

## BIOGRAPHICAL SKETCH

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NAME <b>Maytin, Edward V.</b>	POSITION TITLE <b>Staff (Dermatology)</b>		
eRA COMMONS USER NAME <b>EDWARDMAYTIN</b>	<b>Assistant Staff (Biomedical Engineering)</b>		
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY
Clarkson University, Potsdam, NY	B.S.	1978	Chemistry
University of Rochester, Rochester, NY	Ph.D.	1984	Biophysics
University of Rochester School of Medicine and Dentistry, Rochester, NY	M.D.	1985	Medicine

### A. Positions and Honors

#### Professional Experience:

1985-1986	Internship, Brown University, Dept. of Medicine, Providence RI
1987-1990	Residency, Harvard Medical School, Dept. of Dermatology, Boston, MA
1986-1987	Clinical and Research Fellow , Harvard Medical School, Dept. of Dermatology, Massachusetts General Hospital, Boston
1990-1995	Instructor, Harvard Medical School, Dept. of Dermatology, Massachusetts General Hospital, Boston
1996-1998	Assistant Professor, Harvard Medical School, Dept. of Dermatology, Massachusetts General Hospital, Boston
1990-1999	Assistant in Dermatology, Massachusetts General Hospital, Boston
1993-1999	Assistant in Molecular Endocrinology, Howard Hughes Medical Institute, Massachusetts General Hospital, Boston
2000-present	Full Staff, Dept. of Dermatology, Cleveland Clinic Foundation, Cleveland, OH
2000-present	Assistant Staff, Dept. of Biomedical Engineering, Cleveland Clinic Foundation
2004-present	Assistant Professor, Dept of Chemical & Biomedical Engineering, Cleveland State University, Cleveland, OH
2005-present	Assistant Professor, Dept of Molecular Medicine, Cleveland Clinic Lerner College of Medicine of Case Western Reserve University (CCLCM), Cleveland, OH

#### Honors, Awards, and Service on Committees:

1979-1985	Scholarship, Medical Scientist Training Program, University of Rochester School of Medicine and Dentistry, Rochester, NY
1989-1992	Cutaneous Biology Research Ctr., Mass. Gen. Hosp, Central Planning Committee
1991-1996	Scientific Advisory Committee, Mallinckrodt General Clinical Research Center, Massachusetts General Hospital, Boston
1998-2000	Subcommittee on Research Animal Care (Institutional Animal Care and Use Committee), Massachusetts General Hospital, Boston
1990-present	Reviewer for <i>J. Investigative Dermatology</i> and <i>J. Biological Chemistry</i> , and <i>Photochemistry &amp; Photobiology</i>

### B. Peer-reviewed publications (in chronological order)

1. **Maytin EV**, Young DA. Separate glucocorticoid, heavy metal, and heat shock domains in thymic lymphocytes. *J Biol Chem* 1983; 258:12718-12722.
2. Young DA, Voris BP, **Maytin EV**, Colbert RA. Very-high-resolution two-dimensional electrophoretic separation of proteins on giant gels. *Methods Enzymol* 1983; 91:190-214.

3. **Maytin EV**, Balduzzi PC, Notter M, Young DA. "Changes in the synthesis and phosphorylation of cellular proteins in chick fibroblasts transformed by two avian sarcoma viruses. *J Biol Chem* 1984; 259:12135-12143.
4. **Maytin EV**, Colbert RA, Young DA. Early heat shock proteins in primary thymocytes: Evidence for transcriptional and translational regulation. *J Biol Chem* 1985; 260:2384-2392.
5. Levenson RM, **Maytin EV**, Young DA. Inexpensive microcomputer-based 2-D gel densitometry. *Analyt Biochem* 1986; 158:294-301.
6. Levenson RM, **Maytin EV**, Young DA. A novel inexpensive method for 2-D gel densitometry. *BioTechniques* 1987; 5:298-302.
7. **Maytin EV**, Wimberly J, Anderson RR. Thermotolerance and the heat shock response in normal human keratinocytes. *J Invest Dermatol* 1990; 95:635-642.
8. **Maytin EV**, Levin E, Anderson RR. A laser densitometer for selected spot analysis on two-dimensional dot blots and autoradiograms. *Analyt Biochem* 1991; 194:284-294.
9. **Maytin EV**. Differential effects of heat shock and UVB light upon stress protein expression in epidermal keratinocytes. *J Biol Chem* 1992; 267: 23189-23196.
10. **Maytin EV**, Murphy LA, Merrill MA. Hyperthermia induces resistance to ultraviolet light (UVB) in primary and immortalized epidermal keratinocytes. *Cancer Research* 1993; 53:4952-4959.
11. **Maytin EV**, Wimberly JM, Kane KS. Heat shock modulates UVB-induced cell death in human epidermal keratinocytes: evidence for a hyperthermia-inducible protective response. *J Invest Dermatol* 1994; 103: 547-553.
12. Kane KS, **Maytin EV**. Ultraviolet B-induced apoptosis of keratinocytes in murine skin is reduced by mild local hyperthermia. *J Invest Dermatol* 1995; 104: 62-67.
13. **Maytin EV**. Heat shock proteins and molecular chaperones: implications for adaptive responses in the skin. *J Invest Dermatol* 1995; 104: 448-455.
14. Romero RA, **Maytin EV**. Keratins and their role in epidermal diseases. *Dermatol Cosmet* (Llorca MA, ed., Madrid) 1997; VII: 207-213.
15. **Maytin EV**, Habener JF, Transcription factors C/EBPa, C/EBPb, and CHOP (gadd153) expressed during the differentiation program of keratinocytes in vitro and in vivo. *J Invest Dermatol* 1998; 110: 238-246.
16. Romero RA, Gonzalez S, and **Maytin EV**. Transcription factor C/EBPb in rhino mouse epidermis is upregulated by retinol but not retinoic acid. *J Invest Dermatol* 1998; 110: 607.
17. Ortel B, Chen N, Brissette J, Dotto P, **Maytin EV**, Hasan T. Differentiation-specific increase in ALA-induced protoporphyrin PPIX accumulation in primary mouse keratinocytes. *Brit J Cancer* 1998; 77:1744-1751.
18. **Maytin EV**, Lin J, Krishnamurthy R, Batchvarova N, Ron D, Mitchell PJ, Habener JF, A temporally- and spatially-defined network of transcription factors C/EBPa, C/EBPb, and AP-2 determines differentiation-specific expression of keratin K10. *Dev Biol* 1999; 216: 164-181.
19. **Maytin EV**, Ubeda, M., Lin, J.C., and Habener, J.F. Stress-Inducible Transcription Factor CHOP/gadd153 Induces Apoptosis in Mammalian Cells via p38 Kinase-Dependent and -Independent Mechanisms. *Exp. Cell Res* 2001; 267(2): 193-204.
20. Hamblin, M.R., Miller, J.L., Rizvi, I., Ortel, B., **Maytin EV** and Hasan, T. Pegylation of a chlorin(e6) polymer conjugate increases tumor targeting of photosensitizer. *Cancer Res* 2001; 61(19): 7155-62.
21. Ortel B, Sharlin D, O'Donnell D, Sinha AK, **Maytin EV**, Hasan T. Differentiation enhances aminolevulinic acid-dependent photodynamic treatment of LNCaP prostate cancer cells. *Brit J Cancer* 2002; 87:1321-1327.
22. Mack, JA, Abramson, SR, Ben, Y, Coffin JC, Rothrock, JK, **Maytin EV**, Hascall, VC, Largman, C, Stelnicki, EJ. *Hoxb13* knockout adult skin exhibits high levels of hyaluronan and enhanced wound healing. *FASEB J*. published online May 20, 2003, 10.1096/fj.02-0959fje. Available from <http://www.fasebj.org/> Hardcopy reference *FASEB J* 2003; 17:1352 – 1354.
23. Passi A., Sadeghi P., Kawamura H., Anand S, Sato N, White LE, Hascall VC, **Maytin EV**. Hyaluronan suppresses late markers of epidermal differentiation in organotypic cultures of rat keratinocytes. *Exper Cell Res* 2004; 296: 123-134.
24. **Maytin EV**, Chung HH, Seetharaman VM. Hyaluronan participates in the epidermal response to disruption of the permeability barrier in vivo. *Am J Pathol* 2004; 165:1331-1341.

25. **Maytin EV**, Anand S, Sato N, Mack J, Ortel B. Harnessing cellular differentiation to improve ALA-based photodynamic therapy in an artificial skin model. *Optical Methods for Tumor Treatment and Detection: Mechanisms and Techniques in Photodynamic Therapy XIV*, edited by David Kessel, Proceedings of the SPIE, Vol. 5689, 318-329 (SPIE, Bellingham, WA) 2005.
26. Mack JA, Ling L, Sato N, Hascall VC, **Maytin, EV**. Hoxb13 up-regulates transglutaminase activity and drives terminal differentiation in an epidermal organotypic model. *J Biol Chem* 280: 29904-29911, 2005.
27. Anand S, Chakrabarti E, Kawamura H, Taylor CR, **Maytin EV**. Ultraviolet light (UVB and UVA) induces the damage-responsive transcription factor CHOP/gadd153 in murine and human epidermis: Evidence for a mechanism specific to intact skin. *J Invest Dermatol* 125: 323-333, 2005.
28. Mack JA, Anand S, **Maytin EV**. Proliferation and cornification during development of the mammalian epidermis. *Birth Defects Research (Part C)* 2005; 75: 314-329.
29. **Maytin EV**, Anand S, Sato N, Mack J, Gasbarre C, Keevey S, Ortel B, Sinha AK, Khachemoune A. Nuclear transcription factors: A new approach to enhancing cellular responses to ALA-mediated photodynamic therapy. In: *Optical Methods for Tumor Treatment and Detection: Mechanisms and Techniques in Photodynamic Therapy XV*, edited by David Kessel, Proceedings of the SPIE, Vol. 6139. pp. 1-10. (SPIE, Bellingham, WA) 2006.
30. Sinha A, Anand S, Ortel BJ, Chang Y, Mai Z, Hasan T, **Maytin EV**. Methotrexate used in combination with aminolevulinic acid for photodynamic killing of prostate cancer cells. *Brit J Cancer* 2006; 95:485-495.
31. Sato N, Moore B, Keevey S, Drazba J, Hasan T, **Maytin EV**. Vitamin D enhances ALA-mediated protoporphyrin IX production and photodynamic cell death in 3-D organotypic cultures of keratinocytes. *J Invest Dermatol* 2007; 127: 925-934.
32. Ajani G, Sato N, Mack JA, **Maytin EV**. Cellular Responses to disruption of the permeability barrier in a 3-Dimensional organotypic epidermal model. *Exp Cell Res* 2007; 313: 3005-3015.
33. Pasonen-Seppanen S, **Maytin EV**, Torronen K, Hyttinen JMT, Hascall V, MacCallum D, Kultti A, Jokela T, Tammi MI, Tammi RH. All-trans retinoic acid-induced hyaluronan production and hyperplasia are partly mediated by EGFR signaling in epidermal keratinocytes. *J Invest Dermatol* 2008 Apr;128(4):797-807.
34. Jokela TA, Lindgren A, Rilla K, Maytin E, Hascall VC, Tammi RH, Tammi MI. Induction of hyaluronan cables and monocyte adherence in epidermal keratinocytes. **Connect Tissue Res.** 2008; 49:115-119.

### C. Research Support/ OTHER SUPPORT (Edward Maytin)

#### *Ongoing Projects*

1 R01 AR049249091-A1 Maytin (PI) 2/1/2004 - 1/31/08 Effort: 2.4 calendar months  
 NIH/NIAMS Annual direct cost: \$182,000  
 Hyaluronan and Epidermal Differentiation  
 The goal of this project is to define the regulatory role for extracellular and intracellular hyaluronan in the regulation of epidermal differentiation of keratinocytes *in vitro* and *in vivo*, and to understand the contribution of the HA-regulatory enzymes to HA metabolism in the epidermis.  
**Role: Principal Investigator**

1 P01 CA84203-01 Hasan (PI) 9/01/01-8/30/06 Effort: 2.4 calendar months  
 NIH/NCI Annual direct cost: (currently no-cost extension)  
 Cellular Differentiation and PDT  
 This study will investigate the regulation of coproporphyrinogen oxidase as a function of the differentiation state of cells, and will seek differentiation-altering strategies (using retinoids and Vitamin D) that enhance the efficacy of ALA-based photodynamic therapy (PDT) in skin keratinocytes and prostate carcinoma cells.  
**Role: Project Leader**