

**L-3-phosphoserine phosphatase regulates epidermal keratinocyte apoptosis and hair follicle stability**

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**The Wnt inhibitor Dickkopf 4 is localized to the epithelial placodes of developing appendages and is a downstream target of Wnt signaling**

Hisham Bazzi<sup>1</sup>, Katherine A Fantauzzo<sup>1</sup>, Gavin D Richardson<sup>3</sup>, Colin A Jahoda<sup>3</sup> and Angela M Christiano<sup>1,2</sup>

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**The cell surface marker MTS24 identifies a novel population of follicular keratinocytes with characteristics of progenitor cells**

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**Immunolocalization of enzymes and binding proteins sufficient for retinoic acid synthesis and signaling in the mouse hair cycle**

Helen B. Everts, John P. Sundberg, Lloyd E. King Jr., and David E. Ong

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**Expression of TRPS1 and identification of potential downstream targets during murine hair follicle morphogenesis**

KA Fantauzzo<sup>1</sup>, M Tadin-Strapps<sup>5</sup>, H Bazzi<sup>1</sup>, E Magnusdottir<sup>3</sup>, KL Calame<sup>4</sup>, and AM Christiano<sup>1,2</sup>

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**Establishment of an *ex vivo* hair organ culture model with follicles from men with androgenetic alopecia: Suppression by testosterone is counteracted by caffeine**

T.W. Fischer<sup>1,2</sup>, U.C. Hipler<sup>1</sup>, P. Elsner<sup>1</sup>

*<sup>1</sup>Department of Dermatology and Allergology, Friedrich-Schiller-University, Jena, Germany; <sup>2</sup>Department of Dermatology, University Hospital Schleswig-Holstein, University of Lübeck, Lübeck, Germany*

**Identification of putative ectodysplasin target genes during ectodermal organogenesis**

Fliniaux I., Mikkola M., and Thesleff I.

*Developmental Biology Program, Institute of Biotechnology, University of Helsinki, Finland*

**Inhibition of proinflammatory gene expression by soluble TNF receptors in human whole blood cultures: Marked contrast between the modified recombinant human TNF p55 receptor (Pegsunercept; p55-PEG) and TNF p75 receptor (Etanercept; p75-Fc)**

Shayla O. Francis MD<sup>1</sup>, David A. Norris MD<sup>1</sup>, Charles A. Dinarello MD<sup>3</sup>, Karen A. Jonscher PhD<sup>4</sup>, and Carl K. Edwards III PhD<sup>1,2</sup>

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**Laminin10 (511) plays a critical role in the maturation of the dermal papilla niche during hair morphogenesis**

J. Gao, C. Chen, N. Nguyen, M. Nguyen, J. Miner, T. Oro, and P. Marinkovich

*Stanford University, Stanford, California; Washington University, St. Louis, Missouri*

## 2006 POSTERS

### **Defining the contributions of stratifin and IKK alpha to normal skin development and cancer**

Fang Liu<sup>1</sup>, Linda Siracusa<sup>2</sup>, and Bruce Herron<sup>1</sup> (presented by F. Liu)

*Genomics Institute NYS Department of Health, Albany, New York; Kimmel Cancer Center, Jefferson University, Philadelphia, Pennsylvania*

### **Novel role of Chicken ovalbumin upstream promoter transcription factor (COUP-TF)-interacting proteins 2 (CTIP2) in skin during development**

Olga Golonzhka<sup>1</sup>, Mark Leid<sup>1</sup>, Daniel Metzger<sup>2</sup>, Jean Marc Bornert<sup>2</sup>, Pierre Chambon<sup>2</sup>, Arup Indra<sup>1</sup> and Gitali Indra<sup>1</sup>.

<sup>1</sup>*Department of Pharmaceutical Sciences, Oregon State University, Corvallis, Oregon;* <sup>2</sup>*IGBMC and ICS, Illkirch, France.*

### **Increased epithelial $\beta$ -catenin unlocks renewal of mouse teeth**

Elina Järvinen<sup>1</sup>, Katja Närhi<sup>1</sup>, Walter Birchmeier<sup>2</sup>, Makoto M. Taketo<sup>3</sup>, Jukka Jernvall<sup>1\*</sup>, and Irma Thesleff<sup>1\*</sup>

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### **Single cell expression profiling of human epidermal stem and transit amplifying cells: Lrig1 is a regulator of stem cell quiescence**

Kim B. Jensen and Fiona M. Watt

*Keratinocyte Laboratory, Cancer Research UK London Research Institute, London, UK*

### **Gene-regulatory pathways controlling desmocollin gene expression in epithelial cells**

Xing Cheng<sup>1</sup>, Jiangli Chen<sup>1</sup>, Maria Merched-Sauvage<sup>1</sup>, and Peter J. Koch<sup>1,2</sup>

*Departments of <sup>1</sup>Dermatology and <sup>2</sup>Molecular & Cellular Biology, Baylor College of Medicine, Houston, Texas*

### **$\Delta$ Np63 knockdown mice: A mouse model for AEC syndrome**

Maranke I. Koster<sup>1</sup>, Barbara Marinari<sup>2</sup>, Piranit N. Kantaputra<sup>3</sup>, Aimee S. Payne<sup>4</sup>, Antonio Costanzo<sup>2</sup>, Michael Karin<sup>5</sup> and Dennis R. Roop<sup>1</sup>

<sup>1</sup>*Baylor College of Medicine, Houston, Texas;* <sup>2</sup>*University of Rome "Tor Vergata," Rome, Italy;* <sup>3</sup>*Chiang Mai University, Chiang Mai, Thailand;* <sup>4</sup>*University of Pennsylvania, Philadelphia, Pennsylvania;* <sup>5</sup>*University of California, San Diego, California*

### **Body site and type of sebaceous tumor are indicative of DNA mismatch repair status**

AJF Lazar, S Lyle, and E Calonje

*UT-MD Anderson Cancer Center, Houston, Texas; University of Massachusetts, Worcester, Massachusetts; St. John's Institute of Dermatology, London, UK*

### **Hair-cycle dependent basal cell carcinoma tumorigenesis is strongly influenced by genetic background of irradiated *Ptc1*<sup>+/-</sup> mice**

Simona Leonardi<sup>1,3</sup>, Mariateresa Mancuso<sup>1</sup>, Maria Pierdomenico<sup>1</sup>, Mirella Tanori<sup>1</sup>, Emanuela Pasquali<sup>1,3</sup>, Simonetta Rebessi<sup>1</sup>, Vincenzo Di Majo<sup>1</sup>, Simonetta Pazzaglia<sup>1</sup> and Anna Saran<sup>1</sup>

<sup>1</sup>*Biotechnology and <sup>2</sup>Radiation Protection Unit, ENEA CR-Casaccia, Rome, Italy;* <sup>3</sup>*Department of Experimental Oncology, Istituto Nazionale Tumori, Milan, Italy*

### **Cutaneous sebaceous tumors contain a subpopulation of cells expressing the keratin 15 stem cell marker**

R Bieniek, AJF Lazar, C Photopoulos, and S Lyle

*Beth Israel Deaconess Medical Center, Boston, Massachusetts; UT-MD Anderson Cancer Center, Houston, Texas; University of Massachusetts, Worcester, Massachusetts*

### **Malignant transformation of *Dsg2*-transgenic keratinocytes associated with deregulated PI-3kinase/AKT, MEK/MAPK and NF- $\kappa$ B signaling**

Ulrich Rodeck, Donna Brennan, Ying Hu, and My G. Mahoney

*Department of Dermatology and Cutaneous Biology, Thomas Jefferson University, Philadelphia, Pennsylvania*

**Influence of ovariectomy on basal cell carcinoma induction in Ptc1+/- female mice**

Mariateresa Mancuso<sup>1</sup>, Maria Pierdomenico<sup>1</sup>, Simona Leonardi<sup>1,2</sup>, Mirella Tanori<sup>1</sup>, Emanuela Pasquali<sup>1,2</sup>, Simonetta Rebessi<sup>1</sup>, Vincenzo Di Majo<sup>1</sup>, Simonetta Pazzaglia<sup>1</sup> and Anna Saran<sup>1</sup>

<sup>1</sup>Biotechnology Unit, ENEA CR-Casaccia, Rome, Italy; <sup>2</sup>Department of Experimental Oncology, Istituto Nazionale Tumori, Milan, Italy

**Transgenic expression of the BMP antagonist noggin in skin leads to hair follicle-derived tumors and increases epidermal susceptibility to chemical carcinogenesis**

A.N. Mardaryev<sup>1</sup>, A.A. Sharov<sup>1</sup>, T.Y. Sharova<sup>1</sup>, P.A. Overbeek<sup>2</sup>, and V.A. Botchkarev<sup>1</sup>

<sup>1</sup>Department Dermatology, Boston University School of Medicine, Boston, Massachusetts; <sup>2</sup>Department of Molecular and Cell Biology, Baylor College of Medicine, Houston, Texas

**Hair follicle stem cells are skin tumor-initiating cells**

Rebecca J. Morris<sup>1</sup>, Shulan Li<sup>1</sup>, Carol Trempus<sup>2</sup>, and George Cotsarelis<sup>3</sup>

<sup>1</sup>Department of Dermatology, Columbia University Medical Center, New York, New York; <sup>2</sup>National Institute of Environmental Health Sciences, Research Triangle Park, North Carolina; <sup>3</sup>Department of Dermatology, University of Pennsylvania School of Medicine, Philadelphia, Pennsylvania

**In vitro Msx-1 expression in human fetal digits in response to tip amputation**

Abby Navrati<sup>1,2</sup>, Kathleen Berfield<sup>2</sup>, Rima Kulikaukas<sup>3</sup>, Philip Fleckman<sup>3</sup>, Marcia Usui<sup>3</sup>, and Christopher Allan<sup>1,2</sup>

Departments of <sup>1</sup>Bioengineering, <sup>2</sup>Orthopaedics & Sports Medicine, and <sup>3</sup>Medicine (Dermatology), University of Washington, Seattle, Washington

**Dual role of inactivating Lef1 mutations in epidermis: Tumour promotion and specification of tumour type**

Catherin Niemann<sup>1,2</sup>, David M. Owens<sup>1,3</sup>, Peter Schettina<sup>2</sup> and Fiona M. Watt<sup>1</sup>

<sup>1</sup>Cancer Research UK London Research Institute, London, UK; <sup>2</sup>Center for Molecular Medicine Cologne (CMMC), University of Cologne, Institute of Pathology, Cologne, Germany; <sup>3</sup>Department of Dermatology and Pathology, Columbia University, College of Physicians and Surgeons, New York, New York

**Smad4 Regulates Desmoglein4 Expression during Hair Follicle Differentiation**

Philip Owens<sup>1</sup>, Hisham Bazzi<sup>2</sup>, G. Allen Li<sup>1</sup>, Angela M. Christiano<sup>2</sup>, Xiao-Jing Wang<sup>1</sup>

<sup>1</sup>Oregon Health Sciences University, Portland Oregon; <sup>2</sup>Genetics & Development, Columbia University, New York, New York

**Defining “refractory telogen” in the hair cycle by extra- and intra-follicular Bmps**

Maksim Plikus<sup>1</sup>, Julie Ann Mayer<sup>1</sup>, Robert Maxson<sup>2</sup>, Ting-Xin Jiang<sup>1</sup>, and Cheng Ming Chuong<sup>1</sup>

Departments of <sup>1</sup>Pathology and <sup>2</sup>Biochemistry, University of Southern California, Los Angeles, California

**Maintenance of dermal papilla identity and hair follicle inductivity**

Michael Rendl and Elaine Fuchs

Howard Hughes Medical Institute, Laboratory of Mammalian Cell Biology and Development, The Rockefeller University, New York, New York

**Molecular signatures of the epithelial buds of the mammary gland and hair follicle suggest distinct mechanisms as well as similarities in their formation during skin morphogenesis**

A.A. Sharov, T.Y. Sharova, R. Atoyian, A.N. Mardaryev, A. Sargsyan, and V.A. Botchkarev.

Department of Dermatology, Boston University School of Medicine, Boston, Massachusetts

**Primary and secondary hair follicles show distinct patterns of catagen development and apoptosis: Leads and lessons from Msx2-Noggin transgenic mice**

T.Y. Sharova, A.A. Sharov, and V.A. Botchkarev (presented by A.A. Sharov)

Department of Dermatology, Boston University School of Medicine, Boston, Massachusetts

**DGAT1 modulates vitamin A homeostasis in the skin**

Michelle Y.S. Shih<sup>1,2</sup>, C.L. Eric Yen<sup>1</sup>, Ryan S. Streeper<sup>1</sup>, Ping Zhou<sup>1</sup>, Robert V. Farese Jr.<sup>1,2,3</sup>

<sup>1</sup>Biomedical Sciences Graduate Program, University of California, San Francisco, California; <sup>2</sup>Gladstone Institute of Cardiovascular Disease; <sup>3</sup>Departments of Medicine and of Biochemistry & Biophysics, University of California San Francisco, San Francisco, California

## 2006 POSTERS

### **Normal human skin keratinocytes and fibroblasts can be isolated and grown in defined, animal product-free (APF) media**

Gary D. Shipley, Michelle Van Kleeck, Erin Tucker, Christine Parrish, Megan Kalstad, Paul Cook, Shiwei Li and Ann Shipley.

*Cascade Biologics, Inc., Portland, Oregon*

### **Keratin expression in human nail development**

Zarry Tavakkol, Trevor Caldwell, Marcia Usui, Robert Underwood, \*John Sundberg, John Olerud and Philip Fleckman

*Department of Medicine (Dermatology), University of Washington, Seattle, Washington; \*The Jackson Laboratory, Bar Harbor, Maine*

### **The LIM-only factor LMO4 regulates expression of the BMP7 gene through an HDAC2-dependent mechanism, and controls mammary gland development**

Ning Wang, Zhongxian Lu, Kevin K. Lin, Kaye Starr Lam, Ryan Newton, Xiaoman Xu, Zhengquan Yu, Gordon N. Gill and Bogi Andersen (presented by Z. Yu)

*Departments of Medicine and Biological Chemistry, University of California Irvine, Irvine, California, and University of California San Diego, La Jolla, California*

### **Hedgehog-Wnt interactions in ectopic epithelial bud development**

Steve H. Yang<sup>1</sup>, Vladimir Grachtchouk<sup>2</sup>, Anna Wang<sup>2</sup>, and Andrzej A. Dlugosz<sup>1,2</sup>

<sup>1</sup>*Program in Cellular and Molecular Biology, and* <sup>2</sup>*Dermatology Department, University of Michigan, Ann Arbor, Michigan*

### **The Grainyhead-like Epithelial Transactivator Get-1/Grhl3 regulates epidermal terminal differentiation and interacts functionally with LMO4**

Zhengquan Yu, Kevin K. Lin, Ambica Bhandari, Joel A. Spencer, Xiaoman Xu, Ning Wang, Zhongxian Lu, Gordon N. Gill, Dennis R. Roop, Philip Wertz and Bogi Andersen

*Departments of Medicine and Biological Chemistry, University of California Irvine, Irvine, California; Department of Medicine, University of California San Diego, La Jolla, California; Department of Molecular and Cellular Biology, Baylor College of Medicine, Houston, Texas; Dows Institute, University of Iowa, Iowa City, Iowa*

### **WNT/beta-catenin signaling is required for multiple stages of embryonic and postnatal mammary gland development**

Yunta M.<sup>1</sup>, Chu, E.Y.<sup>1</sup>, Andl, T.<sup>1</sup>, Gallant, N.<sup>1</sup>, Piccolo, S.<sup>2</sup>, & Millar, S.E.<sup>1</sup>

<sup>1</sup>*Departments of Dermatology and Cell and Developmental Biology, University of Pennsylvania, Pennsylvania,* <sup>2</sup>*University of Padua, Italy*

### **Hair inductivity by cultured adult mouse dermal cells**

Satish Parimoo, Ying Zheng, Marylene Boucher, Xiaobing Du and Kurt Stenn (presented by S. Parimoo)

*Aderans Research Institute, Philadelphia, Pennsylvania*