

CURRICULUM VITAE

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EDUCATION AND TRAINING

- 1989 University of Tübingen, Tübingen, Germany
Biology, Diplom (M.S.)
Mentor: Prof. Dr. Hans J. Lipps
- 1993 University of Tübingen, Tübingen, Germany
Genetics, Dr. rer. nat. (Ph.D.)
Mentor: Prof. Dr. Hans J. Lipps
- 1993-1996 Postdoctoral Research Fellow, Department of Dermatology,
University of Michigan, Ann Arbor, Michigan
Mentor: Dr. James T. Elder
- 1997-1998 Research Associate, Department of Dermatology, University of
Michigan, Ann Arbor, Michigan

ACADEMIC APPOINTMENTS

- 1998–present Research Investigator, Department of Dermatology,
University of Michigan, Ann Arbor, Michigan

RESEARCH INTERESTS

Epidermal growth factor receptor (EGFR) signaling
ErbB regulation of keratinocyte migration, proliferation and survival
Metalloproteinase regulation of ErbB signaling
Epithelial-mesenchymal transition
Wound Repair

GRANT SUPPORT

Active

National Institutes of Health
“Metalloproteinase regulation of ErbB signaling in skin”
1K01-AR050462
Principal Investigator
07/15/06 – 06/30/11

National Institutes of Health
“Metalloproteinase regulation of ErbB signaling in skin”
5R03-AR049420
Principal Investigator
04/01/04 – 03/31/07

Recent

Dermatology Foundation Research Career Development Award
“ErbB / Integrin Regulation of Re-epithelialization”
Principal Investigator
07/01/98–02/28/02

University of Michigan Medical School Clinical Research Partnership
Fund
“JNK/TGF-Beta Signaling in Cutaneous Wound Healing”
Co-Investigator
02/01/99 – 01/31/01

Dermatology Foundation Research Grant
“ErbB / Integrin Regulation of Re-epithelialization”
Principal Investigator
07/01/99 – 06/30/00

Dermatology Foundation Research Fellowship
“EGF Receptor Regulation of Apoptosis in Wound Healing”
07/01/97 - 06/30/98

Dermatology Foundation Research Grant
“Role of Keratinocyte EGF Receptor Activation in Human Skin
Angiogenesis”
07/01/95– 06/30/96

HONORS AND AWARDS

- 1991 Ph.D. Student Travel Award (IV. Int. Congress in Ciliate Molecular Biology, Asilomar, California), Teufel Foundation, Germany
- 1993 Magna cum Laude, University of Tübingen, Germany
- 1995 American Society for Dermatologic Surgery Research Grant Award
- 1997 Paul Janssen Dermatology Foundation Research Fellowship Award
- 1998 -2001 Arden/Lever/Chesebrough-Pond's Dermatology Foundation Research Career Development Award
- 1999 Dermatology Foundation Research Grant Award

SEMINARS AND INVITED PRESENTATIONS

- 1992 Annual Meeting of the German Society of Genetics, Tübingen, Germany, "The organization of internal telomeric repeats in the polytene chromosomes of *Stylonychia lemnae*".
- 1994 Annual Meeting of the Society of Investigative Dermatology, Baltimore, MD, "Selective overexpression of heparin-binding EGF-like growth factors in malignant and regenerative epidermal hyperplasia".
- 1995 Research Conference of the Department of Dermatology, University of Michigan, Ann Arbor, MI, "EGF receptor regulation of EGF-like growth factor mRNA stability in keratinocytes".
- 1996 Annual Meeting of the Society of Investigative Dermatology, Washington DC, "Autoinductive EGF receptor activation is an important early event in cutaneous wound healing"
- 1996 Monthly Research Conference of the Cancer Research Division of Parke Davis Pharmaceutical Research/Warner Lambert, Ann Arbor, MI, "Autoinductive EGF receptor activation is an important early event in cutaneous wound healing"
- 1997 Annual Meeting of the Society of Investigative Dermatology, Washington DC, "Epidermal growth factor receptor activation mediates keratinocyte survival via *bcl-X_L*"
- 1998 Scientific Symposium at Unilever Research US Laboratory, Edgewater, NJ, "ErbB receptor expression and function in cutaneous wound healing"
- 1998 Research Conference of the Department of Dermatology, University of Michigan, Ann Arbor, MI, "EGF receptor activation and function in wound healing"

- 1999 Annual Meeting of the Society of Investigative Dermatology, Chicago, IL, "Early gene responses in organ culture are MAP kinase-dependent, whereas keratinocyte outgrowth is p38-dependent".
- 2000 Research Conference of the Department of Dermatology, University of Michigan, Ann Arbor, MI, "Multiple ErbB receptors are expressed and functional in keratinocytes and skin".
- 2002 Research Conference of the Department of Dermatology, University of Michigan, Ann Arbor, MI, "Metalloproteinases stimulate ErbB-dependent ERK signaling in human skin organ culture".
- 2003 Research Conference of the Department of Dermatology, University of Michigan, Ann Arbor, MI, "Metalloproteinase-mediated, context-dependent activation of EGF-like growth factors in keratinocytes".
- 2006 Annual Meeting of the Society of Investigative Dermatology, Philadelphia, PA, "Differential expression and function of EGF receptor ligands influence autocrine keratinocyte proliferation and morphology".

MEMBERSHIPS IN PROFESSIONAL SOCIETIES

- 1996 Center for Organogenesis, University of Michigan, Ann Arbor MI
 1998 Society of Investigative Dermatology, Cleveland, OH

SCIENTIFIC ACTIVITIES

Ad Hoc Journal Reviewer

- 1998 - Drug Discovery Today
 1998 - Archives of Dermatological Research
 1999 - American Journal of Pathology
 1999 - British Journal of Dermatology
 1999 - Journal of Investigative Dermatology
 2000 - American Journal of Physiology

BIBLIOGRAPHY

Peer-Reviewed Publications

1. **Stoll S**, Schmid M, and Lipps HJ: The organization of macronuclear sequences associated with C₄A₄-repeats in the polytene chromosome stage of *Stylonychia lemnae*. Chromosoma 100:300-304, 1991.
2. **Stoll S**, Zirlik T, Maercker C, and Lipps HJ: The organization of internal telomeric sequences in the polytene chromosomes of *Stylonychia lemnae*. Nucleic Acids Research 21:1783-1788, 1993.

3. Hardas BD, Zhao XP, Zhang J, Xia L-Q, **Stoll S**, Elder JT: Assignment of psoriasin to human chromosomal band 1q21. Journal of Investigative Dermatology 106:753-758, 1996.
4. Andersen LB, Xia L-Q, **Stoll S**, Zhao XP, Elder JT: Lineage-specific CaN19 expression in human skin: lack of expression in normal melanocytes. Journal of Dermatological Science 12:69-72, 1996.
5. Xia L-Q, **Stoll SW**, Liebert M, Ethier SP, Carey T, Esclamado R, Carroll W, Johnson T, Elder JT: CaN19 expression in benign and malignant hyperplasia of the skin and oral mucosa: Evidence for a role in regenerative differentiation. Cancer Research 57: 3055-3062, 1997.
6. Maercker C, **Stoll S**, Rosenkranz K, Becker E-M, Lipps HJ: A family of repetitive sequences eliminated late during macronuclear development of the hypotrichous ciliate *Stylonychia Lemnae*. Developmental Genetics 21 (3): 201-211, 1997.
7. **Stoll S**, Garner W, Elder J: Heparin-binding ligands mediate autocrine EGF receptor activation in skin organ culture. Journal of Clinical Investigation 100 (5): 1271-1281, 1997.
8. **Stoll SW**, Zhao XP, Elder JT: EGF receptor activation stimulates transcription of CaN19 (S100A2) in human keratinocytes. Journal of Investigative Dermatology 111: 1092-1097, 1998.
9. **Stoll SW**, Benedict M, Mitra R, Hiniker A, Elder JT, Nuñez G: EGF receptor signaling promotes keratinocyte survival by inhibiting apoptosis through *bcl-X_L*. Oncogene 16: 1493-1499 1998.
10. **Stoll SW** and Elder JT: Retinoid regulation of heparin-binding EGF-like growth factor expression in human keratinocytes and skin. Experimental Dermatology 7: 391-397, 1998.
11. Varani J, Kang S, **Stoll S**, Elder JT: Human psoriatic skin in organ culture: Comparison with normal skin exposed to exogenous growth factors and effects of an antibody to the EGF receptor. Pathobiology 66: 252-259, 1998.
12. **Stoll SW** and Elder JT: Differential regulation of EGF-like growth factor genes in human keratinocytes. Biochemical and Biophysical Research Communications 265: 214-221, 1999.
13. Deshpande R, Woods TL, Fu J, Zhang T, **Stoll SW**, Elder JT: Biochemical characterization of S100A2 in human keratinocytes: subcellular localization, dimerization, and oxidative cross-linking. Journal of Investigative Dermatology 115:477-85, 2000.
14. **Stoll SW**, Chia NVC, Nair RP, Woods TL, Stuart P, Henseler T, Jenisch S, Christophers E, Voorhees JJ, Elder JT: S100A2 coding sequence polymorphism: Characterization and lack of association with psoriasis. Clinical and Experimental Dermatology 26: 79-83, 2001.
15. **Stoll SW**, Kansra S, Peshick P, Fry D, Leopold W, Wiesen JF, Sibilica M, Werb Z, Derynck R, Wagner E, Elder JT: Differential utilization and localization of ErbB Receptor tyrosine kinases in skin compared to normal and malignant keratinocytes. Neoplasia 3: 339-350, 2001.
16. Varani J, Zeigler M, Dame MK, Kang S, Fisher GJ, Voorhees JJ, **Stoll SW**, Elder JT: Heparin-binding epidermal-growth-factor-like growth factor activation of keratinocyte ErbB receptors mediates epidermal hyperplasia, a

- prominent side-effect of retinoid therapy. Journal of Investigative Dermatology 117: 1335-1341, 2001.
17. **Stoll SW**, Kansra S, Elder JT: Metalloproteinases stimulate ErbB-dependent ERK signaling in human skin organ culture. Journal of Biological Chemistry 277: 26839-45, 2002.
 18. Kansra S, **Stoll SW**, Elder JT: Differential cytoskeletal association of ErbB1 and ErbB2 during keratinocyte differentiation. Biochemical and Biophysical Research Communications, 295: 1108-17, 2002.
 19. **Stoll SW**, Kansra S, Elder JT: Keratinocyte outgrowth from human skin explant cultures is dependent upon p38 signaling. Wound Repair and Regeneration, 11: 346-53, 2003.
 20. *Kansra S, ***Stoll SW**, Johnson JL, Elder JT: Autocrine ERK activation in normal human keratinocytes: metalloproteinase-mediated release of amphiregulin triggers signaling from ErbB1 to ERK. Molecular Biology of the Cell, 15: 4299-4309, 2004.
* indicates equal contributions
 21. Elder, JT, Kansra S, **Stoll SW**. Autocrine regulation of keratinocyte proliferation. J Clin Ligand Assay, 27: 137-142, 2004.
 22. Kansra S, **Stoll SW**, Johnson JL, Elder JT: Src family kinase inhibitors block amphiregulin-mediated autocrine ErbB signaling in normal human keratinocytes. Molecular Pharmacology, 67: 1145-57, 2005.

Abstracts

1. **Stoll S**, Eder C, and Lipps HJ: Macronuclear DNA sequence organization in the polytene chromosomes of *Stylonychia lemnae*. IV. Int. Congress in Ciliate Molecular Biology, Asilomar, California, 95: 1991.
2. **Stoll S**, Zirlik T, Lipps HJ: The organization of internal telomeric repeats in the polytene chromosomes of *Stylonychia lemnae*. Annual Meeting of the German Society of Genetics, Tübingen, 1992.
3. Xia L-Q, **Stoll SW**, Hardas BD, Liebert M, Grossman HB, Carroll W, Esclamado R, Beer DG, Nelson BR, Johnson TM, Elder JT: Loss of CaN19 expression is a common event during epithelial tumor progression in vivo. Journal of Investigative Dermatology, 102 (4):652A, 1994.
4. **Stoll SW**, Xia L-Q, Elder JT: Selective overexpression of heparin-binding EGF-like growth factors in malignant and regenerative epidermal hyperplasia. Journal of Investigative Dermatology, 102 (4):531A, 1994.
5. **Stoll SW**, Elder JT: EGF receptor activation regulates expression of multiple keratinocyte-derived EGF-like growth factor mRNAs by increasing transcript stability. Journal of Investigative Dermatology, 104 (4):675A, 1995.
6. **Stoll SW**, Elder JT: Heparin-binding EGF-like growth factors induce vascular permeability factor via autocrine EGF receptor activation: Early events in wound healing. Journal of Investigative Dermatology, 104 (4):678A, 1995.

7. Xia L-Q, **Stoll SW**, Nelson B, Elder JT: CaN19 expression is perilesional in BCC and pan-epidermal in psoriasis: A marker for regenerative hyperplasia? Journal of Investigative Dermatology, 104 (4):635A, 1995.
8. **Stoll SW**, Xia LQ, Zhao XP, Elder JT: CaN19 and keratin 6 gene expression during regenerative hyperplasia: Antagonistic roles of EGF receptor activation and calcium. Journal of Investigative Dermatology, 106:863A, 1996.
9. Zhao XP, **Stoll SW**, Elder JT: CaN19 is transcriptionally activated by EGF in human KC. Journal of Investigative Dermatology, 106:817A, 1996.
10. **Stoll SW**, Elder JT: Autoinductive EGF receptor activation is an important early event in cutaneous wound healing. Journal of Investigative Dermatology, 106:820A, 1996.
11. **Stoll SW**, Xia L-Q, Elder JT: Antagonistic effects of retinoic acid and calcium on heparin-binding EGF-like growth factor expression in human skin organ culture. Journal of Investigative Dermatology, 106:910A, 1996.
12. **Stoll SW**, Benedict M, Mitra R, Hiniker A, Nuñez G, Elder JT: Epidermal growth factor receptor activation mediates keratinocyte survival via *bcl-X_L*. Journal of Investigative Dermatology, 108: 568A, 1997.
13. **Stoll SW**, Sciabica M, Wiesen J, Werb Z, Elder JT: Induction of HB-EGF mRNA is intact in skin organ cultures of EGFR knockout mice. Journal of Investigative Dermatology, 110: 625A, 1998.
14. **Stoll SW** and Elder JT: Early gene responses in organ culture are MAP kinase-dependent, whereas keratinocyte outgrowth is p38-dependent. Journal of Investigative Dermatology, 112: 554A, 1999.
15. **Stoll SW** and Elder JT: Normal human keratinocyte require ErbB tyrosine kinases other than ErbB1/EGFR for growth. Journal of Investigative Dermatology, 112: 642A, 1999.
16. Woods TL, **Stoll SW**, Elder JT: Identification of an S100A2 binding protein in human keratinocytes. Journal of Investigative Dermatology, 112: 625A, 1999.
17. Woods TL, Fu J, Desphande R, Zhang T, **Stoll SW**, Elder JT: Intermolecular disulfide crosslinking of S100A2 is induced by oxidative stress in normal human keratinocytes. Journal of Investigative Dermatology, 114: 847A, 2000.
18. Chia NVC, **Stoll SW**, Woods TL, Nair RP, Stuart P, Elder JT: S100A2 coding sequence polymorphism is not associated with psoriasis. Journal of Investigative Dermatology, 114: 866A, 2000.
19. Kansra S, **Stoll SW**, Elder JT: EGF-dependent cytoskeletal association of activated MAP kinase and other tyrosine phosphoproteins in human keratinocytes. Journal of Investigative Dermatology, 114: 735A, 2000.
20. **Stoll SW**, Kansra S, Elder JT: Expression of multiple members of the ErbB receptor family in human skin organ culture. Journal of Investigative Dermatology, 114: 744A, 2000.
21. Varani J, Zeigler M, Kang S, Fisher G, Voorhees J, **Stoll SW**, Elder J: HB-EGF activation of keratinocyte ErbB receptors mediates epidermal

- hyperplasia, a common side-effect of retinoid therapy. Journal of Investigative Dermatology, 117:403A, 2001.
22. **Stoll SW**, Kansra S, Elder J: Metalloproteinases stimulate ErbB-dependent ERK signaling in human skin organ culture. Journal of Investigative Dermatology, 117: 279A, 2002.
 23. **Stoll SW**, Kansra S, Elder JT: Lysophosphatidic acid-induced EGF receptor internalization in human keratinocytes depends on metalloproteinase activity. Journal of Investigative Dermatology, 121: 768A, 2003.
 24. Kansra S, **Stoll SW**, Johnson JL, Elder JT: Blockade of ERK-dependent autocrine keratinocyte proliferation by Src family kinase inhibitors and calcium. Journal of Investigative Dermatology, 122: A99, 2004
 25. **Stoll SW**, Elder JT: Metalloproteinase-mediated, context-dependent activation of EGF-like growth factors in human keratinocytes. Journal of Investigative Dermatology, 122: A101, 2004.
 26. Stoll SW, Johnson JL, Elder JT: LPA stimulates amphiregulin shedding in human keratinocytes: lack of evidence for ADAM10 involvement. J Invest Dermatol 124: A97, 2005 A97, 2005
 27. **Stoll SW**, Johnson JL, Rittie L, Elder JT: Differential expression and function of EGF receptor ligands influence autocrine keratinocyte proliferation and morphology. Journal of Investigative Dermatology, 126: A565, 2006.