PANAMERICAN SOCIETY for PIGMENT CELL RESEARCH

PASPCR Newsletter

Volume 5 Number 1 **March, 1997**

Introduction . . . **by the Publications Committee**

The PASPCR Newsletter is published quarterly and is intended to serve as a means of communication for members of our Society. As such, we invite our members to contribute to the Newsletter; help us to update the Job Listings, Calendar of Events, Meeting Reports, Abstracts in press and other items of general interest. If you attend a scientific meeting at which you heard presentations of interest to PASPCR members, please write a few paragraphs summarizing what was presented and share it with us. If you should have a change of affiliation or 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.

: : : : : REMINDER : : : : : Providence PASPCR Meeting Abstract Deadline - - - MARCH 12th : : :

WorldWideWeb Pages for the PASPCR. The PASPCR now has its own WWW home page. We plan this to be a major source of information for the PASPCR membership. The address is: http://lenti.med.umn.edu/paspcr. This site contains information on the goals of the society, future meetings, council information, past issues of the PASPCR newsletter as well as links to other sites including the InterPig DataBase, past and future International Pigment Cell Conferences (IPCC) and the International Federation of Pigment Cell Societies (IFPCS).

We have now included the membership directory on that page; please notify us if you wish any or all of your information to be deleted or modified on that site.

Please check out the PASPCR web site and send any comments and/or suggestions to either the PASPCR WebMaster Bill Oetting at bill@lenti.med.umn.edu or to Vince Hearing at hearingv@dc37a.nci.nih.gov.

IN THIS ISSUE . . . . .

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Calendar of Events :

Apr 23 - 26, 1997
Society for Investigative Dermatology Annual meeting, Washington, DC (contact: the SID, Suite 500A, 1101 Cedar Ave., Cleveland, OH 44106, FAX: 216: 844-6859)

Jun 10 - 14, 1997
4th World Conference on Melanoma to be held in Sydney, Australia (contact: The Melanoma Foundation, PO Box M123, Camperdown, NSW 2050 Australia; FAX: +61 2/550-6316)

Jun 15- 18, 1997
VIIth PASPCR Annual Meeting, to be held in Providence, RI (contact: Dr. Walter C Quevedo, Jr., Brown University, Division of Biology and Medicine, Providence, RI 02912; FAX: 401/863-1971)

Jun 22 - 24, 1997
International Meeting "Pigmentary Disorders from a Global Perspective" to be held in Bali, Indonesia (contact: Bureau PAOG, Tafelbergweg 25, 1105 BC Amsterdam, The Netherlands; FAX: +31 20/696-3229)

Aug 24 - 29, 1997
International Congress of Biochem & Mol Biology with the Amer Soc for Biochem & Mol Biology, to be held in San Francisco, CA (contact: FASEB, 9650 Rockville Pike, Bethesda, MD 20814, USA; FAX: +1 301/530-7014)

Oct 9- 11, 1997
7th ESPCR Annual Meeting, to be held in Bordeaux, France (contact: 7th ESPCR Meeting Bordeaux, c/o Congres Seminaires Organisation, 81, Boulevard, Pierre 1er, 33110 Le Bouscat, Bordeaux, France)

Dec 13 - 17, 1997
American Society for Cell Biology Annual Meeting, to be held in Washington DC (contact: FASEB, 9650 Rockville Pike, Bethesda, MD 20814, USA; FAX: +1 301/530-7014)

Oct 30 - Nov 3, 1999
XVIIth International Pigment Cell Conference, to be held in Nagoya, Japan (contact: Dr. Shosuke Ito, Fujita Health University School of Health Sciences, Toyoake, Aichi 470-11, Japan; Phone: +81-562-93-2595; Fax: +81-562-93-4595; Email: sito@fujita-hu.ac.jp)

Welcome to New Members

by James J Nordlund

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

Jun-ichiro Hiraoka **Dan-Ning Hu** **Toshihiro Shioda**

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

Corporate Sponsors

by James J Nordlund

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 Corporate Patrons	*SILVER Corporate Patrons*	*Corporate Patrons*
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PASPCR Council Election Results

by James J Nordlund

Congratulations to the new Council Members elected to 3 year terms . . .

Gregory Barsh **Lynn Lamoreux** **John Pawelek**

VIIth Annual Meeting of the PASPCR

by Walter Quevedo/ Hal Swartz

June 15th - 18th, 1997 The Westin Hotel Providence, RI

The Organizing Committee for the 7th Meeting of the PanAmerican Society for Pigment Cell Research enthusiastically invites you to attend the Society's annual meeting this June 15th - 18th in Providence. The Westin Hotel is attractive to the eye and brought to life by a staff that is friendly, professional and efficient. Alistair Cooke has said that Spring in New England is one of America's great attractions. Come and enjoy it with us! We have attempted to supplement Mother Nature's visceral pleasure by providing challenge for the intellect as entertainment and refreshment for periodic relaxation of the mind and body. To get things started, the keynote speakers will provide the foundations for four important themes of the meeting: 1) The molecular biology of melanosome synthesis and function, 2) Novel approaches to the development of anti-melanoma vaccines and other treatments, 3) The origin, distribution and functional significance of ocular melanin, and 4) The nature and significance of programmed death (apoptosis) of normal melanocytes and melanoma cells. Symposia, mini-symposia

and workshops will reflect not only these themes but also those inclusive of the broadest interests of the Society's members. The Sunrise Teaching Sessions will permit individuals specialized in one approach to pigment cell research to gain basic access to the vocabulary, methods and concepts of fellow members taking other approaches. The Program Committee has emphasized the importance of providing opportunities for social interaction throughout the scientific sessions. Social activity beyond the Westin Hotel will include the Annual Reception/Banquet at the Brown Faculty Club noted for its architecture and kitchen. An optional outing to the Haffenreffer Grant of Mt. Hope for a "clambake" will provide an opportunity for a glimpse of the historic buildings of Providence and Bristol, Rhode Island. You might consider lingering in the area for a few days, for historic Newport, Rhode Island and Boston and Cape Cod, Massachusetts are within an hour's drive. The weather should be pleasant, neither too warm or too cool. So help to make the annual meeting a success by attending and actively participating in all of its functions.

For the Organizing Committee, Best Regards /s/ Walter Quevedo and Harold Swartz

PASPCR 7th Annual Meeting

June 15th - 18th, 1997 Westin Hotel Providence, Rhode Island

Calling all members! Time is passing rapidly! In less than 4 short months the Annual Meeting will be in session. It is time to prepare to attend and to participate in all of its scientific and social activities. New features for this year's meeting include "sunrise teaching sessions" and NO parallel sessions! Please note the following important dates:

March 12: Deadline for submitting abstracts.(needed from all speakers, including invited and keynote speakers)
March 12: Deadline for voting for the course subjects of the "Sunrise Sessions"
March 12: Deadline for "Clambake/Steakfry" reservation (a good time at a modest price)
May 14: Deadlines for registration without "late payment charge" and for registration cancellation
May 15: Westin Hotel deadline for making room reservations at the special meeting rate

TENTATIVE PROGRAM

Sunday:
12:00 - 2:00 pm Setup and First Formal Poster Viewing Session
2:00 - 6:00 pm Molecular aspects of Malignant Melanoma; (includes keynote talk): "Identification of Human Melanoma Antigens Recognized by Tumor Infiltrating Lymphocytes - Their Use for Immunotherapy"
6:00 - 7:30 pm Reception
7:30 pm - ??? Dinner (on your own)

Monday:
7:00 - 8:15 am Sunrise session #1 and continental breakfast
8:30 - 11:15 am Pigment Cell Genetics & Molecular Biology
11:15 - 12:00 am Keynote talk: Occurrence and Significance of Apoptosis among Melanocytes and Melanoma Cells
12:00 - 1:15 pm Poster Session #2 & Lunch (on your own)
1:15 - 3:45 pm Role of Melanocyte Death During Development and Adaptive Responses of Skin to Damaging Agents
4:00 - 6:00 pm Signaling Pathways in Pigment Regulation
7:00 - 10:00 pm "Clambake/Steak fry" (optional)

Tuesday:

7:00 - 8:15 am Sunrise session #2 and continental breakfast
8:30 - 12:00 am Melanosomes: Biogenesis and Structure (includes Gelb Lecture)
12:00 - 1:15 pm Poster Session #3 & Lunch (on your own)
1:15 - 3:15 pm Comparative Aspects of Non-Mammalian Pigmentation
3:30 - 6:00 pm Photobiology and Biophysics of Melanin and Melanocytes
7:00 - 10:00 pm Banquet, Brown University Club

Wednesday:
7:00 - 8:15 am Sunrise session #3 and continental breakfast
8:30 - 11:45 am Development, Regulation and Significance of Ocular Pigmentation (includes Keynote Lecture)
12:00 - 1:00 pm Business meeting and presentation of awards

PASPCR Travel Stipend / Young Investigator Award Information by James J Nordlund

The next meeting of the PASPCR is not so far away, a little over 3 months. The ABSTRACT DEADLINE is March 12th for this meeting. Requests for travel support are due in the PASPCR Secretary/Treasurer's office by March 15th. Candidates to receive the Young Investigator Awards must be nominated and those nomination letters must accompany the submitted abstract.

· **Travel Awards**: Travel awards up to $300 are given for students and new faculty needing assistance to attend the annual meeting of the PASPCR. The criteria require that the individual be a student, post-doctoral fellow or member of the faculty for less than 5 years. The candidates must be a coauthor on an abstract and preference is given to those presenting the abstract. A candidate can receive no more than three travel awards. Applications for Travel Stipends must be received in Dr. Jim Nordlund's office by March 15th to be considered.

· **Young Investigator Awards**: There are three young investigator awards, one for students, one for post-docs and one for young faculty (less than 3 years total as a member of a faculty). The award is given both for the work being presented at the PASPCR annual meeting and for other accomplishments. Nominations are made by preceptors and mentors or other individuals. The nomination form with criteria is included in your meeting announcement package. The nomination form must be completed and returned by March 12th with the submitted abstract to Dr. Walter Quevedo's office. An anonymous committee will select the winner who will be named at the meeting in Providence. All awards are not necessarily given each year.

Pigment Cell Research Wants YOU! by James J Nordlund

THE PRICE OF THE JOURNAL PIGMENT CELL RESEARCH COMES TUMBLING DOWN. Hope that the stock markets don't crash like the cost of our pigment journal. Your subscription to Pigment Cell Research will be about 45% less than in previous years. The real price was over $200 but most were getting it at discount for about $160. At the recent meeting in Anaheim, Munskgaard agreed to revise its pricing schedule for the journal Pigment Cell Research for Society members only. For an annual fee of $95 total you can have your own copy of Pigment Cell Research, the official journal of the International Federation of Pigment Cell Societies.

You get a lot for this small price. For example, you will get the bimonthly issues of the latest and best of pigment biology. In addition you will get the proceedings of the meeting of the European Society for Pigment Cell Research to be held in France later this year. You will get the proceedings of the upcoming PASPCR meeting in Providence, RI under the chairmanship of Walt Quevedo. You will get the proceedings of the XVIth meeting including the abstracts and the published manuscripts.

We need everyone's support. We need to get most of the members subscribing to keep this journal flourishing. Joe Bagnara did a yeoman's job getting it up and started and Dr. Jiro Matsumoto is doing a great job making the issues bigger and better.

An application for the journal will be included with your dues statement for 1997.

SUPPORT YOUR JOURNAL AND SOCIETY. SUBSCRIBE TO THE JOURNAL WHEN YOU RENEW YOUR MEMBERSHIP TO PASPCR.

Meeting Report - XIth JSPCR Annual Meeting **by Yasuo Kubota / Jiro Matsumoto**

The XIth Annual Meeting of the JSPCR was held in Kawasaki, Japan from December 6th-7th, 1996. This meeting was organized by the Department of Dermatology, St. Marianna University School of Medicine with Prof Masako Mizoguchi as Chairman and Dr Yasuo Kubota as Secretary/General. The scientific program was composed of two Invited Lectures, one Special Lecture, five Research Seminars and 33 oral presentations. One of the major themes of this meeting was "Melanocyte differentiation and development" and most of the invited and special lectures were arranged along this line of thought.

Invited Lecture 1 "Segregation of melanocyte precursors and regulation of their fate during neural crest development" **Dr James A Weston**, Univ Oregon, addressed that mouse melanocyte precursors (MPs) segregate from the neural crest as that subpopulation enters a migration staging area, takes the dorsal pathway to distribute in the dermal mesenchyme and then reaches the epidermal layer. During their development, MPs transiently require the function of c-kit and its ligand SCF. He presented data relating the expression of SCF mRNA in vivo by means of in situ hybridization.

Special Lecture "Life styles of pigment cells during embryogenesis and postnatal life" **Dr Nishikawa**, Kyoto Univ, presented data on the cellular and molecular basis controlling the proliferation and differentiation of mouse melanocyte precursors. Based on his own and other groups' studies, he addressed that a number of molecules have been expressed from the very early phase of melanocyte differentiation, and that using such molecules as probes, melanocyte precursors have been easily distinguished from other cells of neural crest origin. He concluded that the life styles of melanocytes were essentially determined by the microenvironment where they resided. In this connection, Dr Kunisada, a member of Nishikawa's group, reported in his oral presentation that in transgenic mice bearing mouse SCF-DNAs fused with the human cytokeratin 14 promoter, epidermal melanocytes consecutively proliferate and the whole skin is heavily pigmented, suggesting the importance of SCF for growth, differentiation and motility of melanocytes. They also discussed the accumulation of mast cells in the dermis and epidermis of these hyperpigmented transgenic mice.

Invited Lecture 2 "Regulation of transcription in melanocyte differentiation and development" **Dr Colin Goding**, Marie Curie Research Inst, discussed the role of transcription factors in melanocyte development and differentiation based on his studies regarding identification and characterization of the sequences required for melanocyte-specific expression of the mouse TRP-1 and human tyrosinase promoters. He also discussed Brn-2 (POU domain transcription factor) and a bHLH-LZ protein associated with microphthalmia (Mi). The involvement of Brn-2 in melanocyte development was shown by deterioration of its function upon introduction of a double amino acid substitution to it. The ability of Mi for transcription activation was suggested to be regulated negatively by phosphorylation.

In a Research Seminar, **Dr Tomohisa Hirobe**, National Inst Radiological Sciences, summarized his recent findings on the proliferation and differentiation of mouse epidermal melanocytes following skin wound healing, indicating the combined roles of genetic and local tissue environmental factors. In combination with this seminar, Dr Rikako Furuya, Shiseido Research Center, reported her recent results on skin hyperpigmentation caused by UV irradiation as chronic effects, using melanocytes cultured from disaggregated epidermal cell suspensions of hairless mice (HR-1 x HR/De). Her conclusion was that the

chronic effects of repeated UV exposures on melanocyte proliferation and differentiation were associated largely with changes in the nature of keratinocytes.

In another Research Seminar, **Dr Saida**, Shinshu Univ, presented his concept on "Malignant melanoma (MM) in situ" and emphasized its significance in clinical and basic oncology. He reported several cases of MM in situ appearing in the sole and the nail apparatus and proposed that the concept of MM in situ and the theory of its de novo origin should have great impact on the early correct diagnosis of MM and the design of basic research on human carcinogenesis.

With regard to new melanogenic inhibitors, several papers were read before this meeting; **Dr Funasaka** from Kobe Univ reported the inhibitory effects of DL-a-tocopherol having an antioxidant activity on melanogenesis. Dr Eiichiro Yagi, Pharmaco Science Research Lab, reported that an extract of Cola de caballo, a plant grown in the Andes district, has dual inhibitory effects for melanogenesis and inflammation induced by UVB irradiation. Dr Tomohiro Yokota, Kanebo Cosmetics Lab, reported that glabridin in hydrophobic licorice extracts showed an inhibitory effect on melanogenesis and inflammation. He also mentioned the relationship between the structure of glabridin and these two different inhibitory functions.

As to the intracellular localization of post-DOPAchrome melanogenesis, **Dr Shinkichi Hatae**, Mishima Research Inst for Dermatology, suggested that melanin polymer by DOPAchrome reaction at GERL and coated vesicles is produced by tyrosinase via DHI and that premelanosomes could polymerize melanin monomer, DHI, independently from tyrosinase.

XVIth IPCC (International Pigment Cell Conference) Program Summaries

The XVIth International Pigment Cell Conference was held from October 29th to November 3rd, 1996 at the Disneyland Hotel in Anaheim, California. Frank Meyskens was the Organizer of this meeting with Roger Bowers and Alistair Cochran serving as co-chairs of the Organizing Committee. Following are synopses of the various remaining Symposia, Workshops and Poster Discussions written by Chairs of those sessions that arrived after the publication of the last Newsletter (all of these reviews are also now posted on our Web Site). The Editor conveys a special thank you to all contributors of these summaries.

Symposium IV Photobiology of Melanocytes: Etiology and Prevention by Lisa Zeise

This session had six well-presented papers; however, the presentations would be greatly enhanced if attributes of the light sources used were mentioned.

Nik Kollias: "Photobiology of Human Pigmentation"- The keynote speaker presented a clear, concise review of the literature published on human pigmentation and its regulation. A technique known as laser scanning confocal microscopy (LSCM), was described. Melanin is a good contrast agent and has an index of refraction of 1.7. LSCM utilizes this information for application in viewing actively pigmenting cells. This technique is exciting and will aid in the study of human pigmentation formation in vivo.

Yoko Funasaka: "The effect of ultraviolet B induced adult T cell leukemia-derived factor on survival and growth of human melanocytes"- Adult T cell Leukemia-Derived Factor (ADF), a human homolog of thioredoxin, is induced by hydrogen peroxide and ultraviolet (UV) light, regulates gene expression, and scavenges reactive oxygen species to aid in protecting cells. This paper analyzed the effect of recombinant ADF (rADF) on normal human melanocytes and co-culture melanocytes and keratinocytes after UVB irradiation. ADF release was observed in keratinocytes but not melanocytes or fibroblasts after UVB irradiation. ADF was found to upregulate a-MSH induced DNA synthesis, to strongly induce melanocortin 1 receptor after 24 h, and to sustain survival of both keratinocytes and melanocytes.

Frank L. Meyskens Jr.: "Expression of NK-kB/IkB/c-Rel in human melanocytes and melanoma cells: changes in association and dissociation"- Redox control in melanocytes and melanoma cells was studied by quantifying the presence of NF-kB (p50), IkB, and c-Rel (p75) in basal cells and UVB

stimulated systems. IkB and p50 were expressed more at the basal level in melanoma cells compared to melanocytes. UVB suppressed IkB levels but did not affect p50 levels in melanoma cells. In melanocytes, UVB increased both IkB and p50 levels. In contrast, basal p75 was increased in melanocytes and very low in melanoma cells. UVB also enhanced p75 in melanocytes; melanoma cells showed no difference. Hydrogen peroxide (H2O2), was generated with a glucose/glucose oxidase system and detected by chemiluminescence of luminal. Melanocytes and melanoma cells handled H2O2 differently as evidenced by time course measurements. The closing question posed was, "Is this difference in the handling of H2O2 due to the antioxidant ability of melanin?"

Mauro Picardo: "Alteration of antioxidants in normal melanocytes from patients with melanoma"- The role of free radicals in melanoma production was examined by the activities of superoxide dismutase (SOD) and catalase (CAT), the levels of vitamin E and ubiquinone, and the fatty acid pattern of cell membranes. Normal melanocytes and melanoma cells from the same patient were compared. CAT and SOD activities were higher in melanocytes. Melanoma cells exhibited lower CAT activity and a wide range of SOD activity. Melanoma cells had a higher concentration of arachidonic acid with respect to normal melanocytes. Levels of vitamin E were found to be inversely proportional to CAT activity. The ratio of vitamin E level to CAT activity was felt to correlate with antioxidant activity in cells. In melanoma patients, normal melanocytes were thought to exhibit an alteration in antioxidant pool, and thus, to exhibit increased sensitivity to oxidative stress.

Mayumi Fujita: "Activation of p53 is required for ultraviolet radiation-induced cell cycle arrest, apoptosis and BCL-2 regulation in melanoma cells"- Transcription of the p53 gene is involved in cell cycle arrest. To determine whether UV is involved in this gene mechanism both blocking and induction of p53 were examined. The former was studied using WM 35, the primary melanoma with functional p53, and transfection with the viable gene. Induction was studied by observing how UVB affected the cell cycle. UVB induced p53 expression and lead to cell cycle arrest. UVB also was observed to yield apoptosis in WM35 clones but not in p53 clones. By incorporating a temperature shift (38°C to 32°C), the conformation of p53 protein was changed from mutant to wild-type. Studies using WM 1617 and TS clones of p53 showed that UVB induced cell cycle arrest and apoptosis. Also, wild-type p53 was induced, p21 expression was increased which induced cell arrest. Thus, p53 is crucial for UVR induced cell cycle arrest and apoptosis in melanoma cells.

Ashok K Chakraborty: "Production and release of proopiomelanocortin (POMC) derived peptides by human melanocytes and keratinocytes in culture: regulation by UVB"- It is demonstrated that UVB radiation stimulates increased expression of the proopiomelanocortin (POMC) gene which is accompanied by production and release of a a-melanocyte stimulating hormone and adrenocorticotropin by both normal and malignant human melanocytes and keratinocytes. The production and release of both peptides are also stimulated by dibutyryl cAMP and interleukin 1a but not by endothelin-1 or tumor necrosis factor-a. N-acetyl-cysteine, a precursor of glutathione, an intracellular free radical scavenger, abolishes the UVB-stimulated POMC peptide production and secretion. The conclusions were described and may be found in the following paper: AK Chakraborty et al. (1996) Same title, Biochim Biophys Acta 1313, pp. 130-138.

Workshop D Biophysics and Chemistry of Melanin *by Hal Swartz*

This workshop was organized by **T Sarna**. It brought together presentations and discussions of a wide spectrum of physical and chemical techniques which are helping to elucidate the nature of melanins. This is a most complex and difficult task because of the nature of the melanin molecule: it is a multi-functional polymer with many different and potentially important physical properties and chemical reactivities. The presentation by J Menter on electron transfer and photoprotective properties of melanins in solution focused on the polyquinoid nature of melanin which enables them to couple oxidation of electron donors with the reduction of electron acceptors. The presentation, as did many of the other

presentations, emphasized the importance of the structure of the melanin and the particular conditions in determining the physical and chemical effect that are observed. In looking at a prototypic reduction, i.e., the reduction of ferricyanide, it was shown that melanin could either retard or accelerate the rate or reduction depending on the conditions. An important general principle that was noted is the importance and nature and extent of binding by melanin. The presentation also emphasized the important capability of melanin to affect electron transfer. These properties lead to some important photo chemical interactions as well as dark chemistry.

The presentation by **K Wakamatsu** summarized some of the extensive work done by him in collaboration with S Ito. He reported on their microanalytical methods which make it possible to quantitate the amount of eumelanin and pheomelanin by means of analysis of partial degradation products. The presentation included a demonstration of the validity of their approach by methodology which enabled them to dissolve some melanins completely. The presentation by **R Peter** focused on the redox state of enzymatically generated tyrosine melanin. He showed how very elegant results could be obtained using carbon 13 NMR and isotopic label precursors. With this technique he was able to quantitate the amount of oxidized and reduced subunits. **M Eisner** reported on EXAFS studies of chelated iron sites in natural and synthetic neuromelanins which have been carried out by an international group, including Drs Zecca and Crippa from Italy. It was pointed out that neuromelanins may have an important role in the understanding of Parkinson's Disease. The elegant EXAFS technique was demonstrated to be able to characterize the chelated iron sites in both synthetic neuromelanins and genuine substantia nigra. The results indicated some of the potential problems involved in the use of synthetic neuromelanins, especially if these do not fully reflect the chemical nature of neuromelanin as it is found in the human brain.

The last presentation was by **H Swartz**, who summarized results on the implications of the interactions of melanin with reactive species, based on extensive work done in collaboration with Drs Sarna, Nilges, and Pilas over a number of years. The capabilities of melanin to affect reactions by several different mechanisms was emphasized. Depending on the type of melanin and the conditions, melanin can play an important role by binding and changing the activity of both metal ions and organic molecules and thereby affect the amount of reactive species that are produced. It was emphasized here, as in the other presentations, of the need to take into account the effects of different types of melanin on the particular reaction or biological effect that is being assayed.

Overall, this workshop presented an excellent overview of the nature of melanin and indicated some of the remarkable progress that is occurring in understanding it.

Workshop E Vitiligo ***by David Norris***

This workshop of vitiligo covered topics related to the pathomechanisms of the development of vitiligo, and better approaches to repigmentation in vitiligo. **D Norris** (Univ Colorado) discussed the resistance of epidermal melanocytes to cytotoxic damage, proposing that intrinsic anti-apoptotic defenses mediated by proteins such as bcl-2 protect melanocytes from cytotoxicity induced by immunologic and inflammatory mediators and ultraviolet radiation. The environment of the epidermis is continually exposed to oxidative stress, ultraviolet radiation, cytokines, cytotoxic lymphocytes, and biochemical triggers of cell damage, and melanocyte survival is determined by a balance of survival signals and death signals.

J Nordlund (Univ Cincinnati) discussed proposed etiologies for melanocyte destruction in vitiligo, and alleged that no current proposed mechanism was completely convincing, except for the hypothesis of intrinsic melanocyte defect. This inspired considerable discussion, with a common accord that the multiple possible mechanisms proposed in vitiligo might indeed by involved differentially in distinct subsets of patients. The problems in linking particular mechanisms to melanocyte damage in individual patients were acknowledged.

A Taieb (Bordeaux Univ) demonstrated the usefulness of studying mechanisms of vitiligo in vitro in complex organotypic epidermal cultures, reporting that an intrinsic defect in melanocytes from vitiligo patients is not demonstrated in the absence of external stimuli, and concluding that an external trigger is needed for vitiligo.

R van den Wingaard (Amsterdam Univ) reported that no differences in susceptibility to apoptosis were observed between melanocytes from normals compared to vitiligo subjects. Their work suggested that immunologic cell death of vitiligo melanocytes may be enhanced by changes in bcl-2 levels, which will be better defined in further investigation. They also confirmed reports that melanocytes resist induction of apoptosis triggered by binding the Fas receptor on the melanocyte plasma membrane.

RK Tripathi (Univ Cincinnati) reported on genetic studies to determine whether the MITF (micropthalmia) genetic locus was linked to the development of human vitiligo. Even though this candidate gene is linked to other depigmentary problems, it was found to not be a genetic locus determining human vitiligo.

W Westerhof (Amsterdam Univ) reported on the advantages of narrow-band UVR (311 nm) over typical PUVA therapy. In a large clinical trial, narrow band UVR was found to be more effective than PUVA and offered a number of advantages (safety, ease of treatment, fewer collateral changes). Neither treatment was good for hand and foot vitiligo. Although there is continued progress on understanding basic mechanisms of melanocyte damage in vitiligo and although effective (although slow) treatments are available, we are not yet able to link breakthroughs in understanding the mechanism of this common disease with matched breakthroughs in treatment that are safe, rapid, and effective in all patients. Approaches to repigment hands and feet from endogenous melanocytes are still largely unsuccessful.

Workshop F Control of Melanogenesis by John Pawelek

Dr J Pawelek presented a summary of his work with Dr A Chakraborty in which it was shown that the Pmel17/Silver gene product has the ability to catalyze the polymerization of DHICA into DHICA-melanin, suggesting a potential role for this protein in vivo. He cautioned, however, that in the case of melanogenesis in vitro and in vivo enzymatic activities might not necessarily corrrespond, particularly since melanin intermediates are often a) unstable in vitro, spontaneously creating new potential substrates for the melanogenic factor in question, and b) recognized as substrates by more than one melanogenic protein in vitro.

Dr H Kondoh presented his work with Dr Y Mishima on the role of TRPs in the control of eumelanogenesis. They showed that TRP-2 plays an important role on the content of DHICA-melanin in both eumelanin and mixed melanins, as well as preventing cell death by converting DOPAchrome to DHICA, which has less cytotoxicity than DHI.

Dr F Solano presented work from his laboratory comparing TRP's from murine and human melanoma cells. They found that the three human melanoma lines had less DOPAchrome tautomerase activity than mouse B16 melanoma cells, and that the mouse enzyme appeared to contain Zn at its metal binding sites. Tyrosinase and TRP1 from all cell lines both showed DOPA oxidase activity.

Dr M Miranda presented a spirited and fascinating overview of melanogenesis, tyrosinase expression, and reproductive differentiation in black and white truffles (Ascomycotina). His observations underscored the wide-spread uses that melanins have been put through by various life forms. Of particular interest was the observation that white truffles do not produce black melanins, yet they are tyrosinase positive.

Dr H Chen summarized his work with Dr K Jimbow demonstrating, for the first time, the potential involvement of phosphatidylinositol 3-kinase activity in the sorting and transport of newly synthesized TRP-1 in melanogenesis.

Poster Session #2 Melanogenesis by John Pawelek

Dr B Fuller discussed work from his laboratory on the regulation of tyrosinase in mouse melanoma cells and human melanocytes by PKC and PKA pathways. Using protein kinase inhibitors, evidence was obtained that PKC activity is not associated with stimulation of tyrosinase, rather it seemed to be a negative regulator of the melanogenesis pathway.

Dr K Yasumoto presented his work with Drs Fuse and Shibahara on pigment cell-specific transcription of the tyrosinase family and MITF genes. Their results suggested that transription of the TRP-2 gene is regulated in a different manner from that of the tyrosinase and TRP-1 genes. Further, they idntified a melanocyte-type promoter of the MITF gene and are currently searching for the regulatory elements required for its pigment-specific expression.

Dr Y Xu presented work on sorting of a melanosome membrane protein to both the endosomal and secretory pathways. They found that a major portion of the TRP-1 produced by melanocytic cells is secreted. Cell surface expression of TRP-1 was also detected.

Dr M Furumura and co-workers used the technique of differential display to identify novel genes modulated during pheomelanogenesis. Several clones of cells were isolated that appeared to express genes that were regulated by agouti signalling protein, potentially opening new directions in the understanding of genetic regulation of pheomelanogenesis.

Poster Session #3 Biophysics and Chemistry of Melanin ***by Hal Swartz***

This interesting session was organized by **P Riley**. The session was well attended, indicating the attractiveness of such poster sessions. It consisted of oral presentations of the highlights of some the posters of most general interest that were included in the poster session on biophysics and chemistry of melanin.

Z Abdel-Malek summarized the very interesting and important results on understanding the molecular mechanism of the effect of aMSH on UVB induced growth arrest. It was shown that the aMSH has an important effect on the kinetics but not the extent of apoptosis.

The presentation by **P Autier** highlighted the complex interactions that occur between physical effects such as exposure to sunlight and human behavior. As a consequence of the increased reaction of individuals with certain skin types to UV, the subjects reduced the amount of exposure to sunlight and thereby their risk for malignant disease. Failure to take into account such behavioral changes could lead to erroneous interpretations of the relationship between exposure, practice predisposed to the induction of malignancy, and the amount of malignancy that is observed.

N Kobayashi reported on the phenomenon of photoprotection by supranuclear melanin caps against DNA damage in normal human epidermis. This result suggested that appropriate positioning of melanin over the nucleus could account the observed differences of sun induced skin cancer in highly pigment races.

The final presentation was given by **T Sarna** on behalf of the groups from Krakow and Medical College of Wisconsin. He summarized the complex and very important properties of melanin in both promoting and inhibiting autooxidation. In aggregate, the presentations at this poster session provided a stimulating and informative insight into the wide spectrum of effective approaches being used to relate the biophysical and chemical properties of melanin to human disease.

Invitation to the XVIIth IPCC (International Pigment Cell Conference) ***by Shosuke Ito***

Invitation to the XVIIth International Pigment Cell Conference Nagoya Congress Center
Nagoya, Japan October 30 - November 3, 1999

Dear Colleague:

After the inauguration of the International Federation of Pigment Cell Societies (IFPCS) in Kobe in 1990, the International Pigment Cell Conferences (IPCC) rotate among the European, American , and Asian continents, hosted by one of the three regional societies: the ESPCR, the JSPCR, and the PASPCR. The 15th IPCC was thus held in London in 1993, chaired by Professor Patrick A. Riley, and the 16th IPCC was recently held in Anaheim, California, chaired by Professor Frank L. Meyskens, Jr.

It is our great honor and real pleasure to inform you that the next 17th IPCC will be held in Nagoya, Japan in 1999, co-organized by the IFPCS and the JSPCR. We heartily hope that pigment cell biologists and clinicians will join together in Nagoya in October 1999 to present their latest achievements in the exciting world of pigment cell research. Your participation will be most important for the scientific success of this meeting.

The city of Nagoya, the 4th largest in Japan, enjoys a rich history of traditional culture and a reputation for world-renowned high-tech industries. Nagoya is located at the center of Japan and is easy to access: the Nagoya International Airport is directly connected with 30 cities around the world. The conference site, the Nagoya Congress Center, is newly built and has ample spaces for the participants to discuss and exchange ideas, which we believe will certainly bring about fruitful collaborations.

We will follow the good tradition of the IFPCS leadership in directing scientific programs to unify the three regional societies. Within such a framework, we wish to place special emphasis on poster presentations. We hope to provide a certain number of travel grants for young investigators to attend this meeting. In order to be eligible for such a grant, an applicant has to be a member of one of the three regional societies for at least one year prior to the meeting. We are also planning banquet and social activities in such a way to make your visit to Nagoya most enjoyable and memorable. It will be our great privilege to welcome you and your colleagues to Nagoya in 1999.

Shosuke Ito, Ph.D. Kazumasa Wakamatsu, Ph.D.
Chair, IPCC Nogoya Secretary-General, IPCC Nagoya

For further information please contact us at: Fujita Health University School of Health Sciences, Toyoake, Aichi 470-11, Japan; Phone: +81-562-93-2595; Fax: +81-562-93-4595; Email: sito@fujita-hu.ac.jp

Positions - Wanted and Available :

Postdoctoral Position - Postdoctoral Research Associate position available to conduct research on the structure/function analysis of melanogenic proteins, particularly tyrosinase related protein-1 (TRP1). The primary goal of the project is to assess how TRP1 regulates melanin synthesis, interacts with tyrosinase, and is associated with oculocutaneous albinism type 3 (OCA3). Candidate must have a PhD with experience in routine molecular biology procedures and transfection/site directed mutagenesis technology. Salary will be commensurate with training and experience. Interested individuals should send curriculum vitae to and/or contact: Raymond E. Boissy, Department of Dermatology, University of Cincinnati College of Medicine, 231 Bethesda Avenue - ML0592, Cincinnati, OH, 45267-0592. 513-558-6242 (TEL), 513-558-0198 (FAX), boissyre@uc.edu (E-MAIL).

Cell Biologists - Unilever's Research and Engineering Division has two openings for the following position description. Changes in pigmentation of the skin are part of the adaptation response to a variety of conditions. These changes are caused and characterized by very marked changes in skin cell biology and biochemistry. We wish to recruit two scientists to be part of a new project team researching mechanisms of pigmentation and mode of action of certain skin lightening agents in vivo. The project will require the establishment and investigation of appropriate in vitro and in vivo models for pigmentation research. Expertise required: Candidates must have a good honours degree and PhD in a

biochemical or cell biology subject with at least 3 years of research training in a good laboratory. The candidate must have a proven research record. Postdoctoral experience would be advantageous. Please send your CV quoting the Reference number MM960604 to: Bryony Leleux, Personnel Department, Unilever Research, Colworth Laboratory, Sharnbrook, Bedfordshire, MK44 1LQ; Email bryony.leleux@urcgb.sprint.com.

Predoctoral and Postdoctoral Positions - available for molecular biologists in the areas of drug discovery and metabolism research. Requires experience in gene cloning, DNA sequencing, recombinant protein expression and cell culture methods. Prior experience in dermatology research is desirable. Southern Research Institute is a diversified research and development organization. Our Life Sciences Division provides comprehensive preclinical drug development and testing capabilities as well as basic research in drug design and synthesis, pharmaceutical formulations, toxicology, virology, microbiology, and pharmacology. To apply, send resume or curriculum vitae to: Southern Research Institute, Attention: Suzann Allen, Human Resources, Department 118, P.O. Box 55305, Birmingham, AL, 35255-5305.

Faculty Position - Massachusetts General Hospital, Harvard Medical School, Cutaneous Biology Research Center. The Cutaneous Biology Research Center (CBRC) seeks a molecular, cellular or developmental biologist to establish a program in fundamental research relevant to skin pigmentation. Areas of reseearch can include but are not limited to pigment synthesis and transfer in melanocytes, genetics of mouse coat color and development/migration of neural crest cells. Applicants must have a Ph.D. and/or M.D. degree and relevant postdoctoral experience. Only applicants with a strong research record and the potential to develop extramurally supported research programs will be considered. Individuals with a demonstrated ability to develop imaginative approaches to important biological questions are particularly encouraged to apply. Rank/salary/start-up funds and space are negotiable depending on experience and qualifications. The CBRC occupies 45,000 square feet of fully equipped laboratory space in a new multidisciplinary research facility. Interested individuals should send curriculum vitae, reprints, a statement of research and future directions, along with the names, addresses and telephone numbers of three references to: Dr. Paul F. Goetinck, Chair, Faculty Search Committee, Cutaneous Biology Research Center, Massachusetts General Hospital - East, Building 149, 13th Street, Charlestown, MA 02129

INTERPIG DataBase **by Vincent Hearing**

The INTERPIG database is on the InterNet! You can now access the InterPig DataBase at the following address: http://lenti.med.umn.edu/paspcr/interpig.html. Please note that as of this time, less than 5% of the various IFPCS members have contributed entries. Think of how useful and complete this list would be if everyone took the time to supply their information. Please take a moment to fill out the database data entry form (either online through the Web page or via Email) and send it back to Dr. Hearing. Please contact Vince Hearing or Bill Oetting if you need more information about these mechanisms of submission.

Bibliography :

The Bibliography published in this issue covers the period November, 1996 through January, 1997. 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 a star.

Bessou S, Etienne J, Surlevebazeille JE, Pain C, Donatien P, Taieb A: Ex vivo study of skin phototypes. J Invest Dermatol 107:684-688 (1996).

Boldeman C, Beitner H, Jansson B, Nilsson B, Ullen H: Sunbed use in relation to phenotype, erythema, sunscreen use and skin diseases. A questionnaire survey among Swedish adolescents. Br J Dermatol 135:712-716 (1996).

Clare E, Hoskins SG: A novel antigen is shared by retinal pigment epithelium and pigmented neural crest. Dev Genes Evol 206:195-206 (1996).

Deangelis F, Arcadi A, Marinelli F, Paci M, Botti D, Pacioni G, Miranda M: Partial structures of truffle melanins. Phytochemistry 43:1103-1106 (1996).

deOliveira AR, Castrucci AML, Visconti MA: Cellular signalling in vertebrate pigment cells. Braz J Med Biol Res 29:1743-1749 (1996).

Furumura M, Sakai C, Abdelmalek Z, Barsh GS, Hearing VJ: The interaction of agouti signal protein and melanocyte stimulating hormone to regulate melanin formation in mammals. Pigm Cell Res 9:191-203 (1996).

Furuta T, Momotake A, Sugimoto M, Hatayama M, Torigai H, Iwamura M: Acyloxycoumarinylmethyl-caged cAMP, the photolabile and membrane-permeable derivative of cAMP that effectively stimulates pigment-dispersion response of melanophores. Biochem Biophys Res Commun 228:193-198 (1996).

Hedley S, Gawkrodger DJ, Weetman AP, MacNeil S: Investigation of the influence of extracellular matrix proteins on normal human melanocyte morphology and melanogenic activity. Br J Dermatol 135:888-897 (1996).

Kippenberger S, Bernd A, Bereiterhahn J, Ramirezbosca A, Kaufmann R, Holzmann H: Transcription of melanogenesis enzymes in melanocytes: Dependence upon culture conditions and co-cultivation with keratinocytes. Pigm Cell Res 9:179-184 (1996).

Kubo Y, Takano Y, Endo N, Yasuda N, Tajima S, Furusawa I: Cloning and structural analysis of the melanin biosynthesis gene SCD1 encoding scytalone dehydratase in Colletotrichum lagenarium. Appl Environ Microbiol 62:4340-4344 (1996).

Li Q, Sun B, Dastgheib K, Chan CC: Suppressive effect of transforming growth factor b 1 on the recurrence of experimental melanin protein-induced uveitis: Upregulation of ocular interleukin-10. Clin Immunol Immunopathol 81:55-61 (1996).

Miyashita Y, Moriya T, Yokosawa N, Hatta S, Arai JI, Kusunoki S, Toratani S, Yokosawa H, Fujii N, Asami K: Light-sensitive response in melanophores of Xenopus laevis .2. Rho is involved in light-induced melanin aggregation. J Exp Zool 276:125-131 (1996).

Murata M, Mizusawa H, Yamanouchi H, Kanazawa I: Chronic levodopa therapy enhances dopa absorption: Contribution to wearing-off. J Neural Transm 103:1177-1185 (1996).

Nakagawa H, Imokawa G: Characterization of melanogenesis in normal human epidermal melanocytes by chemical and ultrastructural analysis. Pigm Cell Res 9:175-178 (1996).

Nakamura S, Nakazawa M, Yoshioka M, Nagano I, Nakamura H, Onodera J, Tamai M: Melanin-laden macrophages in cerebrospinal fluid in Vogt-Koyanagi-Harada syndrome. Arch Ophthalmol 114:1184-1188 (1996).

Napolitano A, Palumbo A, dIschia M, Prota G: Mechanism of selective incorporation of the melanoma seeker 2-thiouracil into growing melanin. J Med Chem 39:5192-5201 (1996).

Okun MR: The role of peroxidase in mammalian melanogenesis: A review. Physiol Chem Phys Med Nmr 28:91-101 (1996).

Puri N, Vanderweel MB, Dewit FS, Asghar SS, Das PK, Ramaiah A, Westerhof W: Basic fibroblast growth factor promotes melanin synthesis by melanocytes. Arch Dermatol Res 288:633-635 (1996).

Romerograillet C, Aberdam E, Biagoli N, Massabni W, Ortonne JP, Ballotti R: Ultraviolet B radiation acts through the nitric oxide and cGMP signal transduction pathway to stimulate melanogenesis in human melanocytes. J Biol Chem 271:28052-28056 (1996).

Smiththomas L, Richardson P, Thody AJ, Graham A, Palmer I, Flemming L, Parsons MA, Rennie IG, MacNeil S: Human ocular melanocytes and retinal pigment epithelial cells differ in their melanogenic properties in vivo and in vitro. Curr Eye Res 15:1079-1091 (1996).

Starnecker G: Occurrence of a pupal melanization reducing factor in different insects. Z Naturforsch C 51:759-762 (1996).

Tief K, Hahne M, Schmidt A, Beermann F: Tyrosinase, the key enzyme in melanin synthesis, is expressed in murine brain. Eur J Biochem 241:12-16 (1996).

Costlow ME, Agin PP, Dowdy J: Diacylglycerol-induced tanning. J Invest Dermatol 108:120-121 (1997).

Takano Y, Kubo Y, Kuroda I, Furusawa I: Temporal transcriptional pattern of three melanin biosynthesis genes, PKS1, SCD1, and THR1, in appressorium- differentiating and nondifferentiating conidia of Colletotrichum lagenarium. Appl Environ Microbiol 63:351-354 (1997).

MELANOCYTES & KERATINOCYTES

Ackerman AB: Discordance among expert pathologists in diagnosis of melanocytic neoplasms. Hum Pathol 27:1115-1116 (1996).

Benathan M, Labidi F: Cysteine-dependent 5-S-cysteinyldopa formation and its regulation by glutathione in normal epidermal melanocytes. Arch Dermatol Res 288:697-702 (1996).

Breitbart M, Metneki J, Weichenthal M, Thrane J, Beres J, Rott HD, Breitbart EW: A study of Hungarian twins involving the influence of genetic and environmental factors on benign, melanocytic lesions. European J Dermatology 6:548-551 (1996).

Byers HR, Duncan LM: In situ distribution of integrin a(2)b(1) and a-actinin in melanocytic proliferation. - Reply. Modern Pathol 9:1179(1996).

Cramer SF: In situ distribution of integrin a(2)b(1) and a-actinin in melanocytic proliferation. Modern Pathol 9:1178-1179 (1996).

Devries TJ, Ruiter DJ, Weidle UH, Vanmuijen GNP: Localization of the components of the plasminogen activation system in cutaneous melanocytic lesions - A minireview. Fibrinolysis 10:91-94 (1996).

Ferreira APS, Mazzucatto LF, Ramos ES, PinaNeto JM: Trisomy 13 mosaicism demonstrated only in skin fibroblasts in a patient presenting psychomotor retardation, pigmentary dysplasia and some dysmorphic features. Braz J Genet 19:655-657 (1996).

Gniadecka M, Wulf HC, Mortensen NN, Poulsen T: Photoprotection in vitiligo and normal skin - A quantitative assessment of the role of stratum corneum, viable epidermis and pigmentation. Acta Derm Venereol [Stockh] 76:429-432 (1996).

Grob JJ, Bastujigarin S, Vaillant L, Roujeau JC, Bernard P, Sassolas B, Guillaume JC: Excess of nevi related to immunodeficiency: A study in HIV-infected patients and renal transplant recipients. J Invest Dermatol 107:694-697 (1996).

Happle R, Hoffmann R, Restano L, Caputo R, Tadini G: Phacomatosis pigmentokeratotica: A melanocytic-epidermal twin nevus syndrome. Am J Med Genet 65:363-365 (1996).

Hara M, Toyoda M, Yaar M, Bhawan J, Avila EM, Penner IR, Gilchrest BA: Innervation of melanocytes in human skin. J Exp Med 184:1385-1395 (1996).

Harwood CA, Green MA, Cook MG: CD44 expression in melanocytic lesions: A marker of malignant progression? Br J Dermatol 135:876-882 (1996).

Hirobe T: Hydrocortisone is involved in regulating the proliferation and differentiation of mouse epidermal melanoblasts in serum-free culture in the presence of keratinocytes. Eur J Cell Biol 71:387-394 (1996).

Leigh CJ, Palechek PL, Knutson JR, McCarthy JB, Cohen MB, Argenyi ZB: CD44 expression in benign and malignant nevomelanocytic lesions. Hum Pathol 27:1288-1294 (1996).

Liu PY, Bondesson L, Lontz W, Johansson O: The occurrence of cutaneous nerve endings and neuropeptides in vitiligo vulgaris: A case-control study. Arch Dermatol Res 288:670-675 (1996).

Luther H, Altmeyer P, Garbe C, Ellwanger U, Jahn S, Hoffmann K, Segerling M: Increase of melanocytic nevus counts in children during 5 years of follow-up and analysis of associated factors. Arch Dermatol 132:1473-1478 (1996).

Maeda K, Naganuma M, Fukuda M, Matsunaga J, Tomita Y: Effect of pituitary and ovarian hormones on human melanocytes in vitro. Pigm Cell Res 9:204-212 (1996).
Marks R: Benign melanocytic lesions. J Am Acad Dermatol 35:1017-1018 (1996).
Nehal KS, Pebenito R, Orlow SJ: Analysis of 54 cases of hypopigmentation and hyperpigmentation along the lines of Blaschko. Arch Dermatol 132:1167-1170 (1996).
Paller AS: Pigmentary patterning as a clinical clue of genetic mosaicism. Arch Dermatol 132:1234-1235 (1996).
Pierard GE, Pierardfranchimont C, Nikkels A, Nikkelstassoudji N, Arrese JE, Bourguignon JP: Naevocyte triggering by recombinant human growth hormone. J Pathol 180:74-79 (1996).
Provance DW, Wei M, Ipe V, Mercer JA: Cultured melanocytes from dilute mutant mice exhibit dendritic morphology and altered melanosome distribution. Proc Natl Acad Sci USA 93:14554-14558 (1996).
Ramachandra S, Gillett CE, Millis RR: A comparative immunohistochemical study of mammary and extramammary Paget's disease and superficial spreading melanoma, with particular emphasis on melanocytic markers. Virchows Archiv 429:371-376 (1996).
Raman A, Lin ZX, Sviderskaya E, Kowalska D: Investigation of the effect of Angelica sinensis root extract on the proliferation of melanocytes in culture. J Ethnopharmacol 54:165-170 (1996).
Reid RW, Oconnor FL, Deakin AG, Ivery DM, Crayton JW: Cocaine and metabolites in human graying hair: Pigmentary relationship. J Toxicol-Clin Toxicol 34:685-690 (1996).
Shiojiri N, Oguri Y, Satoh H, Nakamura A: Distribution of melanocytes in feather germs of a plumage mutant Bh (black at hatch) embryo of Japanese quail (Coturnix coturnix japonica). Zool Sci 13:719-723 (1996).
Slominski A, Baker J, Ermak G, Chakraborty A, Pawelek J: Ultraviolet B stimulates production of corticotropin releasing factor (CRF) by human melanocytes. FEBS Lett 399:175-176 (1996).
Takeda Y: Melanocytes in malignant ameloblastoma. Pathol Int 46:777-781 (1996).
Titusernstoff L, Thorn M, Tosteson TD, Brahme EM, Yuen J, Baron JA, Adami HO: The accuracy of skin self-examination for atypical nevi. Epidemiology 7:619-623 (1996).
Vaisanen A, Tuominen H, Kallioinen M, TurpeenniemiHujanen T: Matrix metalloproteinase-2 (72 kD type IV collagenase) expression occurs in the early stage of human melanocytic tumour progression and may have prognostic value. J Pathol 180:283-289 (1996).
Whitmore SE: Benign melanocytic lesions. J Am Acad Dermatol 35:1018-1019 (1996).
Xu XL, Thornwall M, Lundin LG, Chhajlani V: Val92Met variant of the melanocyte stimulating hormone receptor gene. Nat Genet 14:384(1996).
Yanagi K, Haneji N, Ishimaru N, Hamano H, Hayashi Y: Immunopathological analysis of mucosal melanocyte distribution in the human lower lip of the elderly. Pathobiology 64:156-160 (1996).
Sviderskaya EV, Bennett DC, Ho LL, Tu BL, Lee ST, Spritz RA: Complementation of hypopigmentation in p-mutant (pink-eyed dilution) mouse melanocytes by normal human P cDNA, and defective complementation by OCA2 mutant sequences. J Invest Dermatol 108:30-34 (1997).

MELANOMA & METASTASIS

Ahmed MM, Venkatasubbarao K, Fruitwala SM, Muthukkumar S, Wood DP, Sells SF, Mohiuddin M, Rangnekar VM: EGR-1 induction is required for maximal radiosensitivity in A375-C6 melanoma cells. J Biol Chem 271:29231-29237 (1996).
Allen DH, LeppleWienhues A, Cahalan MD: Ion channel phenotype of melanoma cell lines. J Membrane Biol 155:27-34 (1997).
Altshuler JH: Lentigo maligna and lentigo maligna melanoma. J Am Acad Dermatol 35:1016(1996).
Banerjee SS, Bishop PW, Nicholson CM, Eyden BP: Malignant melanoma showing smooth muscle differentiation. J Clin Pathol 49:950-951 (1996).
Baron PL: The surgical management of melanoma: From diagnosis to local treatment. Semin Oncol 23:714-718 (1996).
Bartkova J, Lukas J, Guldberg P, Alsner J, Kirkin AF, Zeuthen J, Bartek J: The p16-cyclin D/Cdk4-pRb pathway as a functional unit frequently altered in melanoma pathogenesis. Cancer Res 56:5475-5483 (1996).
Benhammouda A, Auclerc G, Coeffic D, Weil M, Nizri D, Soubrane C, Banzet P, Khayat D: Chemotherapy and immunotherapy for disseminated malignant melanomas. Presse Med 25:1690(1996).

BenIzhak O, Levy R, Weill S, Groisman G, Cohen H, Stajerman S, Misselevich I, Nitecky S, Eidelman S, Kerner H: Anorectal malignant melanoma: A clinicopathologic study, including immunohistochemistry and DNA flow cytometry. Cancer 79:18-25 (1997).

Benyosef R, Braverman I, Saah D, Nagler R, Shohat S, Or R, Nagler A: Mucosal melanoma following autologous stem cell transplantation for non-Hodgkin's lymphoma (NHL). Bone Marrow Transplant 18:1017-1019 (1996).

Blasko M, Chalupa I, Borovansky J, Tocekova M, Siracky J: Approaches to prove the melanoma origin in amelanotic human melanoma cell lines. Neoplasma 43:411-415 (1996).

Blaya C, Crespo J, Crespo A, Alino SF: Anti-interleukin 4 antibody and indomethacin synergistic effect on B16 melanoma tumor progression. J Pharmacol Exp Ther 279:472-477 (1996).

Brandau W, Niehoff T, Pulawski P, Jonas M, Dutschka K, Sciuk J, Coenen HH, Schober O: Structure distribution relationship of iodine-123-iodobenzamides as tracers for the detection of melanotic melanoma. J Nucl Med 37:1865-1871 (1996).

Briollais L, Chompret A, Guilloudbataille M, Feingold N, Avril MF, Demenais F: Genetic and epidemiological risk factors for a malignant melanoma-predisposing phenotype: The great number of nevi. Genet Epidemiol 13:385-402 (1996).

Busca R, Bertolotto C, Ortonne JP, Ballotti R: Inhibition of the phosphatidylinositol 3-kinase/p70(S6)- kinase pathway induces B16 melanoma cell differentiation. J Biol Chem 271:31824-31830 (1996).

Butt A, Roberts DL, Calvert JP, Williams S: Primary malignant melanomas of cervix uteri and vulva. Br J Dermatol 135:858-859 (1996).

Buzaid AC, Grimm EA: Biochemotherapy for advanced melanoma. Encyclopedia of Cancer, Vol 1 149-155:-155 (1997).

Byrne DS, McKay AJ, Blackie R, MacKie RM: A comparison of dosimetric methods in isolated limb perfusion with melphalan for malignant melanoma of the lower extremity. Eur J Cancer 32A:2082-2087 (1996).

CannonAlbright LA, Kamb A, Skolnick M: A review of inherited predisposition to melanoma. Semin Oncol 23:667-672 (1996).

Caplan SE, Kauffman CL: Primary inoculation tuberculosis after immunotherapy for malignant melanoma with BCG vaccine. J Am Acad Dermatol 35:783-785 (1996).

Cole BF, Gelber RD, Kirkwood JM, Goldhirsch A, Barylak E, Borden E: Quality-of-life - adjusted survival analysis of interferon a-2b adjuvant treatment of high-risk resected cutaneous melanoma: An Eastern Cooperative Oncology Group Study. J Clin Oncol 14:2666-2673 (1996).

Cole DJ, Baron PL: Surgical management of patients with intermediate thickness melanoma: Current role of elective lymph node dissection. Semin Oncol 23:719-724 (1996).

Coleman DJ: No one knows the preferred management for choroidal melanoma. Am J Ophthalmol 122:913(1996).

Coleman K, Baak JPA, Vandiest PJ, Mullaney J: Prognostic value of morphometric features and the Callender classification in uveal melanomas. Ophthalmology 103:1634-1641 (1996).

Colin A, Boire JY, Bonafous J, Michelot J, Bacin F, Moreau MF, Veyre A: Application of textural features to the detection of ocular melanomas in scintigraphy. Comput Biomed Res 29:418-428 (1996).

Conlon KC, Anver MR, Longo DL, Ortaldo JR, Murphy WJ: Adoptive immunotherapy involving recombinant human M-CSF and R24 anti-melanoma antibody induces human T-cell infiltration into human melanoma xenografts. J Immunother 19:317-323 (1996).

Corpron CA, Black CT, Ross MI, Herzog CS, Ried HL, Lally KP, Andrassy RJ: Melanoma as a second malignant neoplasm after childhood cancer. Am J Surg 172:459-462 (1996).

Cowley GP, Gallimore A: Malignant melanoma metastasising to a basal cell carcinoma. Histopathology 29:469-470 (1996).

Damato B, Foulds WS: Indications for trans-scleral local resection of uveal melanoma. Br J Ophthalmol 80:1029(1996).

Dave BJ, Singh R, Fidler IJ, Pathak S: Chromosome 14 alteration is associated with increased collagenase expression and the metastatic potential of murine melanomas. Cancer Genet Cytogenet 92:66-72 (1996).

Debruyne LA, Chang AE, Cameron MJ, Yang ZY, Gordon D, Nabel EG, Nabel GJ, Bishop DK: Direct transfer of a foreign MHC gene into human melanoma alters T cell receptor V b usage by tumor-infiltrating lymphocytes. Cancer Immunol Immunother 43:49-58 (1996).

Delmar CB: How many melanomas have I missed? Is this the question? Med J Aust 165:456(1996).

Delmarmol V, Ito S, Bouchard B, Libert A, Wakamatsu K, Ghanem G, Solano F: Cysteine deprivation promotes eumelanogenesis in human melanoma cells. J Invest Dermatol 107:698-702 (1996).

Depotter P, Shields CL, Shields JA, Cater JR, Brady LW: Plaque radiotherapy for juxtapapillary choroidal melanoma: Visual acuity and survival outcome. Arch Ophthalmol 114:1357-1365 (1996).

Dibernardo C, Pacheco EM, Hughes JR, Iliff WJ, Byrne SF: Echographic evaluation and findings in metastatic melanoma to extraocular muscles. Ophthalmology 103:1794-1797 (1996).

Draeger J, Schell H, Kiesewetter F, Liehr T, Gebhart E: Chromosome gain and loss in paraffin sections from malignant melanomas of the skin. Int J Oncol 10:89-92 (1997).

Elwood JM: Melanoma and sun exposure. Semin Oncol 23:650-666 (1996).

Fierlbeck G, Ulmer A, Schreiner T, Stroebel W, Schiebel U, Brzoska J: Pharmacodynamics of recombinant IFN-b during long-term treatment of malignant melanoma. J Interferon Cytokine Res 16:777-781 (1996).

Fleischmann CM, Stanton GJ, Fleischmann WR: Enhanced in vivo sensitivity of in vitro interferon- treated B16 melanoma cells to CD8 cells and activated macrophages. J Interferon Cytokine Res 16:805-812 (1996).

Florenes VA, Bhattacharya N, Bani MR, BenDavid Y, Kerbel RS, Slingerland JM: TGF-b mediated G(1) arrest in a human melanoma cell line lacking p15(INK4B): Evidence for cooperation between p21(Cip1/WAF1) and p27. Oncogene 13:2447-2457 (1996).

Flores JF, Walker GJ, Glendening JM, Haluska FG, Castresana JS, Rubio MP, Pastorfide GC, Boyer LA, Kao WH, Bulyk ML, Barnhill RL, Hayward NK, Housman DE, Fountain JW: Loss of the p16(INK4a) and p15(INK4b) genes, as well as neighboring 9p21 markers, in sporadic melanoma. Cancer Res 56:5023-5032 (1996).

Garrison M, Nathanson L: Prognosis and staging in melanoma. Semin Oncol 23:725-733 (1996).

GattoniCelli S, Cole DJ: Melanoma-associated tumor antigens and their clinical relevance to immunotherapy. Semin Oncol 23:754-758 (1996).

Glass LF, Pepine ML, Fenske NA, Jaroszeski M, Reintgen DS, Heller R: Bleomycin-mediated electrochemotherapy of metastatic melanoma. Arch Dermatol 132:1353-1357 (1996).

Glassmarmor L, Morgenstern H, Beitner R: Calmodulin antagonists decrease glucose 1,6-bisphosphate, fructose 1,6-bisphosphate, ATP and viability of melanoma cells. Eur J Pharmacol 313:265-271 (1996).

Gossett R, Kier AB, Schroeder F, McConkey D, Fadok V, Amoss MS: Cycloheximide-induced apoptosis in melanoma cells derived from regressing cutaneous tumours of Sinclair swine. J Comp Pathol 115:353-372 (1996).

Gouon V, Tucker GC, KrausBerthier L, Atassi G, Kieffer N: Up-regulated expression of the b 3 integrin and the 92- kDA gelatinase in human HT-134 melanoma cell tumors grown in nude mice. Int J Cancer 68:650-662 (1996).

Green G, Veitch P: Amelanotic melanoma and hypercalcaemia. Aust NZ J Med 26:716-717 (1996).

Green SP, Chuntharapai A, Curnutte JT: Interleukin-8 (IL-8), melanoma growth-stimulatory activity, and neutrophil-activating peptide selectively mediate priming of the neutrophil NADPH oxidase through the type A or type B IL-8 receptor. J Biol Chem 271:25400-25405 (1996).

Grin CM, Driscoll MS, GrantKels JM: Pregnancy and the prognosis of malignant melanoma. Semin Oncol 23:734-736 (1996).

Grob JJ, Bonerandi JJ: Screening for melanoma. Bull Cancer 83:758-760 (1996).

Gudat F, Zuber M, Durmuller U, Kocher T, Schaefer C, Noppen C, Spagnoli G: The tumour-associated antigen MAGE-1 is detectable in formalin-fixed paraffin sections of malignant melanoma. Virchows Archiv 429:77-81 (1996).

Hahne M, Rimoldi D, Schroter M, Romero P, Schreier M, French LE, Schneider P, Bornand T, Fontana A, Lienard D, Cerottini JC, Tschopp J: Melanoma cell expression of Fas(Apo-1/CD95) ligand: Implications for tumor immune escape. Science 274:1363-1366 (1996).

Hashimoto Y, Shindookada N, Tani M, Takeuchi K, Toma H, Yokota J: Identification of genes differentially expressed in association with metastatic potential of K-1735 murine melanoma by messenger RNA differential display. Cancer Res 56:5266-5271 (1996).

Heredia A, Villena J, Romaris M, Molist A, Bassols A: The effect of TGF-b 1 on cell proliferation and proteoglycan production in human melanoma cells depends on the degree of cell differentiation. Cancer Lett 109:39-47 (1996).

Hosten N, Bornfeld N, Wassmuth R, Lemke AJ, Sander B, Bechrakis NE, Felix R: Uveal melanoma: Detection of extraocular growth with MR imaging and US. Radiology 202:61-67 (1997).

Huang SY, Luca M, Gutman M, McConkey DJ, Langley KE, Lyman SD, BarEli M: Enforced c-KIT expression renders highly metastatic human melanoma cells susceptible to stem cell factor-induced apoptosis and inhibits their tumorigenic and metastatic potential. Oncogene 13:2339-2347 (1996).

Iwamoto S, Odland PB, Piepkorn M, Bothwell M: Evidence that the p75 neurotrophin receptor mediates perineural spread of desmoplastic melanoma. J Am Acad Dermatol 35:725-731 (1996).

Jay V, Yi Q, Hunter WS, Zielenska M: p53 expression in uveal malignant melanomas. Pathology 28:306-308 (1996).

Jenrette JM: Malignant melanoma: The role of radiation therapy revisited. Semin Oncol 23:759-762 (1996).

Joshi M: The importance of L-arginine metabolism in melanoma: An hypothesis for the role of nitric oxide and polyamines in tumor angiogenesis. Free Radical Biol Med 22:573-578 (1997).

Ju DW, Cao XT, Acres B: Active specific immunotherapy of pulmonary metastasis with vaccinia melanoma oncolysate prepared from granulocyte/macrophage colony-stimulating-factor-gene- encoded vaccinia virus. J Cancer Res Clin Oncol 122:716-722 (1996).

Kanzler MH, Swetter SM: Surgical margins for malignant melanoma: Another point of view. J Am Acad Dermatol 35:1014-1015 (1996).

Keller JM, Maize JC: The clinical and histological differential diagnosis of malignant melanoma. Semin Oncol 23:693-702 (1996).

Kim JH, Hahm KH, Cho CK, Yoo SY: Protein biosynthesis in low dose ionizing radiation- adapted human melanoma cells. J Radiat Res 37:161-169 (1996).

Kiratli H, Bilgic S, Satilmis M: Ocular melanocytosis associated with intracranial melanoma. Br J Ophthalmol 80:1025(1996).

Kuwashima Y: Cytomorphology of murine B16 melanoma in vivo after treatment with cyclophosphamide: Evidence of "oncotic" cell death. Anticancer Res 16:2997-3000 (1996).

Lee CS, Pirdas A, Lee MWK: Immunohistochemical demonstration of the nm23-H1 gene product in human malignant melanoma and spitz nevi. Pathology 28:220-224 (1996).

Lee JE, Reveille JD, Platsoucas CD: Association of HLA-DQB1*0301 with malignant melanoma. J Immunother 19:381-383 (1996).

Lee JH, Miele ME, Hicks DJ, Phillips KK, Trent JM, Weissman BE, Welch DR: KiSS-1, a novel human malignant melanoma metastasis- suppressor gene. J Nat Cancer Inst 88:1731-1737 (1996).

Legha SS, Ring S, Bedikian A, Plager C, Eton O, Buzaid AC, Papadopoulos N: Treatment of metastatic melanoma with combined chemotherapy containing cisplatin, vinblastine and dacarbazine (CVD) and biotherapy using interleukin-2 and interferon-a. Ann Oncol 7:827-835 (1996).

Li MF, Muller J, Rao V, Hearing V, Lueders K, Gorelik E: Loss of intracisternal A-type retroviral particles in BL6 melanoma cells transfected with MHC class I genes. J Gen Virol 77:2757-2765 (1996).

Link EM, Michalowski AS, Rosch F: At-211-methylene blue for targeted radiotherapy of disseminated melanoma: Microscopic analysis of tumour versus normal tissue damage. Eur J Cancer 32A:1986-1994 (1996).

Longacre TA, Egbert BM, Rouse RV: Desmoplastic and spindle-cell malignant melanoma: An immunohistochemical study. Am J Surg Pathol 20:1489-1500 (1996).

Luther H, Lubowietzki M, Rochling A, Kissler M, Altmeyer P: Long-term survival of metastatic melanoma after repeated surgical interventions. European J Dermatology 6:515-518 (1996).

Luyten GPM, Mooy CM, Post J, Jensen OA, Luider TM, Dejong PTVM: Metastatic uveal melanoma - A morphologic and immunohistochemical analysis. Cancer 78:1967-1971 (1996).

Maelandsmo GM, Holm R, Fodstad O, Kerbel RS, Florenes VA: Cyclin kinase inhibitor p21(WAF1/ClP1) in malignant melanoma: Reduced expression in metastatic lesions. Am J Pathol 149:1813-1822 (1996).
Maeurer MJ, Gollin SM, Martin D, Swaney W, Bryant J, Castelli C, Robbins P, Parmiani G, Storkus WJ, Lotze MT: Tumor escape from immune recognition - Lethal recurrent melanoma in a patient associated with downregulation of the peptide transporter protein TAP-1 and loss of expression of the immunodominant MART-1/Melan-A antigen. J Clin Invest 98:1633-1641 (1996).
Malouf JF, Thompson RC, Maples WJ, Wolfe JT: Diagnosis of right atrial metastatic melanoma by transesophageal echocardiographic-guided transvenous biopsy. Mayo Clin Proc 71:1167-1170 (1996).
Marghoob AA, Slade J, Kopf AW, Salopek TG, Rigel DS, Bart RS: Risk of developing multiple primary cutaneous melanomas in patients with the classic atypical-mole syndrome: A case- control study. Br J Dermatol 135:704-711 (1996).
Mason MD, Allman R, Quibell M: Adhesion molecules in melanoma - More than just superglue? J R Soc Med 89:393-395 (1996).
Mastrangelo MJ, Maguire HC, Sato T, Nathan FE, Berd D: Active specific immunization in the treatment of patients with melanoma. Semin Oncol 23:773-781 (1996).
McCarthy WH, Shaw HM, McCarthy SW, Rivers JK, Thompson JF: Cutaneous melanomas that defy conventional prognostic indicators. Semin Oncol 23:709-713 (1996).
McClay EF, McClay MET: Systemic chemotherapy for the treatment of metastatic melanoma. Semin Oncol 23:744-753 (1996).
McNamara M, Clynes M, Dunne B, Nicamhlaoibh R, Lee WR, Barnes C, Kennedy SM: Multidrug resistance in ocular melanoma. Br J Ophthalmol 80:1009-1012 (1996).
Menzies SW, Ingvar C, Crotty KA, McCarthy WH: Frequency and morphologic characteristics of invasive melanomas lacking specific Surface microscopic features. Arch Dermatol 132:1178-1182 (1996).
Metcalf JS: Melanoma: Criteria for histological diagnosis and its reporting. Semin Oncol 23:688-692 (1996).
Muchmore JH, Mizuguchi RS, Lee C: Malignant melanoma in American black females: An unusual distribution of primary sites. J Amer Coll Surgeons 183:457-465 (1996).
Mysliwski A, Sosnowska D, Bigda J: Effect of tumor excision on NK cytotoxic activity and formation of metastases of Bomirski melanoma in hamsters. Neoplasma 43:311-313 (1996).
Naftzger C, Takechi Y, Kohda H, Hara I, Vijayasaradhi S, Houghton AN: Immune response to a differentiation antigen induced by altered antigen: A study of tumor rejection and autoimmunity. Proc Natl Acad Sci USA 93:14809-14814 (1996).
Nairn RS, Kazianis S, McEntire BB, Dellacoletta L, Walter RB, Morizot DC: A CDKN2-like polymorphism in Xiphophorus LG V is associated with UV-B-induced melanoma formation in platyfish-swordtail hybrids. Proc Natl Acad Sci USA 93:13042-13047 (1996).
Nakahara H, Nomizu M, Akiyama SK, Yamada Y, Yeh YY, Chen WT: A mechanism for regulation of melanoma invasion - Ligation of a(6)b(1) integrin by laminin G peptides. J Biol Chem 271:27221-27224 (1996).
Nedoszytko B, Mrozek K, Roszkiewicz A, Kopacz A, Swierblewski M, Limon J: Clear cell sarcoma of tendons and aponeuroses with t(12;22) (q13; q12) diagnosed initially as malignant melanoma. Cancer Genet Cytogenet 91:37-39 (1996).
Neves EA, Mayall RC, Mayall ACDG, Serva MV: Lymphedema of the right arm after a melanoma operation and occlusion of the brachial vein. Lymphology 29:289-292 (1996).
Norose K, Yano A: Melanoma specific Th1 cytotoxic T lymphocyte lines in Vogt-Koyanagi-Harada disease. Br J Ophthalmol 80:1002-1008 (1996).
Okajima T, Onishi M, Hayama E, Motoji N, Momose Y, Shigematsu A: Cytolysis of B-16 melanoma tumor cells mediated by the myeloperoxidase and lactoperoxidase systems. Biol Chem 377:689-693 (1996).
Orlandi L, Zaffaroni N, Bearzatto A, Silvestrini R: Effect of melphalan and hyperthermia on p34(cdc2) kinase activity in human melanoma cells. Br J Cancer 74:1924-1928 (1996).
Otte HG, Pereira PL, Stadler R, Reinbold WD: Chemoembolization of a solitary liver metastasis from malignant melanoma. European J Dermatology 6:594-596 (1996).

Padmore RF, Lara JF, Ackerman DJ, Gales T, Sigurdson ER, Ehya H, Cooper HS, Patchefsky AS: Primary combined malignant melanoma and ductal carcinoma of the breast - A report of two cases. Cancer 78:2515-2525 (1996).

Perrot JL, Soler C, Tiffet O, Lanthier K, Boucheron S, Dubois F, Cambazard F: Detection of malignant melanoma metastasis with Tc-99m-sestamibi SPECT (single photon emission tomography) during follow-up of malignant melanoma in 17 patients. European J Dermatology 6:505-508 (1996).

Planting AST, Vanderburg MEL, Goey SH, Schellens JHM, Vecht C, Deboerdennert M, Stoter G, Verweij J: Phase II study of a short course of weekly high dose cisplatin combined with long-term oral etoposide in metastatic malignant melanoma. Eur J Cancer 32A:2026-2028 (1996).

Player MA, Barracchini KC, Simonis TB, Rivoltini L, Arienti F, Castelli C, Mazzocchi A, Belli F, Parmiani G, Marincola FM: Differences in frequency distribution of HLA-A2 subtypes between North American and Italian white melanoma patients: Relevance for epitope specific vaccination protocols. J Immunother 19:357-363 (1996).

Prieto VG, Mcnutt NS, Prioleau PG, Shea CR: Scaly erythematous lesion in a patient with extensive solar damage - Diagnosis: Malignant melanoma in situ, amelanotic type. Arch Dermatol 132:1239(1996).

Puerschel WC, Gawaz M, Worret WI, Ring J: Immunoreactivity of glycoprotein IIb is present in metastasized but not in non-metastasized primary malignant melanoma. Br J Dermatol 135:883-887 (1996).

QuintinColonna F, Devauchelle P, Fradelizi D, Mourot B, Faure T, Kourilsky P, Roth C, Mehtali M: Gene therapy of spontaneous canine melanoma and feline fibrosarcoma by intratumoral administration of histoincompatible cells expressing human interleukin-2. Gene Therapy 3:1104-1112 (1996).

Raber G, Mempel V, Jackisch C, Hundeiker M, Heinecke A, Kurzl R, Glaubitz M, Rompel R, Schneider HPG: Malignant melanoma of the vulva: Report of 89 patients. Cancer 78:2353-2358 (1996).

Ringborg U: Cutaneous malignant melanoma. Acta Oto-Laryngol 116:641-646 (1996).

Robbins PF, Kawakami Y: Human tumor antigens recognized by T cells. Curr Opin Immunol 8:628-636 (1996).

Sagebiel RW: Unusual variants of melanoma: Fact or fiction? Semin Oncol 23:703-708 (1996).

Saitoh K, Takahashi H, Yamamoto M, Kishi H, Parsons PG: Expression of metastasis suppressor gene product, nm23 protein, is not inversely correlated with the tumour progression in human malignant melanomas. Histopathology 29:497-505 (1996).

Salgaller ML, Marincola FM, Cormier JN, Rosenberg SA: Immunization against epitopes in the human melanoma antigen gp100 following patient immunization with synthetic peptides. Cancer Res 56:4749-4757 (1996).

Sans M, Llach J, Bordas JM, Andreu V, Campo A, Castells A, Mondelo F, Teres J, Rodes J: Metastatic malignant melanoma of the papilla of vater: An unusual case of obstructive cholestasis treated with biliary prostheses. Endoscopy 28:791-792 (1996).

Sato T: Active specific immunotherapy with hapten-modified autologous melanoma cell vaccine. Cancer Immunol Immunother 43:174-179 (1996).

Satyamoorthy K, Herlyn M: Melanoma: Molecular and cellular abnormalities. Encyclopedia of Cancer, Vol II 1042-1050:-1050 (1997).

Scheibenbogen C, Weyers I, Ruiter D, Willhauck M, Bittinger A, Keilholz U: Expression of gp100 in melanoma metastases resected before or after treatment with IFN a and IL-2. J Immunother 19:375-380 (1996).

Setiawan Y, Moore DE, Allen BJ: Selective uptake of boronated low-density lipoprotein in melanoma xenografts achieved by diet supplementation. Br J Cancer 74:1705-1708 (1996).

Seykora J, Elder D: Dysplastic nevi and other risk markers for melanoma. Semin Oncol 23:682-687 (1996).

Shamsher M, Montano X: Analysis of intron 4 of the p53 gene in human cutaneous melanoma. Gene 176:259-262 (1996).

Shields CL, Shields JA, Depotter P, Kheterpal S: Transpupillary thermotherapy in the management of choroidal melanoma. Ophthalmology 103:1642-1650 (1996).

Shields JA: Indications for trans-scleral local resection of uveal melanoma -Reply. Br J Ophthalmol 80:1029-1030 (1996).

Shields JA, Shields CL, Depotter P, Singh AD: Diagnosis and treatment of uveal melanoma. Semin Oncol 23:763-767 (1996).

Siders WM, Halloran PJ, Fenton RG: Transcriptional targeting of recombinant adenoviruses to human and murine melanoma cells. Cancer Res 56:5638-5646 (1996).
Singh AD, Wang MX, Donoso LA, Shields CL, Depotter P, Shields JA: Genetic aspects of uveal melanoma: A brief review. Semin Oncol 23:768-772 (1996).
Singh J, Sioulis C, Cullen JF: Conjunctival melanoma. Arch Ophthalmol 114:1528-1529 (1996).
Souberbielle BE, Knight BC, Morrow WJW, Darling D, Fraziano M, Marriott JB, Cookson S, Farzaneh F, Dalgleish AG: Comparison of IL-2- and IL-4-transfected B16-F10 cells with a novel oil-microemulsion adjuvant for B16-F10 whole cell tumour vaccine. Gene Therapy 3:853-858 (1996).
Spatz A, Ruiter D, Hardmeier T, Renard N, Wechsler J, Bailly C, Avril MF, Kwee H, Bastian BC, Hill C, Depotter C, Prade M: Melanoma in childhood: An EORTC-MCG multicenter study on the clinico-pathological aspects. Int J Cancer 68:317-324 (1996).
Stanojevicbakic N, Milosevic D, Vuckovicdekic L, Sasic M, Markovic L: Clinical and immunologic effects of T-activin therapy in early stage melanoma patients. Neoplasma 43:245-252 (1996).
Stremmel C, Schlag PM: Malign melanoma of oesophagus and anorectum. Dtsch Med Wochenschr 121:1573-1575 (1996).
Szala S, Missol E, Sochanik A, Strozyk M: The use of cationic liposomes DC-CHOL/DOPE and DDAB/DOPE for direct transfer of Escherichia coli cytosine deaminase gene into growing melanoma tumors. Gene Therapy 3:1026-1031 (1996).
Szaniawska B, Maternicka K, Kowalczyk D, Miloszewska J, Janik P: The pleiotropic effect of TPA on in vitro invasion/ migration of glioma and melanoma cell lines. Cancer Lett 107:205-209 (1996).
Tardif M, Coulombe J, Soulieres D, Rousseau AP, Pelletier G: Gangliosides in human uveal melanoma metastatic process. Int J Cancer 68:97-101 (1996).
Tsavaris N, Baxevanis C, Kosmidis P, Papamichael M: The prognostic significance of immune changes in patients with renal cancer, melanoma and colorectal cancer, treated with interferon a 2b. Cancer Immunol Immunother 43:94-102 (1996).
Utsumi H, Tano K, Mizuma N, Kobayashi T, Ichihashi M: Cellular effect of thermal neutron capture treatment using B-10(1)-para-boronophenylalanine: Lethal effect on melanoma cells with different degrees of X-ray sensitivity. J Radiat Res 37:193-198 (1996).
Valyakina T, Malakhov A, Malakhova N, Petrova E, Bykovskaya S, Revazova E, Nesmeyanov V: Glucosaminylmuramyldipeptide-induced changes in phenotype of melanoma cells result in their increased lysis by peripheral blood cells. Int J Oncol 9:885-891 (1996).
vandenOord JJ, Maes A, Stas M, Nuyts J, Battocchio S, Kasran A, Garmyn M, DeWever I, DeWolfPeeters C: CD40 is a prognostic marker in primary cutaneous malignant melanoma. Am J Pathol 149:1953-1961 (1996).
Vaniersel MLPS, Ploemen JPHTM, Struik I, Vanamersfoort C, Keyzer AE, Schefferlie JG, Vanbladeren PJ: Inhibition of glutathione S-transferase activity in human melanoma cells by a,b-unsaturated carbonyl derivatives. Effects of acrolein, cinnamaldehyde, citral, crotonaldehyde, curcumin, ethacrynic acid, and trans-2- hexenal. Chem Biol Interact 102:117-132 (1996).
Viale O, vanderBruggen P, Meuer E, Kunzmann R, Kohler H, Mertelsmann R, Boon T, Fisch P: Recognition by human V g 9/V d 2 T cells of melanoma cells upon fusion with Daudi cells. Immunogenetics 45:27-34 (1996).
Vrouenraets BC, Nieweg OE, Kroon BBR: Thirty-five years of isolated limb perfusion for melanoma: Indications and results. Br J Surg 83:1319-1328 (1996).
Wang YP, Rao U, Mascari R, Richards TJ, Panson AJ, Edington HD, ShipeSpotloe JM, Donnelly SS, Kirkwood JM, Becker D: Molecular analysis of melanoma precursor lesions. Cell Growth Differ 7:1733-1740 (1996).
Wei QY, Cheng L, Xie KP, Bucana CD, Dong ZY: Direct correlation between DNA repair capacity and metastatic potential of K-1735 murine melanoma cells. J Invest Dermatol 108:3-6 (1997).
Yarovoi SV, Mouawad R, Colberegarapin F, Soubrane C, Khayat D, Rixe O: In vitro sensitization, of the B16 murine melanoma cells to ganciclovir by different RNA and plasmid DNA constructions encoding HSVtk. Gene Therapy 3:913-918 (1996).

Yee C, Gilbert MJ, Riddell SR, Brichard VG, Fefer A, Thompson JA, Boon T, Greenberg PD: Isolation of tyrosinase-specific CD8(+) and CD4(+) T cell clones from the peripheral blood of melanoma patients following in vitro stimulation with recombinant vaccinia virus. J Immunol 157:4079-4086 (1996).

MSH, POMC, GROWTH FACTORS & RECEPTORS

Altomonte M, Montagner R, Fonsatti E, Colizzi F, Cattarossi I, Brasoveanu LI, Nicotra MR, Cattelan A, Natali PG, Maio M: Expression and structural features of endoglin (CD105), a transforming growth factor b 1 and b 3 binding protein, in human melanoma. Br J Cancer 74:1586-1591 (1996).

Barnhill RL, Xiao M, Graves D, Antoniades HN: Expression of platelet-derived growth factor (PDGF)-A, PDGF-B and the PDGF-a receptor, but not the PDGF-b receptor, in human malignant melanoma in vivo. Br J Dermatol 135:898-904 (1996).

Bubis M, Anis Y, Zisapel N: Enhancement by melatonin of GTP exchange and ADP ribosylation reactions. Mol Cell Endocrinol 123:139-148 (1996).

Carpenter AM, Carr JA: The effects of melanocortin peptides and corticosterone on habituation in the Great Plains toad, Bufo cognatus. Horm Behav 30:236-243 (1996).

Czubayko F, Schulte AM, Berchem GJ, Wellstein A: Melanoma angiogenesis and metastasis modulated by ribozyme targeting of the secreted growth factor pleiotrophin. Proc Natl Acad Sci USA 93:14753-14758 (1996).

Damato B, Paul J, Foulds WS: Risk factors for residual and recurrent and metastatic uveal melanoma after trans-scleral local resection - Reply. Br J Ophthalmol 80:1028-1029 (1996).

Darlington CL, Gilchrist DPD, Smith PF: Melanocortins and lesion-induced plasticity in the CNS: A review. Brain Res Rev 22:245-257 (1996).

Dotman CH, Cruijsen PMJM, Jenks BG, Roubos EW: Differential action of secreto-inhibitors on proopiomelanocortin biosynthesis in the intermediate pituitary of Xenopus laevis. Endocrinology 137:4551-4557 (1996).

GimenezMas JA, MartinezLanao D, SanzMoncasi P, DelAgua C: Cellular proliferation in radial vs vertical growth phases in malignant melanoma. An AgNOR computerized quantitation. Eur J Histochem 40:339(1996).

Hagan DM, Brooks AN: Dopaminergic regulation of adrenocorticotrophic hormone, a-melanocyte-stimulating hormone and cortisol secretion in the ovine fetus. J Endocrinol 151:439-447 (1996).

Halaban R: Growth factors and melanomas. Semin Oncol 23:673-681 (1996).

Helige C, Smolle J, FinkPuches R, HofmannWellenhof R, Hartmann E, Bar T, Schmidt RR, Tritthart HA: Differential effects of synthetic sphingosine derivatives on melanoma cell motility, growth, adhesion and invasion in vitro. Clin Exp Metastasis 14:477-489 (1996).

Huh SK, Lipton JM, Batjer HH: The protective effects of a-melanocyte stimulating hormone on canine brain stem ischemia. Neurosurgery 40:132-139 (1997).

Joosten EAJ, Verhaagh S, Martin D, Robe P, Franzen R, Hooiveld M, Doornbos R, Bar PR, Moonen G: a-MSH stimulates neurite outgrowth of neonatal rat corticospinal neurons in vitro. Brain Res 736:91-98 (1996).

Knigge KM, Baxtergrillo D, Speciale J, Wagner J: Melanotropic peptides in the mammalian brain: The melanin-concentrating hormone. Peptides 17:1063-1073 (1996).

Koppula SV, Robbins LS, Lu DS, Baack E, White CR, Swanson NA, Cone RD: Identification of common polymorphisms in the coding sequence of the human MSH receptor (MCIR) with possible biological effects. Hum Mutat 9:30-36 (1997).

Kvanta A, Steen B, Seregard S: Expression of vascular endothelial growth factor (VEGF) in retinoblastoma but not in posterior uveal melanoma. Exp Eye Res 63:511-518 (1996).

Manschot WA: Risk factors for residual and recurrent and metastatic uveal melanoma after trans-scleral local resection. Br J Ophthalmol 80:1028(1996).

Marklund L, Moller MJ, Sandberg K, Andersson L: A missense mutation in the gene for melanocyte-stimulating hormone receptor (MC1R) is associated with the chestnut coat color in horses. Mamm Genome 7:895-899 (1996).

Mayberg MR: The protective effects of a-melanocyte stimulating hormone on canine brain stem ischemia - Comment. Neurosurgery 40:140(1997).

Morre DJ, Sun E, Geilen C, Wu LY, Decabo R, Krasagakis K, Orfanos CE, Morre DM: Capsaicin inhibits plasma membrane NADH oxidase and growth of human and mouse melanoma lines. Eur J Cancer 32A:1995-2003 (1996).

Oka T, Oka K, Hosoi M, Hori T: Inhibition of peripheral interleukin-1 b-induced hyperalgesia by the intracerebroventricular administration of diclofenac and a-melanocyte-stimulating hormone. Brain Res 736:237-242 (1996).

Piepmeier JM: Beneficial effects of the melanocortin a-melanocyte-stimulating hormone on clinical and neurophysiological recovery after experimental spinal cord injury - Comment. Neurosurgery 40:131(1997).

Quillan JM, Sadee W: Structure-based search for peptide ligands that cross- react with melanocortin receptors. Pharmaceut Res 13:1624-1630 (1996).

Rossi M, Choi SJ, OShea D, Miyoshi T, Ghatei MA, Bloom SR: Melanin-concentrating hormone acutely stimulates feeding, but chronic administration has no effect on body weight. Endocrinology 138:351-355 (1997).

Rungta D, Corn TD, Fuller BB: Regulation of tyrosinase mRNA cells by a-melanocyte-stimulating hormone. J Invest Dermatol 107:689-693 (1996).

Schioth HB, Muceniece R, Wikberg JES, Szardenings M: Alternative translation initiation codon for the human melanocortin MC(3) receptor does not affect the ligand binding. Eur J Pharmacol 314:381-384 (1996).

Sharma SD, Jiang JW, Hadley ME, Bentley DL, Hruby VJ: Melanotropic peptide-conjugated beads for microscopic visualization and characterization of melanoma melanotropin receptors. Proc Natl Acad Sci USA 93:13715-13720 (1996).

Tollemer H, Leprince J, Bailhache T, Chauveau I, Vandesande F, Tonon MC, Jego P, Vaudry H: Characterization of a novel a-amidated decapeptide derived from proopiomelanocortin-A in the trout pituitary. Endocrinology 138:128-137 (1997).

Toumaniantz G, Bittencourt JC, Nahon JL: The rat melanin-concentrating hormone gene encodes an additional putative protein in a different reading frame. Endocrinology 137:4518-4521 (1996).

Valverde P, Healy E, Sikkink S, Haldane F, Thody AJ, Carothers A, Jackson IJ, Rees JL: The Asp84Glu variant of the melanocortin 1 receptor (MC1R) is associated with melanoma. Hum Mol Genet 5:1663-1666 (1996).

vandeMeent HV, Hamers FPT, Lankhorst AJ, Joosten EAJ, Gispen WH: Beneficial effects of the melanocortin a-melanocyte-stimulating hormone on clinical and neurophysiological recovery after experimental spinal cord injury. Neurosurgery 40:122-130 (1997).

Vanstrien FJC, Roubos EW, Vaudry H, Jenks BG: Acetylcholine autoexcites the release of proopiomelanocortin-derived peptides from melanotrope cells of Xenopus laevis via an M(1) muscarinic receptor. Endocrinology 137:4298-4307 (1996).

Wang J, Wei SJ, Yang WK, Lin WC, Yang DM, Whangpeng J, Ting CC: In vitro and in vivo correlation of the effect of granulocytemacrophage colony-stimulating factor gene transfer on the tumorigenicity and immunogenicity of B16 melanoma. Int J Oncol 9:1267-1276 (1996).

Weir BKA: The protective effects of a-melanocyte stimulating hormone on canine brain stem ischemia - Comment. Neurosurgery 40:140(1997).

Wojtowiczpraga S, Verma UN, Wakefield L, Esteban JM, Hartmann D, Mazumder A: Modulation of B16 melanoma growth and metastasis by anti-transforming growth factor b antibody and interleukin-2 (vol 3, pg 169, 1996). J Immunother 19:386(1996).

Yoshida H, Hayashi S, Shultz LD, Yamamura K, Nishikawa S, Kunisada T: Neural and skin cell-specific expression pattern conferred by steel factor regulatory sequence in transgenic mice. Develop Dynam 207:222-232 (1996).

Young W: Beneficial effects of the melanocortin a-melanocyte-stimulating hormone on clinical and neurophysiological recovery after experimental spinal cord injury - Comment. Neurosurgery 40:130-131 (1997).

Young W: The protective effects of a-melanocyte stimulating hormone on canine brain stem ischemia - Comment. Neurosurgery 40:139-140 (1997).

TYROSINASE, TYROSINASE RELATED PROTEINS & MOLECULAR BIOLOGY

Adeyoju O, Iwuoha EI, Smyth MR, Leech D: High-performance liquid chromatographic determination of phenols using a tyrosinase-based amperometric biosensor detection system. Analyst 121:1885-1889 (1996).

Androlewicz MJ: An N-glycosylated tyrosinase epitope associates with newly synthesized MHC class I molecules in melanoma cells. Hum Immunol 51:81-88 (1996).

Bazhan NM, Yakovleva TV, Makarova EN: Reproduction in the water vole (Arvicola terrestris), polymorphic for the agouti locus. Genetika 32:1125-1130 (1996).

Bernex F, Desepulveda P, Kress C, Elbaz C, Delouis C, Panthier JJ: Spatial and temporal patterns of c-kit-expressing cells in W-lacZ/+ and W-lacZ/W-lacZ mouse embryos. Development 122:3023-3033 (1996).

Bjork P, Aman P, Hindemith A, Odh G, Jacobsson L, Rosengren E, Rorsman H: A new enzyme activity in human blood cells and isolation of the responsible protein (D-dopachrome tautomerase) from erythrocytes. Eur J Haematol 57:254-256 (1996).

Burger J, Kunze J, Sperling K, Reis A: Phenotypic differences in Angelman syndrome patients: Imprinting mutations show less frequently microcephaly and hypopigmentation than deletions. Am J Med Genet 66:221-226 (1996).

Deng Q, Dong SJ: Amperometric biosensor for tyrosinase inhibitors in a pure organic phase. Analyst 121:1979-1982 (1996).

Fleischman RA, Gallardo T, Mi XF: Mutations in the ligand-binding domain of the kit receptor: An uncommon site in human piebaldism. J Invest Dermatol 107:703-706 (1996).

Haffter P, Odenthal J, Mullins MC, Lin S, Farrell MJ, Vogelsang E, Haas F, Brand M, vanEeden FJM, FurutaniSeiki M, Granato M, Hammerschmidt M, Heisenberg CP, Jiang YJ, Kane DA, Kelsh RN, Hopkins N, NussleinVolhard C: Mutations affecting pigmentation and shape of the adult zebrafish. Dev Genes Evol 206:260-276 (1996).

Ikeda K, Masujima T, Sugiyama M: Effects of methionine and Cu2+ on the expression of tyrosinase activity in Streptomyces castaneoglobisporus. J Biochem Tokyo 120:1141-1145 (1996).

Kheterpal S, Shileds JA, Shields CL, Depotter P, Ehya H, Eng KY: Choroidal melanoma in an African-American albino. Am J Ophthalmol 122:901-903 (1996).

Lefur N, Kelsall SR, Mintz B: Base substitution at different alternative splice donor sites of the tyrosinase gene in murine albinism. Genomics 37:245-248 (1996).

Miranda M, Zarivi O, Bonfigli A, Porretta R, Aimola P, Pacioni G, Ragnelli AM: White truffles, like black ones, are tyrosinase positive. Plant Sci 120:29-36 (1996).

Montoliu L, Umland T, Schutz G: A locus control region at -12 kb of the tyrosinase gene. EMBO J 15:6026-6034 (1996).

Naash MI, Ripps H, Li SH, Goto Y, Peachey NS: Polygenic disease and retinitis pigmentosa: Albinism exacerbates photoreceptor degeneration induced by the expression of a mutant opsin in transgenic mice. J Neurosci 16:7853-7858 (1996).

Newton JM, Orlow SJ, Barsh GS: Isolation and characterization of a mouse homolog of the X-linked ocular albinism (OA1) gene. Genomics 37:219-225 (1996).

Nobukuni Y, Watanabe A, Takeda K, Skarka H, Tachibana M: Analyses of loss-of-function mutations of the MITF gene suggest that haploinsufficiency is a cause of Waardenburg syndrome type 2A. Am J Hum Genet 59:76-83 (1996).

Park KC, Park SK, Lee YS, Youn SW, Park BS, Kim KH, Lee ST: Mutations of the tyrosinase gene in three Korean patients with type I oculocutaneous albinism. Jpn J Hum Genet 41:299-305 (1996).

Ramaiah A: Lag kinetics of tyrosinase: Its physiological implications. Indian J Biochem Biophys 33:349-356 (1996).

Riva P, Larizza L: A novel potentially diagnostic polymorphism (4894 A/C) in exon 10 of the human c-kit proto-oncogene. Mol Cell Probe 10:387-388 (1996).

Roth VL, Dawson WD: Coat color genetics of Peromyscus .5. California blonde, a new recessive mutation in the deer mouse. J Hered 87:403-406 (1996).

Rubin EM, Barsh GS: Biological insights through genomics: Mouse to man. J Clin Invest 98:S7-S11 (1996).

Shioda T, Fenner MH, Isselbacher KJ: msg1, A novel melanocyte-specific gene, encodes a nuclear protein and is associated with pigmentation. Proc Natl Acad Sci USA 93:12298-12303 (1996).

Skipper JCA, Kittlesen DJ, Hendrickson RC, Deacon DD, Harthun NL, Wagner SN, Hunt DF, Engelhard VH, Slingluff CL: Shaved epitopes for HLA-A3-restricted melanoma-reactive human CTL include a naturally processed epitope from Pmel- 17/gp100. J Immunol 157:5027-5033 (1996).

Steingrimsson E, Nii A, Fisher DE, FerreDAmare AR, McCormick RJ, Russell LB, Burley SK, Ward JM, Jenkins NA, Copeland NG: The semidominant Mi(b) mutation identifies a role for the HLH domain in DNA binding in addition to its role in protein dimerization. EMBO J 15:6280-6289 (1996).

Stokes AH, Brown BG, Lee CK, Doolittle DJ, Vrana KE: Tyrosinase enhances the covalent modification of DNA by dopamine. Mol Brain Res 42:167-170 (1996).

Tilgmann C, Ulmanen I: Purification methods of mammalian catechol-O- methyltransferases. J Chromatogr B-Bio Med Appl 684:147-161 (1996).

Wang RF, Appella E, Kawakami Y, Kang XQ, Rosenberg SA: Identification of TRP-2 as a human tumor antigen recognized by cytotoxic T lymphocytes. J Exp Med 184:2207-2216 (1996).

MISCELLANEOUS

Anding K, Kohler G, Bohm N, Peterson KG, Schollmeyer P, Neumann HPH: Primary pigmented nodular adrenocortical dysplasia. A rare cause of Cushing's syndrome. Dtsch Med Wochenschr 121:1321-1324 (1996).

Augustin C, Lepavec A, Venet E, Nakazawa K, Collombel C, Damour O: From monolayered culture to pigmented skin equivalent: Complexification of the skin cell culture and contributions in pharmaco-toxicology. Cell Biol Toxicol 12:384(1996).

Beharcohen FF, Heydolph S, Faure V, Droylefaix MT, Courtois Y, Goureau O: Peroxynitrite cytotoxicity on bovine retinal pigmented epithelial cells in culture. Biochem Biophys Res Commun 226:842-849 (1996).

ElKassas H, Kirkwood JM: Adjuvant application of interferons. Semin Oncol 23:737-743 (1996).

Gorman MJ, Cornel AJ, Collins FH, Paskewitz SM: A shared genetic mechanism for melanotic encapsulation of CM-Sephadex beads and a malaria parasite, Plasmodium cynomolgiB, in the mosquito, Anopheles gambiae. Exp Parasitol 84:380-386 (1996).

Howell RE, Cohen MM: Pathological case of the month - Congenital muscular torticollis - Melanotic neuroectodermal tumor of infancy. Arch Pediatr Adolesc Med 150:1103-1104 (1996).

Knoell KA, Milgraum SS, Kutenplon M: Q-switched ruby laser treatment of minocycline-induced cutaneous hyperpigmentation. Arch Dermatol 132:1251-1253 (1996).

Lee AK: Dopamine (D-2) receptor regulation of intracellular calcium and membrane capacitance changes in rat melanotrophs. J Physiol-London 495:627-640 (1996).

Money NP, Howard RJ: Confirmation of a link between fungal pigmentation, turgor pressure, and pathogenicity using a new method of turgor measurement. Fungal Genet Biol 20:217-227 (1996).

Pope JE, Shum DT, Gotschalk R, Stevens A, Mcmanus R: Increased pigmentation in scleroderma. J Rheumatol 23:1912-1916 (1996).

Somach SC, Taira JW, Pitha JV, Everett MA: Pigmented lesions in actinically damaged skin: Histopathologic comparison of biopsy and excisional specimens. Arch Dermatol 132:1297-1302 (1996).

Steel DHW, Mahomed I, Sheffield E: Unilateral choroidal melanoma with bilateral retinal vasculitis. Br J Ophthalmol 80:850-851 (1996).

Sterenborg HJCM, Saarnak AE, Frank R, Motamedi M: Evaluation of spectral correction techniques for fluorescence measurements on pigmented lesions in vivo. J Photochem Photobiol B-Biol 35:159-165 (1996).

Stevens G, Cockerell CJ: Avoiding sampling error in the biopsy of pigmented lesions. Arch Dermatol 132:1380-1382 (1996).

Stratakis CA, Jenkins RB, Pras E, Mitsiadis CS, Raff SB, Stalboerger PG, Tsigos C, Carney JA, Chrousos GP: Cytogenetic and microsatellite alterations in tumors from patients with the syndrome of myxomas, spotty skin pigmentation, and endocrine overactivity (Carney complex). J Clin Endocrinol Metab 81:3607-3614 (1996).

Taylor SA, Burt E, Hammond G, Relyea K: Female mosquitofish (Gambusia affinis holbrooki) prefer normally pigmented males to melanistic males. J Comp Psychol 110:260-266 (1996).
Teraki E, Tajima S, Manaka I, Kawashima M, Miyagishi M, Imokawa G: Role of endothelin-1 in hyperpigmentation in seborrhoeic keratosis. Br J Dermatol 135:918-923 (1996).
Tremblin G, Robert JM: Photosynthesis of Haslea ostrearia in relation with its blue pigmentation. C R Acad Sci [III] 319:939-944 (1996).

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