PANAMERICAN SOCIETY for PIGMENT CELL RESEARCH

PASPCR Newsletter

Volume 2 Number 2 June, 1994

Introduction . . . by DeWayne Townsend

The **PASPCR** *Newsletter* is published quarterly and is intended to serve as an informal means for the members of our Society to communicate with one another. As such, we invite our membership to actively contribute to the *Newsletter*; help us to update the Job Listings, Calendar of Events, Meeting Reports, Abstracts in press and other newsworthy items. If you attend a scientific meeting at which you heard about work which you think will be of interest to the membership of the **PASPCR**, please write a few paragraphs summarizing what was presented and share it with us. If you should have a change of affiliation and address, we'd like to know that, too. This is **your** *Newsletter*, and we depend upon you to help us make sure it best serves the Society's needs. Contributions and comments can be sent to any of the members of the Publications Committee.

The Publications Committee wants to make collaboration between members of the Society as easy as possible and toward that goal we are encouraging the use of E-mail and other forms of electronic communications. The membership listing in the March issue contains the E-mail address of those members that have told us what their address is, we encourage everyone who has an E-mail address to forward it to the Publications Committee. If you want an E-mail address and you work at an educational organization please contact the Publications Committee. We will get you in touch with the individuals who can "get you access to the Information SuperHighway". Our Committee is also setting up a Gopher server for the **PASPCR** that will contain items of interest to the membership, such as a directory of members and text of past *Newsletters*.

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Calendar of Events

June 26 - 29, 1994 Vth PASPCR Annual Meeting, to be held in Philadelpia, Pennsylvania, (contact: Dr. Gert Jacobsohn, Department of Biological Chemistry, Hahnemann University, Broad and Vine, Philadelphia, PA 19102-1192, FAX: 215/762-3722)

Oct 18 - 22, 1994 44th Annual Meeting of the American Society of Human Genetics, to be held in Montreal, Canada, (contact: Administrative Office, 9650 Rockville Pike, Bethesda, MD 20814-3998, FAX: 301/530-7079)

Oct 19 - 22, 1994 5th ESPCR Annual Meeting, to be held in Vienna, Austria, (contact: ESPCR '94, Vienna Academy of Postgraduate Medical Education and Research, Alser Straße 4, A-1090 Vienna, Austria, FAX: 43-1-42-138323)

Dec 10 - 14, 1994 34th Annual Meeting of the American Society for Cell Biology, to be held in San Francisco, CA (contact: ASCB National Office, phone: 301/530-7153)

June 25 - 28, 1995 VIth PASPCR Annual Meeting, to be held in Kansas City, Kansas, (contact: Dr. Sally Frost-Mason, Department of Physiology, University of Kansas, 3038 Hayworth Hall, Lawrence, KS 66046-2106, FAX: 913/864-5321)

Oct 29 - Nov 3, 1996 XVIth International Pigment Cell Conference, to be held in Anaheim, California, (contact: MMC/UCI Center for Health Education, P.O. Box 1428, Long Beach, California 90801-1428, FAX: 310/933-2012)

- - - Introduction (continued from page 1) - - -

If you have any ideas for what sort of information you would like to be able to access please let us know. The **PASPCR** information will soon be found under "International Federation of Pigment Cell Societies" under "International Organizations" on Gopher. For those who cannot wait the immediate path is: Host=lenti.med.umn.edu., port 70, Path=1/Departments/Medicine, Department of/Division of Genetics and Metabolism/International Federation of Pigment Cell Societies.

Welcome to New Members

We welcome the following new members to the **PASPCR** . . . .

Diane Barker
Greg S. Barsh
Tricia L. Cooley
Philippe D. Donatien
Maria C. Fargnoli
David E. Granholm
Victoria A. Kimler
Robert D. Nicholls
David A. Norris
Sreekumar G. Pillai
Susan D. Porter
Susana Rosemblat
Dennis A. Stephenson
Itaru Suzuki
Loren D. Wipf
Shuangwen Zhou

If anyone is interested in joining our Society or wishes to sponsor a member, application forms can be obtained from Dr. Richard King at the PASPCR Secretary/Treasurer' office.

Corporate Sponsors

The PASPCR would like to acknowledge and thank our Corporate Sponsors; the list below reflects contributions over the past 2 years. Financial gifts from these sponsors have allowed our Society to increase benefits to the membership far out of proportion to the actual dues collected from members. Monies contributed by these sponsors have been used over the years to support various PASPCR functions including our Young Investigator Award program, meeting travel stipends, annual meeting expenses and this Newsletter.

GOLD Sponsors	*SILVER Sponsors*	*BRONZE Sponsors*
Ortho Pharmaceutical Corp	Avon Products, Inc	Galderma Laboratories, Inc
	Bristol-Myers Squibb Co	Lawrence M Gelb Research
	Dermik Laboratories	Foundation of Clairol, Inc
	Schering-Plough Corp	Procter and Gamble Co

1994 PASPCR Vth Annual Meeting

The Vth Meeting of the PASPCR will be held in Philadelphia, Pennsylvania from June 26-29, 1994. Dr. Gert Jacobsohn is the Organizer of this meeting, and the Program for the Meeting is reprinted in its entirety later in this Newsletter. We hope that all members of the PASPCR will plan to attend this meeting - be sure to mark it on your calendar. Remember that it is up to each attendee to contact the hotel directly to make reservations (Wyndham Franklin Plaza Hotel; phone: 215/448-2000)

1995 PASPCR VIth Annual Meeting Site :

The VIth Annual Meeting of the PASPCR will be held in Kansas City from June 25-28, 1995; Sally Frost-Mason will be the Organizer of this meeting. Further details about the 1995 Annual Meeting will be forthcoming in future Newsletters and mailings.

PASPCR Secretary / Treasurer's Report : by Richard King

Following is a synopsis of the PASPCR Council Meeting held by telephone conference call on January 27, 1994:

Hearing opened the meeting. The minutes of the Council meeting on September 26, 1993, were approved.

Frost-Mason gave the Nominating Committee report. The members of the 1994 Nominating Committee were Frost-Mason, chair; M. Brilliant, N. Granholm, R. Halaban and F. Meyskens. Seven individuals have been nominated for the three council positions to start on January 1, 1995, for a three year term. Frost-Mason also reviewed the Nominating Committee recommendations for the PASPCR Career Achievement Award and it was decided that in the future the Nominating Committee provide to the Council a short description of the reasons for each nomination for a Career Achievement Award.

Hearing gave the Publication Committee report. The 1994 Publication Committee will consist of the first year council members: Boissy, Jacobsohn and Townsend (chair). The goal will be to publish a newsletter quarterly.

Hearing reviewed the activities of the Membership Committee. The committee members include the third year council members: Bowers, Cochran and Pawelek (chair). Pawelek will prepare a draft of a brochure for the PASPCR to be used for fundraising, advertisment, etc.

Hearing reviewed the proposal from the Lawrence M. Gelb Research Foundation to provide support for a special lectureship for the annual meeting of the PASPCR. The Gelb Research Foundation has agreed to provide support for a five year period starting with the 1994 meeting, and has requested that a representative from their organization be involved in the selection of the special lectureship each year. Frost-Mason was asked to develop a proposal for selection of future lectureships.

Nordlund reviewed the Vitiligo Research Award which had been given by the American Skin Association to attendees of the PASPCR annual meeting in the past. The American Skin Association has now decided to give this award directly and not through the PASPCR but is open to nominations. The Council agreed that the PASPCR should provide a yearly nomination for the Vitiligo Research Award.

Jacobsohn reviewed the plans for the 1994 Philadelphia meeting. The meeting will start on Sunday afternoon, June 26, with a scientific session followed by a reception. The banquet is scheduled for Tuesday evening at the Academy of Natural History. Registration fees are $160 for a regular member and $100 for a student member. Hotel rates are $76 for a double room.

Under new business, Pawelek noted that the American Society of Photobiology was meeting from June 25-29, 1994, in Scottsdale, Arizona, which overlaps with the PASPCR meeting in Philadelphia. He requested that some attempt be made to coordinate future meetings so that this overlap did not recur.

The minutes have been prepared by R. King, Secretary-Treasurer

Meeting Report : by Miles Chedekel and Lisa Zeise

Melanin Symposium - Alexandria, VA March 10 - 12, 1994

On March 11th and 12th, 1994 a two day Melanin Symposium entitled "Melanin: Its Role in Human Photoprotection" was held at the Hyatt Regency Crystal City at Washington, D.C. National Airport. The meeting was attended by 114 scientists from Academic, Government, and Industrial Laboratories. A combination of 34 invited and submitted papers were presented (see program below) in two key note addresses, four regular sessions, and two luncheon discussions. Proceedings of the meeting will be published in book form by Valdenmar Publishing Company, Overland Park, Kansas, and will be available in September/October of 1994; further information on the proceedings can be obtained from Dr. Lisa Zeise (phone: 916-865-9033, fax: 916-865-4092).

The central theme of this symposium was melanin, the biopolymer. The purpose of the symposium was to provide an open forum for discussion of a number of key issues regarding the melanin biopolymer. Specific questions that were addressed in talks, and debated in the question and answer sessions included:

· What is the evolutionary significance of melanin?
· How is melanin defined?
· How is melanin analyzed?
· In which human tissues is melanin distributed?
· Does melanin in the epidermis and eye protect human tissue from solar radiation? How?
· Can melanin be used in sunscreens for photoprotection?

The follow brief highlights and editorial comments on each session represent my own opinions, and it is suggested that interested parties refer to the proceedings of the symposium for a more comprehensive coverage of each session.

Session One: Chemistry and Photo-physics of Melanin

The fact that melanin is not a unique compound, but rather a class of biogenetically related compounds, exhibiting variations in their physical (particle), elemental, and functional compositions was discussed. It was pointed out that free radical scavenging, absorption and scattering of light by melanin will be strongly dependent on particle size and functional group compositions, and thus, there is a critical need for adoption of standard preparations for use in photo-physical studies. Published standard validated isolation protocols and analytical methods were proposed for use in studying eumelanins.

Luncheon Discussion: Is Melanin Photoprotective?

This session produced a lively debate which included a good deal of audience participation. A combination of anectodal, clinical, histological, epidemiological, and *in vitro* cell culture data was used to support the pro and con arguments. Important issues which were raised include:

· Dr. Pathak proposed that the formation and distribution of melanosomes in human epidermis protects humans from basal cell and squamous cell carcinomas. He also presented evidence indicating that melanin can protect skin from damage by scavenging free radicals produced during solar irradiation. Dr. Kligman presented arguments that melanin protects the epidermis in general, the melanocytes in particular, and is not particularly effective at protection of the dermis.
· A point was made from the audience that melanin is not an absolute sunblock, and does not offer absolute protection from solar irradiation. However, from an evolutionary perspective, it is not necessary for melanin to be an absolute sunblock, it is only necessary that it confer a selective advantage.
· Dr. Morison proposed that the primary purpose of melanin formation is for camouflage or heat absorption, not photoprotection. This interesting and well presented philosophical theory was primarily supported by anectodal and anthropological writings; hard scientific data in support of this proposal is lacking.
· *In vitro* cell culture data was presented by Dr. Hill as evidence that melanin is photosensitizing in some cases and photoprotective in others. One of the photosensitizing scenarios cited was the combination of melanin and UVC light; this would appear to have little relevance to *in vivo* photoprotection from solar irradiation. It should also be pointed out that some of the results and conclusions of this presentation were in direct conflict with a paper presented by Kobayashi *et. al* in Session Two.

Session Two: Melanin Biology and Photobiology

This session covered the normal and photoinduced melanin biogenetic pathway. Evidence for control points in the biosynthetic pathway were presented, and models to study melanization and melanosomes were proposed. Cell culture models for studying melanin photoprotection were presented; their implications and potential drawbacks were discussed. Standard melanin preparations were not employed in all of the model studies presented, making it impossible to compare and contrast the results.

Session Three: Natural Distribution of Melanin and Pigmentary Disorders

The epidemiological evidence for protection of highly pigmented skin from sun induced skin cancer is undeniable. However, the mechanism for this protection is still an open question. In this session it was pointed out that the melanocyte is part of a system with many effects within the body. In addition to human epidermis, melanin is produced in other tissues such as the inner ear. Clearly, the role of melanin in the inner ear is not for photoprotection, and other potential biochemical reasons for production of melanin were discussed. The fact that the melanocyte is affected by many "non pigment" genes that can significantly alter is function, was used in support of the hypothesis that the function of the melanocyte system is to modulate inflammation and to remove the toxic products such as oxygen radicals produced as a result of inflammation. A model for photoprotection from skin cancer by melanogenesis-associated destruction of UVR-damaged melanocytes and keratinocytes was also postulated.

Melanogenesis produces, in addition to melanin, a host of UV absorbing metabolites which escape polymerization. The UV absorbing properties and photochemistry of these metabolites was discussed in terms of their antioxidant/prooxidant properties they confer upon their surroundings.

Luncheon Discussion: Commercially Available Products Containing Melanin and Their Claims

Worldwide, there are at least eight companies at various stages of commercial production of melanins. Melanins are currently being used in sun treatment products in Canada, Europe, and the United States. In addition to a review of products currently on the market containing melanin, the regulatory aspects of use of melanin as a natural sunscreen was discussed.

Session Four: Function of Melanin and Photoprotection by Exogenous Melanin

Product claims for the use of melanin in sun protective formulations need to be substantiated by scientific studies. In this session several studies were reported which demonstrate the advantages of inclusion of melanin in sunscreen formulations. UVA and free radical scavenging were proposed to be efficacious mechanisms for melanin photoprotection. Discussion during this session indicated that while the active ingredients are important, the way in which they are formulated can significantly alter the effect of a given active, and care must be taken to use standard methods when comparing the efficacy of a given active ingredient within a finished formulation.

Meeting Report : by Seth Orlow

Society for Investigative Dermatology - Baltimore, MD April 27 - 30, 1994

The annual meeting of the SID was held at the Baltimore Convention Center/Stouffer Harborplace Hotel. Of the more than 600 abstracts presented, numerous papers dealt with issues of interest to PASPCR members.

The annual Irwin H. Blank symposium, especially designed to expose residents and fellows to state-of-the-art presentations on a specific topic in cutaneous biology, was devoted to melanocyte biology. Dr. H.Y. Park (Boston University) discussed the stimulatory role of protein kinase C in the regulation of melanogenesis. This is an area of widespread interest, especially in light of the effects of TPA on the growth of pigmentation of cultured melanocytes. Dr. Jim Nordlund (University of Cincinnati) reviewed the interactive "troika" of melanocytes, keratinocytes and Langerhans cells. Melanocytes are undoubtedly affected by keratinocyte-derived cytokines and growth factors. The abnormal behavior of vitiliginous skin in contact sensitization supports a role for melanocytes in cutaneous immunology. Dr. Glynis Scott (Rochester, NY) related the results of her investigations of the interactions between human melanocytes and their extracellular medium. In addition to defining the integrins and other cell adhesion molecules

expressed by fetal and neonatal melanocytes, she presented evidence that stem-cell factor, the ligand of the c-kit protooncogene receptor, alters the expression of melanocyte membrane proteins involved in adherence to and migration upon the extracellular matrix. Especially interesting was her report that melanocytes express the 180 kDa "bullous pemphigoid antigen" yet do not demonstrate any hemidesmosomal structures.

Dr. Mina Yaar (Boston University) summarized the evidence in support of the role of nerve growth factor and its receptor in melanocyte biology. Melanocytes express both the mRNA and protein for the 75 kDa NGF receptor. Melanocytes deprived of NGF undergo apoptosis (programmed cell death). Occupancy of the NGF receptor by its ligand protects cells from this pathway to cell death.

David Norris (University of Colorado) further discussed the phenomenon of apoptosis and its importance to melanocyte biology. Apoptosis refers to a series of events leading to nuclear chromatin marginalization, internucleosomal DNA digestion, and, eventually, cell death. It is especially notable that melanocytes express extremely high levels of bcl-2, a gene responsible for the protection of cells from apoptosis. bcl-2 is purported to act as an intracellular antioxidant. Two groups at Washington University have now shown that mice with a bcl-2 gene interrupted by genetic engineering demonstrate premature graying of the coat hairs in addition to other developmental anomalies.

Vincent Hearing (NCI/NIH) and Barbara Gilchrest (Boston University) chaired a poster discussion session which covered topics as diverse as the control of melanogenesis, melanogenic proteins, and the immune response to vitiligo and melanoma. Ansel et al. (University of Oregon) improved survival of mice injected with melanoma cells previously transfected with the gene for GM-CSF, and Guerry et al. (Penn) showed that expression of the B7 costimulatory molecule could also result in augmented melanoma recognition by T cells. The stimulatory effects of endothelin-1, basic FGF, LTC_4, stem cell factor/MCF, and scatter factor/HGF on melanocyte growth were discussed by Imokawa et al. (Tochigi, Japan), Morelli et al. (Denver), and Halaban and collaborators (Yale). All three groups detected synergy between different classes of growth factors. Orlow and colleagues (NYU) presented evidence in support of the existence of a multimeric functional complex of tyrosinase and the related proteins TRP-1 and TRP-2. The enzymatic conversion of DHICA into melanin was imputed to the brown locus protein by Hearing and colleagues (NCI/NIH) and to the silver locus protein by Pawelek and coworkers (Yale).

Interested readers should refer to the April 1994 issue of the Journal of Investigative Dermatology in which the abstracts for the presentations discussed above, as well as many more, are presented in full.

PROGRAM - Vth PASPCR Meeting Philadelphia, PA June 26 - 29

VITILIGO AND OTHER PIGMENTARY DISORDERS Sunday June 26, 2:00 pm

Presiding: Roger R Bowers and J Robert Smyth, Jr

2:00 WELCOME Leonard L Ross, Vice-President for Academic Affairs and Dean, Hahnemann University

OPENING REMARKS Gert M Jacobsohn, Meeting Organizer and Chair, Program Committee

2:15 1. MELANOCYTES ARE RESISTANT TO THE INDUCTION OF APOPTOSIS: IMPLICATIONS IN THE PATHOGENESIS OF VITILIGO. DA Norris, MH Middleton, K Whang, D Davis and R Duke

2:35 2. IMMUNOPATHOLOGY OF VITILIGO. I Caroline Le Poole, Rene MJGJ van den Wijngaard, Wiete Westerhof and Pranab K Das

2:55 3. FACTORS ASSOCIATED WITH VARIANT EXPRESSION OF VITILIGO IN THE SMYTH LINE CHICKEN. J R Smyth, Jr, GP Sreekumar, N Lakshmanan, and Gisela Erf

3:15 4. AVIAN MELANOCYTE PREMATURE CELL DEATH IN CHICKEN MUTANTS DUE TO LOW ANTIOXIDANT PROTECTION LEVELS: FOWL MODEL FOR VITILIGO. Roger R Bowers, Arcadio Biboso and Cibby Varkey

3:35 5. ANTIOXIDANT THERAPY OF VITILIGO. M Picardo, S Passi, M Grandinetti, C De Luca, A Di Carlo, P Grammatico, G del Porto

3:55 **Refreshments**

4:10 6. INTRINSIC REGULATORS OF COMPLEMENT ACTIVATION IN VITILIGO. GT Venneker, IC Le Poole, N Puri, RM Vodegel, W Westerhof, JD Bos, PK Das and SS Ashgar

4:30 7. CHARACTERIZATION OF THE "VITILIGO" ANTIGENS. Jean-Claude Bystryn

4:50 8. CHARACTERIZATION OF THE GENOMIC REGION RESPONSIBLE FOR PIGMENTATION DEFECTS IN W, Ph AND Rw MUTATIONS IN MICE. DL Nagle, RB Hough, BW Nieuwenhuijse, CW Lo, V Chapman and M Bucan

5:10 9. QUANTITATIVE GENETICS OF PIEBALD SPOTTING. William J Pavan, Susanna Mac, Mickie Cheng and Shirley Tilghman

5:30 10. TYROSINASE INHIBITION DUE TO COPPER CHELATION BY HOMOCYSTEINE: THE MECHANISM FOR REVERSIBLE HYPOPIGMENTATION IN HOMOCYSTINURIA. O Reish, D Townsend, SA Berry, M Tsai and RA King

7:00 - 9:00 **Reception**

MOLECULAR BIOLOGY Monday, June 27, 8:30 am

Presiding: Murray H Brilliant and Richard A King

8:30 11. FUNCTIONAL/NON-FUNCTIONAL INTERACTION OF LYSOSOMAL/ LYSOSOME ASSOCIATED MEMBRANE PROTEINS WITH TYROSINASE AND TRP-l IN HUMAN MELANOGENESIS. K Jimbow, H Chen, D Luo

8:50 12. AFRICAN ORIGIN OF A COMMON MUTATION OF THE HUMAN P-GENE IN AFRICAN AMERICAN TYROSINASE POSITIVE OCULOCUTANEOUS ALBINISM (OCA2). Donna Durham-Pierre, JM Gardner, Y Nakatsu, RA King, U Francke, A Ching, R Aquaron, V del Marmol, and MH Brilliant

9:10 13. EXPRESSION STUDIES OF TWO ALLELES OF THE NORMAL HUMAN TYROSINASE cDNA WITH POLYMORPHISM AT CODON 192. Herlina Y Handoko, Scott C Wildenberg, Raymond E Boissy, DeWayne Townsend, and Richard A King

9:30 **PASPCR Special Lecture, sponsored by the Lawrence Gelb Research Foundation:**
14. TRANSGENIC MOUSE MODELS OF MELANOMA. Beatrice Mintz

10:30 **Refreshments**

10:45 15. MUTATIONS OF THE TYROSlNASE GENE IN OCA1 MASQUERADlNG AS OCULAR ALBINISM. Richard King, C Gail Summers, Donnell Creel, Richard Weleber, James Fryer, and William Oetting

11:05 16. MOLECULAR GENETIC DISSECTION OF A bHLH-ZIP PROTEIN ENCODED BY THE MOUSE *MICROPHTHALMIA* LOCUS. Eirikur Steingrimsson, Karen J Moore, M Lynn Lamoreux, Adrian R Ferre-D'Amare, Stephen K Burley, Debra C Sanders-Zimring, Loren C Skow, Colin A Hodgkinson, Heinz Arnheiter, Neal G Copeland, and Nancy A Jenkins

11:25 17. RETROVIRAL INFECTION WITH HUMAN TRP-1 cDNA UPREGULATES TRP-l SYNTHESIS AND STIMULATES THE ACTIVITY OF TYROSINASE IN HUMAN MELANOMA CELLS. H Zhao, D Eling, EE Medrano, JJ Nordlund, and RE Boissy

11:45 18. THE GUNMETAL (*GM*) PIGMENT DILUTION GENE IS ASSOCIATED WITH ABNORMAL PLATELET PRODUCTION. Richard T Swank, Edward K Novak, Madonna Reddington, Lijie Zhen and Michael P McGarry

- - - - TO BE CONTINUED AT 4:30 PM - - - -

4:30 19. GENE ACTION AND INTERACTION AT THE MAMMALIAN AGOUTI LOCUS. Greg Barsh, Michael Ollmann, Harry Vrieling and David Duhl

4:50 20. INHIBITION OF MELANIN BIOSYNTHESIS BY ANTISENSE RNA OF HUMAN PMEL-17. Ling Hou, Richard T Pickard and Byoung S Kwon

5:10 21. THE CLONING OF cDNAs WHICH CODE FOR TYROSINASE RELATED PROTEINS (TRPs) FROM CHICKEN MELANOCYTES. LM Austin and RE Boissy

5:30 22. CLONING OF THE GENE FOR TYROSINASE FROM THE ZEBRAFISH. Kenneth A Mason, Randall L Morrison, Sally K Frost-Mason

BRIGHT PIGMENTATION Monday June 27, 1:30 pm

Presiding: Joseph T Bagnara and Sally K Frost-Mason

1:30 23. PIGMENTATION AS A MODEL DEVELOPMENTAL SYSTEM TODAY. Sally K Frost-Mason

1:50 24. CONTROL OF VERTEBRATE PIGMENTATION PATTERNS BY HORMONES AND INTRINSIC FACTORS IN THE INTEGUMENT. JT Bagnara, PJ Fernandez, P Samaraweera, FT Mangano, JM Newton, and A Zuasti

2:10 25. BRIGHT COLORED PIGMENTATION OF THE AVIAN IRIS. Jocelyn Hudon

2:30 26. BRIGHT-COLORED PIGMENTATION IN AMPHIBIANS. Philip J Fernandez

2:50 27. THE CELLULAR MECHANICS OF BRIGHT VENTRAL SIGNALING COLOR CHANGES IN LIZARDS. Randall L Morrison

3:10 28. THE INVOLVEMENT OF THE ENDOPLASMIC RETICULUM CISTERNAE IN THE TRANSLOCATION OF PIGMENTARY ORGANELLES IN ERYTHROPHORES OF THE SQUIRREL FISH, HOLOCENTRUS ASCENSIONIS (OSBECK). Victoria A Kimler and John D Taylor

3:30 **Refreshments and Poster Viewing**

MELANOMA Monday, June 27, 1:30 pm

Presiding: Meenhard Herlyn and Frank L Meyskens, Jr

1:30 29. BIOLOGY OF MELANOMA DEVELOPMENT AND PROGRESSION. Meenhard Herlyn, Peter Soballe, Ie-Ming Shih, and Mark Nesbit

1:50 30. MSH HORMONE REGULATED INTEGRINS IN MELANOMA/MACROPHAGE HYBRIDS. M Rachkovsky, D Bermudes, S Sodi, J Bolognia and J Pawelek

2:10 31. TUMOR PROGRESSION-RELATED REACTIVITY OF NEVI & MELANOMAS WITH THE MIB-l (Ki-67) ANTIGEN EVALUATED BY STREPTAVIDIN IMMUNOCHEMISTRY IN PARAFFIN SECTIONS. W Carey, P Van Belle, R Elenitsas, D Elder

2:30 32. ROLE OF MELANOGENESIS IN ANTIMELANOMA EFFECT OF N-ACETYL-4-S-CYSTEAMINYLPHENOL AND AN IN VITRO SYNERGISM OF ANTIMELANOMA EFFECT BY BUTHIONINE SULFOXIMINE. K Jimbow, A Gili, F Alena, R Rezska and P Thomas

2:50 33. EXPRESSION OF PROTEIN KINASE C BIl IS LOST DURING HUMAN MELANOCYTE TRANSFORMATION. FL Meyskens Jr, D T Yamanishi, J A Buckmeier and N Tohidian

3:10 34. DIFFERENTIAL mRNA EXPRESSION IN NORMAL HUMAN MELANOCYTES, PRIMARY, AND METASTATIC MELANOMA CELLS. U Rodeck, C Kari, S Oppenheimer, and H-G Simon

3:30 **Refreshments and Poster Viewing**

4:30 35. SERUM 5-S-CYSTEINYLDOPA AS A BIOCHEMICAL MARKER OF MELANOMA: FURTHER PROGRESS IN BASIC AND CLINICAL STUDIES. Shosuke Ito, Kazumasa Wakamatsu, Takashi Horikoshi, and Kazuyuki Ishihara

4:50 36. CD4-POSITIVE, HLA-CLASS l-RESTRICTED, CYTOLYTIC LYMPHOCYTE CLONES SPECIFIC FOR AUTOLOGOUS MALIGNANT MELANOMA. Rajasekharan Somasundaram, Koji Adachi, Elwyn Loh, David Speicher, DuPont Guerry and Dorothee Herlyn

5:10 37. FURTHER STUDIES OF A MULTI-THERAPY RESISTANCE FACTOR PRODUCED BY CLOUDMAN S91 MOUSE MELANOMA CELLS. Shuangwen Zhou, Helene Z Hill, and George Hill

PHYSICAL CONCEPTS, MELANIN AND OXIDATIVE DAMAGE

Tuesday, June 28, 8:30 am

Presiding: Harold M Swartz and Myra K Jacobsohn

8:30 **Feature Presentation:**
38. HYDRATION IN MACROMOLECULAR CONFORMATION AND INTERACTION. V Adrian Parsegian

9:30 39. CONCEPTS, DEFINITIONS, THEORIES, AND MYTHS REGARDING FREE RADICALS AND OXIDATIVE DAMAGE IN BIOLOGICAL SYSTEMS. Harold M Swartz

10:00 40. ESR DETECTION OF REACTIVE OXYGEN-CENTERED AND NITROGEN-CENTERED SPECIES IN CELLULAR SYSTEMS. B Kalyanaraman

10:30 **Refreshments**

10:45 41. OXIDATIVE PROCESSES AND MELANINS. T Sarna

11:15 42. OXIDATIVE DAMAGE, NEUROMELANIN AND PARKINSON'S DISEASE: TENUOUS TENEBROSITY. P A Riley

11:45 43. TYROSINASE ACTIVITY UNDER QUENCHED FREE RADICAL CONDITIONS. Gert M Jacobsohn, Joseph Buchta, Robert Lontz, Karen Koch and Myra K Jacobsohn

ENZYMOLOGY

Tuesday, June 28, 1:30 pm

Presiding: Vincent J Hearing and Francisco Solano

1:30 44. MULTIMERIC FORMS OF TYROSINASE AND THE TYROSINASE-RELATED PROTEINS: EVIDENCE FOR A MELANOGENIC COMPLEX. SJ Orlow, B-K Zhou, AK Chakraborty, S Pifko-Hirst and JM Pawelek

1:50 45. INTERACTIONS AMONG MELANOGENIC ENZYMES. C Jimenez-Cervantes, JC Garcia-Borron, F Solano and JA Lozano

2:10 46. TYROSINASE RELATED PROTEIN 1 (TRP1) FUNCTIONS AS A DHICA OXIDASE IN MELANIN BIOSYNTHESIS. T Kobayashi, K Urabe, A Winder, C Jimenez-Cervantes, G Imokawa, T Brewington, F Solano, J Carlos Garcia-Borron and V Hearing

2:30 47. IDENTIFICATION OF A POTENTIAL LATE STEP IN MELANOGENESIS: ENZYMATIC CONVERSION OF DHICA TO MELANIN. Ashok K Chakraborty, Byoung Se Kwon, Dorothy C Bennett and John M Pawelek

2:50 48. AN ACTIVITY STAINING PROCEDURE FOR DOPACHROME ISOMERASE. Manickam Sugumaran and Kalliappan Nellaiappan

3:10 49. DOPACHROME ISOMERASE IS A REGULATOR OF TYROSINASE ACTIVITY. Manickam Sugumaran

3:30 **Refreshments**

3:45 50. EFFECTS OF MEMBRANE LIPIDS UPON TYROSINASE ACTIVITY. Myra K Jacobsohn, Kristin Gerner, Kyle Campbell, Tony Pham and Gert M Jacobsohn

4:05 51. EFFECT OF LICORICE EXTRACT ON MELANOGENESIS. Koichiro Kameyama and Masato Tagawa

4:25 52. TYROSINASE KINETICS: MECHANISM OF RECRUITMENT BY THIOLS. Sandra Naish-Byfield and Patrick A Riley

4:45 53. CHARACTERIZATION OF THE ROLE OF THE SILVER LOCUS PROTEIN IN MAMMALIAN MELANOGENESIS. Takeshi Kobayashi, Kazunori Urabe, Seth J Orlow, Kiyoshi Higashi, Genji Imokawa, Byoung S Kwon, Brian Potterf and Vincent J Hearing

MELANOCYTE CULTURE

Tuesday, June 28, 1:30 pm

Presiding: Magdalena Eisinger and Raymond E Boissy

1:30 54. ISOLATION AND LONG TERM CULTURE OF HUMAN HAIR FOLLICLE MELANOCYTES. Desmond J Tobin, Stephen R Colen and Jean-Claude Bystryn

1:50 55. NITRIC OXIDE IN CULTURED HUMAN MELANOCYTES. Andreas Marx, Elizabeth Kuklinska, Gisela Moellman and Aaron B Lerner

2:10 56. COMPARISON IN EXPRESSION OF TYROSINASE, TRP-1, AND C-KIT BETWEEN NORMAL HUMAN MELANOCYTES AND "VITILIGO" MELANOCYTES. H Chen and K Jimbow

2:30 57. CULTURE AND CHARACTERIZATION OF FOETAL HUMAN MELANOCYTES. I Caroline Le Poole, Rene MJGJ van den Wijngaard, Wiete Westerhof and Pranab K Das

2:50 58. THE SIGNIFICANCE OF MELANIN CONTENT IN PHOTOPROTECTION OF CULTURED HUMAN MELANOCYTES AGAINST UV RADIATION. Diane Barker, Viki Swope, Kathleen Dixon and Zalfa Abdel-Malek

3:10 59. A MELANOCYTE DIFFERENTIATION FACTOR (MDF) IS DETECTED FROM AN IMMORTALIZED TURTLE LUNG CELL. Ling Hou, T Takeuchi and Byoung Kwon

3:30 **Refreshments**

HORMONES AND RECEPTORS Tuesday, June 28, 3:45 pm

Presiding: Zalfa Abdel-Malek and M Lynn Lamoreux

3:45 60. THE ROLE OF α-MSH, ITS AGONISTS AND c-AMP ON IN VITRO AVIAN MELANOCYTES. Roger R Bowers and Arcadio Biboso

4:05 61. ULTRAVIOLET LIGHT, THE CELL CYCLE AND EXPRESSION OF MSH RECEPTORS. Maria Concetta Fargnoli, Stefano A Sodi, Ashok K Chakraborty, John M Pawelek and Jean Bolognia

4:25 62. ACTIVATION OF COMMON SIGNAL TRANSDUCTION INTERMEDIATES INCLUDING MAP KINASE AND THE TRANSCRIPTION FACTOR CREB IS ENHANCED AND PROLONGED BY SYNERGISTIC GROWTH FACTORS IN HUMAN MELANOCYTES. Markus Bohm, Gisela Moellmann, Elaine Cheng, Bimei Zhao and Ruth Halaban

4:45 63. THE MITOGENIC AND MELANOGENIC STIMULATION OF NORMAL HUMAN MELANOCYTES BY MELANOTROPIC PEPTIDES. Zalfa Abdel-Malek, Viki Swope, Itaru Suzuki, Kazunori Urabe and Vincent Hearing

6:00 **Academy of Natural Sciences: Reception** and **Dinner**

PASPCR Honorary Member: Elizabeth Russell

PASPCR Career Achievement Award: Walter C Quevedo

MELANOGENESIS Wednesday, June 29, 8:30 am

Presiding: Nels H Granholm and John Pawelek

8:30 **Feature Presentation:**
64. MECHANISM OF UV-INDUCED MELANOGENESIS. Barbara A Gilchrest

9:30 65. L-TYROSINE TRANSPORT BY MURINE MELANOSOMES. William A Gahl, Brian Potterf, Frank Tietze, Jacqueline Muller, Takeshi Kobayashi and Vincent Hearing

9:50 66. IDENTIFICATION OF A MELANOSOMAL MATRIX PROTEIN ENCODED BY THE SILVER LOCUS USING "ORGANELLE SCANNING". B-K Zhou, T Kobayashi, DC Bennett, VJ Hearing and SJ Orlow

10:10 67. CHARACTERIZATION AND SUBCELLULAR DISTRIBUTION OF MATRIX/SILVER ANTIGENS. PD Donatien, SJ Orlow, RE Boissy and Y Boissy

10:30 **Refreshments**

10:45 68. CHEMICAL AND STRUCTURAL CHARACTERIZATION OF MELANINS AND MELANOSOMES PRODUCED BY VARIOUS COLOR MUTANTS. Giuseppi Prota, M Lynn Lamoreux, Jacqueline Muller, Alessandra Napolitano, Rosaria Vincensi and Vincent J Hearing

11:05 69. EFFECTS OF THE LETHAL YELLOW ALLELE ON CYSTEINE AND GSH CONCENTRATIONS IN REGENERATING HAIR FOLLICLES OF AGOUTI MUTANT MICE. David E Granholm, R Neil Reese and Nels H Granholm

11:25 70. LETHAL YELLOW GENE MODULATION OF MELANOTROPINS - AGOUTI LOCUS. David G Monroe, Loren D Wipf, Maureen R Diggins, Duane P Matthees and Nels H Granholm

11:45 71. THE MELANOGENIC COMPLEX IN PHEOMELANIC MICE. M Lynn Lamoreux, Bao-Kang Zhou, Susana Rosemblat and Seth Orlow

12:05 72. POSSIBLE CAUSALITY BETWEEN MELANIN AFFINITY OF NEUROTOXIC AGENTS AND PARKINSON'S DISEASE. Bengt S Larsson

12:25 **BUSINESS MEETING of the PASPCR and Presentation of Awards**

POSTERS

73. THE ROLE OF MUC-18 IN MELANOMA DEVELOPMENT AND PROGRESSION. Mei-yu Hsu and Meenhard Herlyn
74. DISRUPTION OF CUTANEOUS NEVI BY GROWING MELANOMA GENERATES BENIGN METASTASES OF NEVOCYTES IN LYMPH NODES. AJ Cochran, K Carson, A-M Lama, P-S Li and D-R Wen
75. TRANSLOCATION OF B16A MELANOMA CELL ORGANELLES AND SUBSEQUENT CELLULAR PROCESS FORMATION IN RESPONSE TO NONLETHAL γ-IRRADIATION, A METASTASIS FACILITATOR. John D Taylor and Maher Haddad
76. FUNCTIONAL ANALYSIS OF A PUTATIVE TRANSPORTER PROTEIN ASSOCIATED WITH ALBINISM AND RELATED PROTEINS. S Saitoh, S-T Lee, L Oskam, RA Hartskeller, M Kilberg, GP Shaw, D Bennett, RA Spritz and RD Nicholls
77. ANALYSIS OF EXPRESSION OF TRP-1 IN AXOLOTL PIGMENT MUTANTS. Tricia L Cooley, Ken Mason and Sally Frost-Mason
78. DIVERGENT MECHANISMS OF FLANK PIGMENT PATTERN FORMATION IN EARLY LARVAL SALAMANDERS. David M Parichy and Carol A Erickson
79. PURIFICATION OF A MELANIZATION INHIBITING FACTOR FROM *RANA FORRERI* VENTRAL SKIN. Preminda Samaraweera, Toshihiko Fukuzawa, Francesco T Mangano, JJ Newton, John H Law, and Joseph T Bagnara
80. FADED: CHARACTERIZATION OF A MOUSE WITH WHITE-BASED HAIRS. Raymond E Boissy, Sang-Seok Oh and M Lynn Lamoreux
81. RECOVERY OF ABNORMAL VISUAL PATHWAYS IN ALBINO MICE BY INTRODUCING TYROSINASE TRANSGENE. Takuji Takeuchi, Yasuhisa Ohfuji, Takeshi Sasamura, Satoshi Tanaka, Mika Tanaka and Hiroaki Yamamoto
82. FURTHER OBSERVATIONS ON THE NATURE OF PREMATURE MELANOCYTE DEATH IN THE HAIR FOLLICLES OF LIGHT SILVER MICE. Walter C Quevedo, Jr, Thomas J Holstein and Jacob Dyckman

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Positions - Wanted and Available :

Please notify us if you have any positions to be listed in this section of our next Newsletter.

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The Bibliography published in this issue covers the period February through April, 1994. If you notice a paper that was not detected by this search that should be included, please send it to us and we will include it in the next issue. We have attempted to highlight any publications which include a member of the PASPCR with an asterisk.

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