


Professor Gunnar Kratz

Eftergymnasiala utbildningar:

Militärtjänst: K4, Arvidsjaur; 1982-1983.

Läkarexamen; 1991, Karolinska Institutet.

Legitimerad läkare; 1993.

Medicine doktorsgrad; 1993. Avhandling: In vitro studies on keratinocyte derived growth factors, amniotic fluid and insulin like growth factors in cell proliferation and re-epithelialization of wounds, Handledare: Carl-Johan Dalsgaard och Anders Haegerstrand

Post-doc; 1995: Post-doc fellow vid Harvard Medical School / Shriners Burns Institute / Massachusetts General Hospital, Boston, USA.

Specialist i plastikkirurgi; 1997

Docent i ämnet plastikkirurgi; 1997.

Professor i plastikkirurgi; 2002.

Har genomgått ett flertal ledarskapsutbildningar, projektledarutbildningar samt pedagogiska utbildningar.

Arbetslivserfarenhet:

Nuvarande anställning sedan 2002: Professor i hand- and plastik kirurgi/Överläkare i plastikkirurgi. Linköpings universitet/Universitetssjukhuset i Linköping.

Tidigare anställningar av intresse för den sökta tjänsten:

1990-1993: Allmäntjänstgöring samt underläkaretjänst, kirurgiska kliniken, Karolinska Sjukhuset, Stockholm.

1993-1997: Specialistutbildning, Plastikkirurgiska kliniken. Karolinska sjukhuset, Stockholm.

1997-1998: Specialistläkare, Plastikkirurgiska kliniken, Karolinska sjukhuset, Stockholm.

1998-2000: Överläkare samt forskningsansvarig, plastikkirurgiska kliniken, Karolinska sjukhuset, Stockholm. Ansvarig för laboratoriet för experimentell plastikkirurgi

2000-2002: Överläkare samt lektor, plastikkirurgiska kliniken, Karolinska sjukhuset, Stockholm. Ansvarig för laboratoriet för experimentell plastikkirurgi samt klinikens totala forskningsaktivitet.

Föräldraledighet: Jan-feb 2004

Forskningsmeriter:

Handledare för examinerade forskningsstuderande (disputationsår):

Karin Hehenberger 1997
Magdalena Fossum 2004
Fredrik Huss 2005
Carl-Johan Gustafson 2006
Camilla Fredriksson 2008 (Lic)
Johan Junker 2009
Lisa Karlsson 2009 (Lic)
Sofia Pettersson 2009
Pehr Sommar 2010
Birgitta Svernlöv 2011
Erika Nyman 2015
Susanna Lönnqvist 2016
Jonathan Rakar 2016

Värd för post-docs:

Hans Johnson, 2003-2005
Fredrik Huss, 2007

Opponent vid disputationer:

Tor Sävsjö, Malmö
Margareta Lirvall, Linköping
Elisabeth Björntorp-Mark, Gothenburg
Al Varol, The University of New South Wales, Australia
Maik Stiehler, University of Aarhus, Denmark
Kim Alexander Tönseth, Oslo, Norway
Sofi Forsberg, Uppsala
Björn Schönmayr, Lund
Ola Borgquist, Lund
Kristo Nuutila, Helsinki, Finland
Erik Anesäter, Lund
Richard Lewin, Göteborg

Övrigt:

Förtroendeuppdrag (exempel):

Ordförande i Svensk plastikkirurgisk förening. 2012-2016
Vetenskapligt råd, Inspektionen för vård och omsorg/Socialstyrelsen. 2010-pågående
Medlem av editorial boards i Scand J of Surgery, Organogenesis and Läkartidningen. 2003-pågående
Medlem i två vävnadsområdes grupper (Vävnadsdirektivet). 2006-pågående
Medlem i styrelsen för rekonstruktionscenter, Universitetetssjukhuset, Linköping. 2002-2009
Medlem i anställningsnämnden vid medicinska fakulteten, Linköpings universitet. 2008-2011
Vetenskapligt råd, Mölnlycke Health Care AB. 2004-2011
Externt sakkunnig vid Socialstyrelsens utarbetande av kunskapsstöd för vård av transsexuella 2012-2014
Medlem i expertgruppen i samband med socialstyrelsens implementering av europeiska direktiven
beträffande användandet av humana celler och vävnader. 2002-2005,
Proprefekt, institutionen för biomedicin och kirurgi (IBK), Linköpings universitet. 2004-2007
Terminsansvarig vid läkarprogrammet vid Linköpings universitet 2015-pågående.

Inbjuden föreläsare (exempel):

Italian Urologic Association, Ancona
Pittsburgh initiative for tissue engineering
National University of Singapore,
Mark Evans International Meeting-Tissue Engineering
KOL meeting on wound healing, Amsterdam
European Urology Association, annual meeting, Wien
The Royal Swedish Academy of Engineering Sciences, Stockholm
Acta Chirurgica Jubilee lectures, Stockholm
The dermatological society in Sweden, Gothenburg
The Nordic Urology Society, Gothenburg
European Tissue Repair Society 16th Annual Meeting, Pisa, Italy
Visiting Professor/Invited Speaker, Harvard Medical School, Boston
Stem Cell and Tissue Engineering in Plastic Surgery, Samsun, Turkey
Swedish National meeting of endocrinologists
The 34th congress of the Scandinavian Association of Plastic Surgeons.
Astellas Scientific Roadshow, Göteborg, Malmö och Stockholm
NFOG, Stockholm 2015
SFIOG, Jönköping 2015
Nordiskt brännskademöte 2016
Scandinavian Plastic Surgery 2016

Publikationer:

Referee-granskade originalartiklar:

G. Kratz. In vitro studies on keratinocyte derived growth factors, amniotic fluid and insulin like growth factors in cell proliferation and re-epithelialization of wounds. Thesis.

G. Kratz, A. Hægerstrand, C-J Dalsgaard. Conditioned medium from cultured human keratinocytes has growth stimulatory properties on different human cell types. *J Invest Dermatol* 1991; 97:1039-1043.

G. Kratz, M. Lake, K. Ljungström, G. Forsberg, A. Hægerstrand, M. Gidlund. Effect of recombinant IGF binding protein-1 on primary cultures of human keratinocytes and fibroblasts: Selective enhancement of IGF-1 but not IGF-2-induced cell proliferation. *Exp Cell Res* 1992; 202:381-385.

G. Kratz, A. Hægerstrand, B. Palmer. Growth stimulatory effects of amniotic fluid on human cells related to wound healing. *Eur J Plast Surg.* 1993;16:130-133.

G Kratz, Haegerstrand A, Dennerman A, Wikström H, Gidlund M, Palmer B. A new invitro model for human wound-healing – effekt of KCM, Amniotic-fluid and IGFs. *J Cell Biochem* 1993;53. 133

G. Kratz, M. Lake, M. Gidlund. Insulin like growth factor-1 and-2 and their role in the re-epithelialisation of wounds; interactions with insulin like growth factor binding protein type 1. *Scand J Plast Reconstr Hand Surg* 1994; 28:107-112.

G. Kratz, B. Palmer, A. Hægerstrand. Effects of keratinocyte conditioned medium, amniotic fluid and EGF in reepithelialization of human skin wounds in vitro. *Eur J Plast Surg* 1995;18:209-213.

G. Kratz, K. Jansson, M. Gidlund, A Hægerstrand. Keratinocyte conditioned medium stimulates type IV collagenase synthesis in cultured human keratinocytes and fibroblasts. *Br J Dermatol* 1995;133:842-846.

I Mitsuse, **G Kratz**, A Hægerstrand, M Ståhle-Bäckdahl. Collagenase expression is rapidly induced in ulcer edge keratinocytes after acute injury in human skin; persists during healing and stops at re-epithelialization. *J Invest Dermatol* 1995;104;479-483.

K Jansson, **G Kratz**, A Hægerstrand. Characterization of a new in vitro model for studies of reepithelialization in human partial thickness wounds. *In Vitro Cell Dev Biol-Animal* 1996;32;534-540

G. Kratz, B. Jonzon, A. Hultgård-Nilsson, A. Hægerstrand. Characterization and partial purification of a keratinocyte derived growth factor with wound healing properties. *Cell Biochem.* 1997;15;153-162.

P Emanuelsson, **G Kratz**. Characterization of a new *in vitro* burn wound model. *Burns* 1997;23;32-36.

G Kratz, C Arnander, J Swedenborg, M Back, C Falk, I Gouda, O Larm. Heparin-chitosan complexes stimulate wound healing in human skin. *Scand J Plast Reconstr Hand Surg*, 1997;31; 119-123.

K Hehenberger, K Brismar, F Lind, **G Kratz**. Dose-dependent hyperbaric oxygen stimulation of cell proliferation in human fibroblasts derived from normal skin and chronic diabetic foot ulcers. *Wound Healing and Regeneration* 1997;5;147-150.

G Kratz, CC Compton. Tissue expression of transforming growth factor-beta 1 and alpha during wound healing in human skin explants. *Wound Healing and Regeneration* 1997: 5: 222-8.

K Hehenberger, **G Kratz**, A Hansson, K Brismar. Fibroblasts derived from human chronic diabetic wounds have a decreased proliferation rate, which is recovered by the addition of heparin. *J Dermatol Sci* 1998;16;144-151

C-J Gustafson, Jan Eldh, **G Kratz**. Culture of human urothelial cells on a cell-free dermis for autotransplantation. *Eur Urol* 1998;33;503-506.

G Kratz. Modeling of wound healing processes in human skin using tissue culture. *Microsc Res Tech* 1998;42;345-350.

Compton CC, Warland G, **Kratz G**. Melanocytes in Cultured Epithelial Grafts Are Depleted with Serial Subcultivation and Cryopreservation: Implications for Clinical Outcome. *J Burn Care Rehabil* 1998;19;330-336.

G Kratz, C Arnander, M Back, O Larm. Immobilized heparin accelerates the healing of human wounds *in vivo*. *Scand J Plast Reconstr Hand Surg*, 1998;32;381-385.

C-J Gustafson, **G Kratz**. Cultured autologous keratinocytes on a cell free dermis in the treatment of full-thickness wounds. *Burns*, 1999;25;331-335.

E Morcos, OT Jansson, J Adolfsson, **G Kratz**, NP Wiklund. Endogenously formed nitric oxide modulates cell growth in bladder cancer cell lines. *Urology* 1999; 53:1252-1257.

R Rigler, A Pramanik, P Jonasson, **G Kratz**, O. T. Jansson, P-Å Nygren, S Ståhl, K Ekberg, B-L Johansson, S Uhlén, M Uhlén, H Jörnvall, J Wahren. Specific binding of proinsulin C-peptide to human cell membranes. *Proc Natl Acad Sci U S A*, 1999;96:13318-23.

Kratz, C-J Gustafson, F Huss, E Neovius. Recreation of tissue--the plastic surgeon's spring-board in to the 21st century. *Lakartidningen* 1999;44.

K Ekberg, R Rigler, A Pramanik, **G Kratz**, BL Johansson, M Uhlen, H Jörnvall, J Wahren. Specific binding of proinsulin C-peptide to human cell membranes. *Diabetologia*. 1999;42.

C Kratz, A Tollbäck, **G Kratz**. Effects of stretching on cell proliferation in human burn scars. *Scand J Plast Reconstr Hand Surg*, 2001;35:57.

- C Gustafson, **G Kratz**. Tissue engineering in urology. *Curr Opin Urol*. 2001;11; 275-279.
- JD Heilborn, MF Nilsson, **G Kratz**, G Weber, O Sorensen, M Ståhle-Bäckdahl. Human cathelicidin antimicrobial peptide is induced in skin wounding - Active peptide is detected in physiologic healing but not in chronic nonhealing wounds. *J Invest Dermatol* 117(3):767-767
- Huss FR, **Kratz G**. Mammary epithelial cell and adipocyte co-culture in a 3-D matrix: the first step towards tissue-engineered human breast tissue. *Cells Tissues Organs*. 2001;169(4):361-7.
- Jansson K, Haegerstrand A, **Kratz G**. A biodegradable bovine collagen membrane as a dermal template for human in vivo wound healing *Scand J Plast Reconstr Surg Hand Surg*. 2001 Dec;35(4):369-75.
- Huss FR, **Kratz G**. Adipose tissue processed for lipoinjection shows increased cellular survival in vitro when tissue engineering principles are applied. *Scand J Plast Reconstr Surg Hand Surg*. 2002;36(3):166-71.
- Fossum M, Gustafson CJ, Nordenskjold A, **Kratz G**. Isolation and in vitro cultivation of human urothelial cells from bladder washings of adult patients and children. *Scand J Plast Reconstr Surg Hand Surg*. 2003;37(1):41-5.
- Heilborn JD, Nilsson MF, **Kratz G**, Weber G, Sorensen O, Borregaard N, Ståhle-Bäckdahl M. The Cathelicidin Anti-Microbial Peptide LL-37 is Involved in Re-Epithelialization of Human Skin Wounds and is Lacking in Chronic Ulcer Epithelium. *J Invest Dermatol*. 2003 Mar;120(3):379-89.
- G Kratz**, S Asko-Seljaara. Plastic surgery. *Scand J Surg*. 2003;92(4):239.
- E Neovius, **G Kratz**. Tissue-engineering by co-cultivating human elastic chondrocytes and keratinocytes in fibrin glue. *Tissue Engineering*. *Tissue engineering* 2003;9; 365-369.
- G Kratz**, F Huss. Tissue engineering-body parts from the Petri dish. *Scand J Surg*. 2003;92:241-7.
- Huss F, Erlandsson U, Cooray V, **Kratz G**, Sjöberg F. Lightning injuries--a mixture of electrical, thermal and multiple trauma *Lakartidningen*. 2004 Jul 8;101(28-29):2328-31.
- Fossum M, Nordenskjold A, **Kratz G**. Engineering of multilayered urinary tissue in vitro. *Tissue Eng*. 2004 Jan-Feb;10(1-2):175-80.
- Kratz G**. Body parts from the laboratory bench. *Br J Surg*. 2005 Apr;92(4):385-6.
- E Ulfarsson, A Karström, S Yin, A Girnita, D Vasilcanu, M Thoren, **G Kratz**, J Hillman, M Axelson, O Larsson, L Girnita. Expression and growth dependency of the insulin-like growth factor I receptor in craniopharyngioma cells: a novel therapeutic approach. *Clin Cancer Res*. 2005 Jul 1;11(13):4674-80.
- Fossum M, Lundberg F, Holmberg K, Schoumans J, **Kratz G**, Nordenskjold A. Long-term culture of human urothelial cells-a qualitative analysis. *Cells Tissues Organs*. 2005;181(1):11-22.
- Garvin S, Nilsson UW, Huss FR, **Kratz G**, Dabrosin C. Estradiol increases VEGF in human breast studied by whole-tissue culture. *Cell Tissue Res*. 2006 Mar 28
- Kratz G**. Facial transplantation, playground or medical achievement? *Lakartidningen*. 2007 Jan 24-30;104(4):204-5.
- M. Fossum, J. Svensson, **G. Kratz**, A. Nordenskjöld. Autologous in vitro cultured urothelium in hypospadias repair. *Journal of Pediatric Urology* 2007 ; 3: 10-18.

Huss FR, Junker JP, Johnson H, **Kratz G**. Macroporous gelatine spheres as culture substrate, transplantation vehicle, and biodegradable scaffold for guided regeneration of soft tissues. In vivo study in nude mice. *J Plast Reconstr Aesthet Surg*. 2007;60(5):543-55.

Gustafson CJ, Birgisson A, Junker J, Huss F, Salemark L, Johnson H, **Kratz G**. Employing human keratinocytes cultured on macroporous gelatin spheres to treat full thickness-wounds: an in vivo study on athymic rats. *Burns*. 2007 Sep;33(6):726-35. Epub 2007 Apr 30.

Junker JP, Kratz C, Tollbäck A, **Kratz G**. Mechanical tension stimulates the transdifferentiation of fibroblasts into myofibroblasts in human burn scars. *Burns*. 2008 Nov;34(7):942-6. Epub 2008 May 8.
Fredriksson C, **Kratz G**, Huss F. Transplantation of cultured human keratinocytes in single cell suspension: a comparative in vitro study of different application techniques. *Burns*. 2008 Mar;34(2):212-9.

Fredrik Huss; Erika Nyman; Carl-Johan Gustafson; Katrin Gissselfält; Elisabeth Liljensten; **Gunnar Kratz**. Characterization of a new degradable polymer scaffold for regeneration of the dermis: In vitro and in vivo human studies. *Organogenesis*, Vol 4(2008): s. 195 – 200.

Pettersson S., Wetterö J., Tengvall P., **Kratz G**. Human articular chondrocytes on macroporous gelatin microcarriers form structurally stable constructs with blood-derived biological glues in vitro. *J Tissue Eng Regen Med*. 2009 Aug;3(6):450-60.

L.K. Karlsson, J.P.E. Junker, M. Grenegård, G. Kratz. Human Dermal Fibroblasts: a Potential Cell Source for Endothelialization of Vascular Grafts. *Ann Vasc Surg*. 2009 Sep-Oct;23(5):663-74.

Fredriksson C, **Kratz G**, Huss F.. Accumulation of silver and delayed wound healing in human skin: an ex vivo study of different silver dressings. *Wounds* 2009. Volume 21 - Issue 5 - May, 2009.

Sommar P, Pettersson S, Ness C, Johnson H, **Kratz G**, Junker JP Engineering three-dimensional cartilage- and bone-like tissues using human dermal fibroblasts and macroporous gelatine microcarriers. *J Plast Reconstr Aesthet Surg*. 2010 Jun;63(6):1036-46

Fredrik R.M. Huss, Erika Nyman, Johanna S Bolin, **Gunnar Kratz**. Use of macroporous gelatine spheres as a biodegradable scaffold for guided tissue regeneration of healthy dermis in humans: an in vivo study, *J Plast Reconstr Aesthet Surg*. 2010 May;63(5):848-57.

Junker J, Sommar P, Skog M, Johnson H, Kratz G. Adipogenic, Chondrogenic and Osteogenic Differentiation of Human Dermal Fibroblasts. *Cells Tissues Organs*. 2010;191(2):105-18.

Tønseth KA, Bjark T, **Kratz G**, Gross A, Kirschner R, Schreiner T, Diseth TH, Haraldsen I. Sex reassignment surgery in transsexuals. *Tidsskr Nor Laegeforen*. 2010 Feb 25;130(4):376-9.

H Seland, C-J Gustafson, H Johnson, JP Junker, **G Kratz**. Transplantation of acellular dermis and keratinocytes cultured on porous biodegradable microcarriers into full-thickness skin injuries on athymic rats. *Burns*, 2011 Feb;37(1):99-108.

Pettersson S, Wetterö J, Tengvall P, **Kratz G**. Cell expansion of human articular chondrocytes on macroporous gelatine scaffolds-impact of microcarrier selection on cell proliferation. *Biomed Mater*. 2011 Dec;6(6):065001.

Rakar J, Lönnqvist S, Sommar P, Junker J, **Kratz G**. Interpreted gene expression of human dermal fibroblasts after adipo-, chondro- and osteogenic phenotype shifts. *Differentiation*. 2012 Nov;84(4):305-13. Epub 2012 Sep 27.

Nyman E, Huss F, Nyman T, Junker J, **Kratz G**. Hyaluronic acid, an important factor in the wound healing properties of amniotic fluid: In vitro studies of re-epithelialisation in human skin wounds. *J Plast Surg Hand Surg*. 2013 Apr;47(2):89-92. 2013 Jan 29.

Jangamreddy JR, Ghavami S, Grabarek J, **Kratz G**, Wiechec E, Fredriksson BA, Rao Pariti RK, Cieślak-Pobuda A, Panigrahi S, Łos MJ. Salinomycin induces activation of autophagy, mitophagy and affects mitochondrial polarity: differences between primary and cancer cells. *Biochim Biophys Acta*. 2013 Sep;1833(9):2057-69.

Rakar J, Krammer MP, **Kratz G**. Human melanocytes mitigate keratinocyte-dependent contraction in an in vitro collagen contraction assay. *Burns*. 2014 Nov 22. pii: S0305-4179(14)00374-X. doi: 10.1016/j.burns.2014.10.034.

Sommar P, Junker JP, Strandenes E, Ness C, Hansson T, Johnson H, **Kratz G**. Osteogenically-induced human dermal fibroblasts as a tool to regenerate bone. *J Plast Surg Hand Surg*. 2013 Feb;47(1):8-13.

Junker JP, Lönnqvist S, Rakar J, Karlsson LK, Grenegård M, **Kratz G**. Differentiation of human dermal fibroblasts towards endothelial cells. *Differentiation*. 2013 Feb;85(3):67-77.

Lönnqvist S, Briheim K, **Kratz G**. Non-occlusive topical exposure of human skin in vitro as model for cytotoxicity testing of irritant compounds. *Toxicol Mech Methods*. 2015 Oct 8:1-6.

Cieślak-Pobuda A, Jain MV, **Kratz G**, Rzeszowska-Wolny J, Ghavami S, Wiechec E. The expression pattern of PFKFB3 enzyme distinguishes between induced-pluripotent stem cells and cancer stem cells. *Oncotarget*. 2015 Oct 6;6(30):29753-70.

Lönnqvist S, Rakar J, Briheim K, **Kratz G**. Biodegradable Gelatin Microcarriers Facilitate Re-Epithelialization of Human Cutaneous Wounds - An In Vitro Study in Human Skin. *PLoS One*. 2015 Jun 10;10(6):e0128093.

Persson K, Lönnqvist S, Tybrandt K, Gabrielsson R, Nilsson D, **Kratz G**, Berggren M. Matrix Addressing of an Electronic Surface Switch Based on a Conjugated Polyelectrolyte for Cell Sorting. *Advanced Functional Materials* 2015; 25 (45): 7056-7063

Lönnqvist S, Emanuelsson P, **Kratz G**. Influence of acidic pH on keratinocyte function and re-epithelialisation of human in vitro wounds. *J Plast Surg Hand Surg*. 2015;49(6):346-52.

Rakar J, Krammer MP, **Kratz G**. Human melanocytes mitigate keratinocyte-dependent contraction in an in vitro collagen contraction assay. *Burns*. 2015 Aug;41(5):1035-42.

Lönnqvist S, Briheim K, **Kratz G**. Non-occlusive topical exposure of human skin in vitro as model for cytotoxicity testing of irritant compounds. *Toxicol Mech Methods*. 2015 Oct 8:1-6.

Böcker och bokkapitel:

Författare till kapitlet "wound healing" i "Kirurgi" Eds: B Hamberger, U Haglund. Liber. ISBN 91-47-05065

Medförfattare till STRAMAs consensus bok rörande hudinfektioner.

Medförfattare till Scandinavian textbook of plastic surgery.

From Basic Wound Healing to Modern Skin Engineering, Artificial Organs Series: New Techniques in Surgery Series , Vol. 4 Hakim, Nadey S. (Ed.) 2009, X, 190 p. 64 illus., 53 in color., Hardcover ISBN: 978-1-84882-281-8. Springer-Verlag London Limited 2009

Populärvetenskapliga bidrag:

Har tillsammans med fotograf Lennart Nilsson deltagit i produktionen av TV-program om sårläkning.

Har vid ett stort antal tillfällen blivit intervjuvad i TV, radio och tidningar. Exempelvis i produktionerna: Efter tre, Aktuellt, Rapport, Utbildningsradion, Vetandets värld, Eftersnack, Öst nytt, Morgon Zoo, Aftonbladet, Expressen, Forskning och Framsteg, Dagens Nyheter, Forskarliv med flera.

Har deltagit i ett flertal TV-produktioner som exempelvis Nova, Hjärnkontoret, Fråga Olle dokumentär, TV-universitetet, Fråga doktorn och 69 saker du alltid velat veta om sex, Plus m. fl. Huvudsakligen har programmen berört forskningsområden så som tissue engineering, stamceller och sårläkning samt könskorrigering kirurgi.

Har hållit ett stort antal offentliga föreläsningar kring forskning, sårläkning, vävnadsodling, könskorrigering m.m.