H, Lagerquist MK. Estrogen receptor- α expression in neuronal cells affects bone mass. *Proc Natl Acad Sci USA*, 2012 Jan 17;109(3):983-88

Engdahl C, Jochems C, Windahl SH, Börjesson AE, Ohlsson C, Carlsten H, Lagerquist MK. Amelioration of collagen-induced arthritis and immune-associated bone loss through signaling via estrogen receptor alpha, and not estrogen receptor beta or G protein-coupled receptor 30. *Arthritis Rheum*, 2010 Feb;62(2):524-33.

Engdahl C, Jochems C, Gustafsson JA, van der Saag PT, Carlsten H, Lagerquist MK. In vivo activation of gene transcription via oestrogen response elements by a raloxifene analogue. *J Endocrinology*, 2009 Dec;203(3):349-56.

Collaborative articles;

Mohammad M, Nquyen MT, **Engdahl C**, Na M, Jarneborn A, Hu Z, Karlsson A, Pullerits R, Ali A, Götz F, Jin T. The YIN and YANG of lipoproteins in developing and preventing infectious arthritis by *Staphylococcus aureus*. *PLoS Pathogen*. 2019 Jun 21;15(6)

- Bozec A, Luo Y, **Engdahl C**, Figueiredo C, Bang H, Schett G. Abatacept blocks anti-citrullinated protein antibody and rheumatoid factor mediated cytokine production in human macrophages in IDO-dependent manner. *Arthritis Res Ther*. 2018 Feb 7;20(1):24.
- Andersson A, Törnqvist AE, Movérare-Skrtic S, Bernardi A, **Engdahl C**, Lagerquist MK, Carlsten H, Ohlsson C, Islander U. Roles of activating functions 1 and 2 of estrogen receptor α in estrogen receptor-mediated regulation of lymphopoiesis. *J Endocrinology*, 2018 Feb;236(2):99-109.
- Börjesson AE, Farman HH, Movérare-Skrtic S, **Engdahl C**, Antal MC, Koskela A, Tuukkanen J, Carlsten H, Krust A, Chambon P, Sjögren K, Lagerquist MK, Windahl SH, Ohlsson C. SERMs have substance specific effects on bone and these effects are mediated via ER α AF-1 in female mice. *Am J Physiol Endocrinol Metab*. 2016 Jun 1;310(11)
- Andersson A, Grahnemo L, **Engdahl C**, Stubelius A, Lagerquist MK, Carlsten H, Islander U. IL-17-producing $\gamma\delta$ T cells are regulated by estrogen during development of experimental arthritis. *Clin Immunol*. 2015 Dec;161(2):324-32
- Andersson A, Stubelius A, Nurkkala-Karlsson M, **Engdahl C**, Erlandsson M, Grahnemo L, Lagerquist MK, Islander U. Estrogen regulates T helper 17 phenotype and localization in experimental autoimmune arthritis. *Arthritis Res Ther*. 2015 Feb;17(1)
- Grahnemo L, Jochems C, Andersson A, **Engdahl C**, Ohlsson C, Islander U, Carlsten H. Possible role of lymphocytes in glucocorticoid-induced increase in trabecular bone mineral density. *J Endocrinology*, 2015 Jan;224(1):97-108
- Movérare-Skrtic S, Henning P, Liu X, Nagano K, Saito H, Börjesson AE, Sjögren K, Windahl SH, Farman H, Kindlund B, **Engdahl C**, Koskela A, Zhang F-P, Eriksson EE, Zaman F, Hammarstedt A, Isaksson H, Bally M, Kassem A, Lindholm C, Sandberg O, Aspenberg P, Säwendahl L, Feng JQ, Tuckermann J, Tuukkanen J, Poutanen M, Baron R, Lerner UH, Gori F, Ohlsson C. Osteoblast-derived WNT16 represses osteoclastogenesis and prevents cortical bone fragility fractures *Nature Medicine*. 2014 Nov;20 (11):1279-88
- Windahl SH, Börjesson AE, Farman HH, **Engdahl C**, Movérare-Skrtic S, Sjögren K, Lagerquist MK, Kindblom JM, Koskela A, Tuukkanen J, Pajevic PD, Feng JQ, Dahlman-Wright K, Antonson P, Gustafsson JÅ, Ohlsson C. Estrogen receptor- α in osteocytes is important for trabecular bone formation in male mice *Proc Natl Acad Sci USA*, 2013 Feb 5;110(6):2294-99
- Börjesson AE, Farman HH, **Engdahl C**, Koskela A, Sjögren K, Kindblom JM, Stubelius A, Islander U, Carlsten H, Antal MC, Krust A, Chambon P, Tuukkanen J, Lagerquist MK, Windahl SH, Ohlsson C. The role of activation function 1 and 2 of estrogen receptor- α for the effect of estradiol and Selective Estrogen Receptor Modulators (SERMs) in male mice *J Bone Miner Res*, 2012 May;28(5):1117-26
- Windahl SH, Saxon L, Börjesson AE, Lagerquist M, Frenkel B, Henning P, Lerner U, **Engdahl C**, Sjögren K, Antal MC, Krust A, Chambon P, Lanyon LE, Price JS, Ohlsson C. Estrogen Receptor- α is Required for the Osteogenic Response to Mechanical Loading in a Ligand-independent Manner involving its Activation Function 1 but not 2 *J Bone Miner Res*, 2013 Feb;28(2):291-301
- Trokovic N, Pöllänen R, Porola P, Stegaev V, Hatzel U, Tivesten A, **Engdahl C**, Carlsten H, Forsblad-d'Elia H, Fagman JB, Lagerquist MK, Kontinen YT. Exosomal secretion of death bullets, a new way of apoptotic escape? *Am J Physiol Endocrinol Metab*, 2012 Oct 15;303(8):E1015-24

Börjesson AE, Windahl SH, Karimian E, Eriksson EE, Lagerquist MK, **Engdahl C**, Antal MC, Krust A, Chambon P, Sävendahl L, Ohlsson C. The role of ER α and its AF-1 for growth plate closure in female mice. *Am J Physiol Endocrinol Metab*, 2012 Jun 1;302(11):E1381-89

Jochems C, Islander U, Erlandsson M, **Engdahl C**, Lagerquist M, Ohlsson C, Nandakumar KS, Holmdahl R, Carlsten H. Effects of oestradiol and raloxifene on the induction and effector phases of experimental postmenopausal arthritis and secondary osteoporosis. *Clin Exp Immunol*. 2011 Jul;165(1):121-29.

Börjesson AE, Windahl SH, Lagerquist MK, **Engdahl C**, Frenkel B, Movérare-Skrtic S, Sjögren K, Kindblom JM, Stubelius A, Islander U, Antal MC, Krust A, Chambon P, Ohlsson C. Roles of transactivating functions 1 and 2 of estrogen receptor-alpha in bone. *Proc Natl Acad Sci USA*, 2011 Apr 12;108(15):6288-93

Jochems C, Islander U, Erlandsson M, **Engdahl C**, Lagerquist M, Gjertsson I, Ohlsson C, Holmdahl R, Carlsten H. Role of endogenous and exogenous female sex hormones in arthritis and osteoporosis development in B10.Q-ncf1^{*/*} mice with collagen-induced chronic arthritis. *BMC Musculoskelet Disord*, 2010 Dec 16;11:284.

Jochems C, Lagerquist M, **Håkansson C**, Ohlsson C, Carlsten H. Long-term anti-arthritic and anti-osteoporotic effects of raloxifene in established experimental postmenopausal polyarthritis. *Clin Exp Immunol*, 2008 Jun;152(3):593-97.

Windahl SH, Lagerquist MK, Andersson N, Jochems C, Kallkopf A, **Håkansson C**, Inzunza J, Gustafsson JA, van der Saag PT, Carlsten H, Pettersson K, Ohlsson C. Identification of target cells for the genomic effects of estrogens in bone. *Endocrinology*, 2007 Dec;148(12):5688-95.

Popular science

Engdahl C: Summary of thesis work at Reumatikerförbundet.org, 2013

<https://reumatikerforbundet.org/forskning/avhandlingar/popularvetenskapliga-sammanfattningar/artrit-och-immunformedlad-benforlust-ostrogenets-r/>

Engdahl C: Östrogen skyddar mot artrit och inflammationsmedierad benförlust via östrogenreceptor alfa. Best practice Reumatologi, 2012