Introduction . . .

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

The Publications Committee wants to make collaboration between members of the Society as easy as possible and toward that goal we are encouraging the use of E-mail and other forms of electronic communications. We encourage everyone who has an E-mail address to forward it to the Publications Committee. The Publications Committee is willing to help any member of the PASPCR get you in touch with the individuals who can set up your E-mail account and to some extent will help you get started.

The PASPCR has a Gopher server that can be found from your home Gopher under "International Organizations" as “PanAmerican Society for Pigment Cell Research (PASPCR)”. Here you have access to past PASPCR Newsletters, the current ByLaws and membership list. We are currently working with the IFPCS to develop a list of resources available to PASPCR members. This list will include cell lines, antibodies, coat color mutants and other items of interest to pigment researchers. If you have any other ideas for items to be placed on Gopher, please contact someone on the Newsletter Publishing Committee.

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Calendar of Events:

Mar 18 - 22, 1995 Annual Meeting of the American Association for Cancer Research, to be held in Toronto, Canada (contact: AACR National Office, FAX: 215/440-9313)

May 10 - 12, 1995 Melanoma ’95, to be held in Brighton, United Kingdom (contact: Dr N Kirkham, Coordinators Office, 14A Ship Street, Brighton BN1 1AD, East Sussex, United Kingdom, FAX: 44/273-323882)

May 24 - 28, 1995 56th Annual Meeting of the Society for Investigative Dermatology, to be held in Chicago, Illinois (contact: SID, Suite 500A, 11001 Cedar Ave, Cleveland, OH 44106, FAX: 216/844-6810)

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

Jul 11 - 15, 1995 44th Annual Symp on the Biology of Skin, to be held in Snowmass Village, CO (contact: Cutaneous Biology Foundation, 4200 E 9th Ave, UCHSC Box B 144, Denver, CO 80262; FAX: 303/270-8272)

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

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)
Welcome to New Members
by Richard A King

We welcome the following new members to the PASPCR:

Gregory J. Kramer
Shosuke Ito
Masayoshi Tachibana
George L. Wolff

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

Corporate Sponsors
by Richard A King

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.

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1994 PASPCR Council Election Results
by Richard A King

The following members were elected to 3 year terms as Council Members beginning January 1, 1995.

Alan N. Houghton
William S. Oetting
Walter C. Quevedo, Jr.

1995 PASPCR VI\textsuperscript{th} Annual Meeting Site:
by Sally Frost-Mason

Update - Sixth Meeting of the PASPCR, June 25-28, 1995, Kansas City, MO

Plans continue to evolve for the Sixth Meeting of the PASPCR. First announcements were mailed out in October, and response thus far has been strong, with many requests for additional information having been received by the planning committee. If you did not receive a first announcement and would like more information about these meetings please contact Sally Frost-Mason at (913)864-3661, FAX (913)864-5331, or email: sfm@clasmain.clas.ukans.edu.

The scientific program for these meetings will be highlighted by keynote talks by Roger Cone, Garth Nicholson, and Shirley Tilghman. Symposia complementing each of the research areas addressed by the keynote speakers are being organized, and minisymposia on a variety of subjects are also planned. There will be posters with ample time for display and discussion and many opportunities for informal interactions at these meetings.
The meetings will be held at the Ritz-Carlton Hotel on the Country Club Plaza in Kansas City, Missouri. This elegant hotel is within walking distance of many fine restaurants, shops, and museums, so participants should be encouraged to bring family and friends to enjoy the festivities.

Planned activities will begin Sunday evening with a poolside reception at the Ritz. On Monday evening come prepared to join the fun as we will be heading out to the Benjamin Ranch on the outskirts of KC. There we will be treated to a meal including barbecue chicken, pork ribs, and beef brisket with a selection of KC's finest barbecue sauces. After dinner we can all unwind to country western and contemporary music and dancing and, for those who are not experienced at this, a dance instructor will be on hand to help us all line dance. Not a dancer? Not to worry! You can try your hand at steer roping on the steel horse or the cow chip toss (using the "real thing"). A gypsy fortune teller will be on hand to predict you chances on that next grant renewal! The bar will be open all evening. The atmosphere at the ranch is relaxed and casual, and if you own cowboy boots don't forget to bring them along.

Tuesday evening you may wish to go on a Kansas City Jazz Pub Crawl and experience jazz at its finest at three of the local establishments famous for their live entertainment. Or perhaps you would like to spend an evening on a riverboat gambling. Or maybe at the end of two long days you'll choose a relaxing evening in one of Kansas City's fine restaurants and bars located on the Plaza near the Ritz.

Whatever your preference, we hope you will join us in Kansas City in June. The science should be superb and the activities are bound to be fun!

XVIth IPCC (International Pigment Cell Conference) by Roger Bowers, Frank Meyskens

The XVIth International Pigment Cell Conference will be held from October 29th to November 3rd, 1996 at the Disneyland Hotel in Anaheim, California. Frank Meyskens is the Organizer of this meeting with Roger Bowers and Alistair Cochran serving as co-chairs of the Organizing Committee. More information regarding this meeting (and its interesting venue) will be forthcoming in future Newsletters and in separate mailings. Dr. Meyskens has asked that the following announcements be included in our Newsletter.

Satellite Conferences: No satellite conferences will be supported by the local organizing committee that are held within the time frame of the XVIth International Pigment Cell Conference, Tuesday, October 29, 1996; 6:00 pm to Sunday, November 3, 1996; 8:00 am. There are a wide number of venues possible to hold small or large satellite conferences either before or after the main pigment cell meeting. Our Memorial/UCI Educational Foundation will be happy to work with you in planning, for a small fee, and we request that we be notified of the intent of any satellite conference no later than June 1, 1995. If we are notified later than this date, accommodations and planning availability cannot be guaranteed.

Competitive Stipend for Travel Support: The Organizing Committee will provide funds in a competitive manner for graduate students, post-doctoral fellows and those within five years of formal academic appointment. The number of stipends will depend on the availability of funds and further information will become available during the second and subsequent informational mailings.

1997 VIIth PASPCR Meeting Site by Vincent Hearing / Richard King

The VIIth Annual Meeting of the PASPCR will be held in Providence, RI in June, 1997 with Walter C. Quevedo, Jr. as the Organizer, with Harold Swartz as the co-chair of the Organizing Committee. Further information will be forthcoming for that meeting as it becomes available.
PASPCR Secretary / Treasurer’s Report : by Richard A King

Following is a synopsis of the PASPCR Council Meeting held by teleconference on October 27, 1994 . . .

Hearing opened the meeting and a quorum was declared present. The minutes of the June 26, 1994, Council meeting were accepted. King gave the treasurer’s report. There were 137 current members of the PASPCR including 111 renewal and 26 new memberships for 1994. The travel award stipends for the 1994 meeting totaled $4,414. The total amount of travel stipends over the period 1989 - 1994 is $17,489.

Frost-Mason gave the Nominating Committee report. The 1996 elections will include the offices of President and Secretary-Treasurer as well as 3 Council members. Townsend gave the Publication Committee report. He stated that there were four responses to the postcards that were mailed to the members requesting information for the last newsletter, and the total cost for this was $30. Pawelek gave the Membership Committee report. A draft of a PASPCR brochure would be available soon. Frost-Mason for the Awards Committee invited all members of the Council to submit nominations for 1996 Honorary Membership and Career Achievement Award.

Frost-Mason reviewed the preparations for the 1995 PASPCR meeting to be held Kansas City. The first announcement has been distributed to the PASPCR, ESPCR, JSPCR and other individuals and societies. Further information will be available in the December newsletter. Bowers reviewed the preparation for the 1996 IPCC meeting to be held in Anaheim. The planning committee will meet in January, 1995, and arrangements will be made to include the representatives from the various regional societies. R. Boissy and S. Orlow would be the PASPCR representatives to the 1996 IPCC Program Committee and S. Frost-Mason and R. King would be the PASPCR representative to the 1996 IPCC International Planning Committee. The scientific agenda will include such topics as molecular biology; photo biology; melanin, society and economy; melanoma, melanin and pigmentation diseases and comparative biology. Financial support is being developed for this meeting. Hearing noted that W. Quevedo and H. Swartz have expressed interest in hosting the 1997 meeting in Providence, Rhode Island, and D. Norris has suggested that he would host the meeting in Denver in 1998.

Hearing presented a proposed Rule & Regulation for guidelines for PASPCR sponsorship of outside scientific meetings: 1) that the meeting under consideration is in full accordance with the aims and scope of the PASPCR and is intended to foster scientific goals; 2) that the meeting is a bona fide scientific meeting with an independent program committee; 3) that the meeting will be held at a satisfactory venue and the date that does not compete with PASPCR sponsored events, and 4) that the meeting organizers have sufficient financial resources to host the meeting. This was unanimously accepted.

A Rule & Regulation for Emeritus Membership was proposed: (1) A member is eligible for Emeritus Membership if he/she is fully retired and was an active regular member of the PASPCR for the proceeding 5 years. (2) the application must be submitted to and approved by the council. (3) the Emeritus Members will have full voting rights and will be eligible for elected office and the various appropriate PASPCR awards and (4) the Emeritus members will pay annual dues that represent 25% of the regular annual dues. This was unanimously accepted.

An amendment to Rule & Regulation #4 that would detail the mechanism for selecting the Young Investigator Awards was proposed: (1) a notice of the Young Investigator Awards be included in the call for abstracts; (2) the nomination for an award will be made at the time of abstract submission; (3) the nominees must present their abstract at the annual meeting to be eligible for an award; (4) the selection of the award will be made by anonymous committee appointed by the secretary-treasurer; and (5) that the Young Investigator Award will be announced at the membership business meeting of the PASPCR. There was concern that this amendment would limit the possibility of giving an award to a young investigator who had not applied for it but had given an outstanding presentation at the annual meeting. There was also concern about the mechanism that would notify all potential candidates of the Young Investigator Award. Frost-Mason suggested the Rule & Regulation could be approved on a provisional basis for a one year trial, and this was unanimously accepted.

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

9th Annual Meeting of the Japanese Society for Pigment Cell Research
Tokyo, Japan December 9-10, 1994

The 9th JSPCR meeting was held at the Nihon Kaiun Club in Tokyo. The meeting was organized by the Department of Dermatology, Nihon University School of Medicine with Prof. T. Morishima as Chairman and Dr. Z. Yamaguchi as Secretary. The meeting was filled with so much hospitality, and all participants enjoyed not only an exciting meeting but also a gorgeous buffet. The meeting was composed by one special lecture given by Prof. K. Jimbow, three seminars and 38 papers.

Special Lecture “Melanogenesis as a cascade of events”

Dr. K. Jimbow discussed the interaction of melanosomal glycoproteins such as tyrosinase, TRP1, TRP2 and lysosome-associated membrane protein-1 (LAMP1) in the melanogenic process. He mentioned that LAMP1 exists in the membrane of melanosomes and lysosomes. UV exposure upregulates tyrosinase, TRP1, and LAMP1. Transfection of either tyrosinase or TRP1 does not increase the expression of LAMP1 in fibroblasts, whereas cotransfection of both tyrosinase and TRP1 increases the expression of LAMP1 in fibroblasts. He also mentioned that transfection of tyrosinase only in COS cells caused the vacuolation in the cells, but cotransfection of tyrosinase and TRP1 causes melanin production without vacuolation. Therefore he mentioned the possibility that TRP1 may be involved in the prevention of programmed cell death of melanocytes during melanogenesis through upregulation of LAMP1. He also mentioned the possibility that calnexin was a chaperon necessary for the proper folding of melanosomal glycoproteins.

Research Seminar ‘Recent advances in melanin research made by gene technology”

Dr. S. Shibahara summarized the recent findings concerning the possible involvement of two novel proteins in the pigment cell specific transcription of the tyrosinase family genes: neurofibromin, a gene product responsible for neurofibromatosis type I (NF1) and a human homologue of the mouse gene associated with microphthalmia. He mentioned that NF1 is a tumor suppressor gene located on chromosome 17. He checked the effect of NF1 gene on MeWo cells which lack the NF1 gene. The results were that the NF1 gene activates the tyrosinase gene promoter. Then he mentioned that microphthalmia-associated transcription factor (MITF) increases the expression of the tyrosinase gene, and MITF is a key regulator for melanocyte-specific transcription of the tyrosinase gene. After his lecture, there was one interesting question which asked about mutations of the NF1 gene that cause NF1 associated with cafe au lait spots where melanin is increased. If NF1 gene activates the tyrosinase gene promoter, patients with NF1 should have depigmented spots on the skin. Dr. Shibahara answered that it was a really interesting question but to answer it, further study will be necessary.

Melanin

The meaning of 5,6-dihydroxyindole-2-carboxylic acid (DHICA) derived melanin has been in focus. The meaning has been estimated to concern the color of melanin or quality of melanin. Dr. H. Ozeki in Prof. S. Ito’s group made a comparative study of melanins in various color mutants of mice by spectrophotometric and HPLC analysis. He studied the various coat color mutants of congenic mice: black, agouti, viable yellow, brown, albino, dilute black and pink-eyed black by the method of HPLC analysis using pyrrole-2,3,5-tricarboxylic acid (PTCA) and aminohydroxyphenylalanine (AHP) and various spectrophotometric assays. At first he compared the amounts of total melanin analyzed by HPLC method and spectrophotometric assay. The results showed that: 1) total melanin content analyzed by spectrophotometric assay correlated well with the melanin content calculated from PTCA and AHP methods; 2) viable yellow pigment was much more soluble in strong alkali than black eumelanin; 3) brown eumelanin was much more soluble in strong alkali than black eumelanin; 4) comparison of PTCA/total eumelanin ratios indicates the percentage content of DHICA-derived melanin in eumelanin, and the percentages are similar between black eumelanin and brown eumelanin, suggesting that the alkali solubility of brown eumelanin is not due to differences in the carboxy content but are due to differences in the molecular weight, i.e. the degree of polymerization of melanin. This result is further supported by the fact that the total eumelanin/total eumelanin + pheomelanin ratio was about half that of black melanin.

Melanin metabolism

Dr. K. Wakamatsu in Prof. Ito’s group studied which is the better marker of melanin-related metabolism, 5-S-cysteinyldOPA (5-S-CD) or 6-hydroxy-5-methoxyindole-2-carboxylic acid (6H5MI2C)
as markers of melanoma progression. At first he checked the seasonal variation of serum 5-S-CD and 6H5MI2C values in 10 healthy Japanese every two months for two years. The results showed that 5-S-CD levels were higher in early summer and lower in early winter. However, the difference in the average levels (4 nmol/L in the two markers) was about two fold and no individual values exceeded the upper limit of the normal value, 10 nmol/L. A significant correlation (p<0.02) was observed between 5-S-CD and solar irradiation, and 6H5MI2C levels showed smaller variation as compared with 5-S-CD levels. No correlation was observed between 6H5MI2C levels and solar radiation. They also checked the stability of those two markers in whole blood and serum samples. 6H5MI2C was much more unstable than 5-S-CD in whole blood and serum at room temperature. They also found that serum 5-S-CD levels elevated significantly earlier and reflected melanoma progression better than 6H5MI2C and the clinical detection. On the other hand, serum 6H5MI2C did not increase until the final stage in most patients. Dr. Jimbow commented that 6H5MI2C is a better marker than 5-S-CD for melanoma patients in Canada, and 5-S-CD does not reflect melanogenesis since the level of 5-S-CD in patients with albinism showed normal levels.

Tyrosinase Related Proteins

Dr. K. Urabe in Dr. Hearing’s group cloned a cDNA encoding TRP2 from murine melanocytes using RT-PCR and studied its catalytic activity by transfection technique. Furthermore he generated an expression vector that contains the slaty mutation and examined the effects of this on the catalytic function of TRP2. He checked the effect on transfected cells and confirmed that the ability of murine TRP2 to function as DOPAchrome tautomerase and to demonstrate that the slaty mutation dramatically decreases that enzyme function. He also commented that the reason why slaty mice do not show black color which reflects DHICA-derived melanin is that DHICA may be necessary for the polymerization of melanin.

Dr. H. Kondoh in Dr. Mishima’s group checked the effect of transfection of TRP2 on human melanotic melanoma Ihara cells having low DOPAchrome tautomerase activity. He obtained melanoma cells which possess various degrees of DOPAchrome tautomerase activity, and compared the activity of DOPAchrome tautomerase, tyrosinase and melanogenesis among obtained transformants and parental cells. The results showed that the clones with higher DOPAchrome tautomerase/tyrosinase activity ratio contained higher amounts of DHICA-melanin, and increased melanogenesis was observed in clones having high DOPAchrome tautomerase activity with the same level of tyrosinase activity. From these findings he assumes that the modulation of eumelanin production is mainly performed in the DHICA-pathway which is regulated in turn by DOPAchrome tautomerase activity within pigment cells which possess the same level of tyrosinase activity.

Melanogenic Inhibitor

Dr. K. Kameyama reported the effect of oil-soluble licorice extract (P-TH) which contains 20% grablidin on melanogenesis. P-TH is a mixture of flavonoids and unknown substances. 10^-3 mg/ml or 10^-4 mg/ml licorice extract suppressed melanin formation 20% or 69% respectively by purified tyrosinase. P-TH also suppressed melanin formation on cultured human melanoma Ihara cells, mouse B16 F10 cells and transformed murine melanocyte melan-a cells. Unexpectedly P-TH increased TRP1 activity (DHICA oxidase) approximately 20% in B16 F10 cells, but decreased approximately 70% of both TRP2 activity and spontaneous conversion of DOPAchrome to 5,6-dihydroxyindole on Ihara cells. To know the effect of P-TH on those melanogenic enzymes, radioligand precipitation was performed. 10^-2 mg/ml P-TH suppressed the synthesis rates of highly glycosylated melanosomal glycoproteins tyrosinase, TRP1 and TRP2, but did not suppress the melanosomal matrix Pmel17/silver locus protein. Furthermore the band of tyrosinase, TRP1 and TRP2 on immunoprecipitation was shifted to lower molecular weight. These findings suggest that P-TH suppressed the synthesis rate of those tyrosinase gene family members by inhibition of glycosylation. P-TH was effective on 20 out of 36 patients with hyperpigmented diseases such as chloasma. These findings clearly indicated that P-TH application can be useful for patients with hyperpigmented diseases, and the reason why P-TH suppressed melanogenesis at several steps is that P-TH is a mixture of flavonoids.

Cytokines

Dr. Y. Yada of Dr. Imokawa’s group studied the effect of fibroblast-derived factors on the proliferation of human melanocytes (HMC). DNA synthesis of HMC was significantly stimulated by human fibroblast (HFB) conditioned medium. The stimulatory effect was significantly higher in the conditioned medium from old age-derived fibroblasts (OFB) than that from young age fibroblasts (YFB). Analysis of released factors in the conditioned medium revealed that stem cell factor (SCF) significantly increased in OFB conditioned medium as compared to YFB. In contrast, basic fibroblast growth factor (bFGF) did not differ. In addition, the secretion of hepatocyte growth factor (HGF) was
markedly increased when IL-1 was added to the culture medium. The DNA synthesis rates of HMC were decreased when anti-HGF, SCF and bFGF antibodies were added to the conditioned medium. Therefore they assume that SCF and HGF may be involved in cutaneous pigmentation during the aging process. There was a question regarding whether the effect of those cytokines on HMC DNA synthesis increased cell number or melanin production. The answer is that the number of HMC was much increased and the melanin production was slightly decreased.

Members in the News

Kowichi Jimbow, presented the keynote lecture at the 9th Annual Meeting of the JSPCR (cf Meeting Report above); the title of his lecture was “Melanogenesis as a Cascade of Events”

Yutaka Mishima, his family and colleagues, survived the recent devastating earthquake that hit Kobe so hard. All the coworkers at Prof. Mishima’s Institute are safe, as are our colleagues at the Dermatology Department at Kobe University, although there has been serious damage to their homes and research facilities. At the suggestion of Drs. King and Quevedo, we have offered the assistance of the PASPCR to help them resupply scientific resources that may have been lost and further information will be forthcoming in a future Newsletter.

Positions - Wanted and Available:

Opportunity available to do graduate studies towards a doctoral degree at the University of Cincinnati College of Medicine. Graduate program is through the Department of Cell Biology, Neurobiology, & Anatomy. Dissertation project would focus on molecular biology of the melanocyte physiology and pigmentary diseases. For information contact: Raymond E. Boissy, Ph.D., Department of Dermatology, University of Cincinnati College of Medicine, 231 Bethesda Avenue ML-592, Cincinnati, Ohio 45267-0592; (513)558-6242 [TEL]; (513)558-0198 [FAX]; boissyre@ucbeh.san.uc.edu [eMAIL].

INTERPIG Update:

The INTERPIG database is underway! Entries have been drifting in from members of the ESPCR, JSPCR and PASPCR listing their various reagents, cDNAs, antibodies, cell lines and other research materials that are useful to pigment cell researchers. A copy of the database entry sheet is enclosed again in this Newsletter and please take a moment to fill out that form with any items that you have developed over the past years that would be useful to other researchers in the field. Later this year we will be providing printouts of those items entered - the usefulness of this database depends entirely upon the willingness of all of us to take the time to input our data into the database. Kudos to Lynn Lamoreux for being the first from our Society to submit a data entry form, and to Kowichi Jimbow and Vincent Hearing who have followed suit. Please take a moment to fill out your entries today. Mail or FAX them to V Hearing at the address listed on the form.
Bibliography:

The Bibliography published in this issue covers the period November, 1994 through January, 1995. 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.

MELANINS, MELANOGENS & MELANOGENESIS


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MELANOCYTES & KERATINOCYTES


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CD36 in human hepatic sinusoidal lining cells, hepatocytes, human hepatoma (HepG2-A1G) cells, and C32


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**MSH, POMC, GROWTH FACTORS & RECEPTORS**


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**TYROSINASE, TYROSINASE RELATED PROTEINS & MOLECULAR BIOLOGY**


MISCELLANEOUS
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