

3) BSDB Autumn Meeting. Durham, September 17th - 19th 1986

Local Organizer: J. Horton.

Meeting will include Workshops on: Immunology, Neurobiology, Oncogenes and Viruses in development, Mathematical Modelling.

CALL FOR SUGGESTIONS

Concerning

Joint BSDB Meeting with the Materno-fetal

Immunobiology Group

Durham, September 18 & 19 1987

(Roger Sutcliffe, John Horton and Martin Johnson)

This two day workshop will cover the development, genetics, molecular biology and immunobiology of the feto:maternal interface, particularly of trophoblast and extraembryonic endoderm. Topics to be covered could include trophoblast markers and sub-populations, selective gene expression and X-inactivation in extraembryonic lineages, MHC expression, trophoblast-uterine interactions, cross-species implantations and chimaeras.

Your suggestions on speakers, topics, working sessions etc. are welcome. Please contact Martin Johnson.

AUTUMN 1987

Next September the BSDB is holding two meetings, one in Durham and one in Bath. Full details of both meetings will be announced in the Spring Newsletter.

The Durham meeting is organized by Martin Johnson, and takes place on 16th-18th September. Martin writes:

The outline programme for this special topic Autumn discussion meeting will be finalized over the next month or two. The meeting will include a joint session with the Feto-maternal Immunology Group covering topics related to the materno-fetal interface, particularly the origins and properties of the "front-line" endoderm and trophoctoderm tissues, and the influence that events at or shortly after fertilization have on the segregation of these two cell lineages and on the nature of nuclear "imprinting". Accompanying this joint session we hope to have workshops on in-situ hybridization in mammalian embryos and on the technical aspects of making transgenic mice. There will also be a mammalian development session. The Feto-maternal Immunology Group will also have a session of their own at which BSDB members will be welcome. In addition, the BSDB will run a major session on Developmental Immunobiology in Xenopus with speakers from the USA, Japan, Switzerland, Belgium and the U.K. Suggestions for contributions to this meeting should be sent to Martin Johnson (address at back of Newsletter).

AUTUMN 1987

This September the BSDB is holding two meetings, the first in Durham and the second in Bath. Full details of these meetings are given below and the booking forms are in the 'Centre Section' of this Newsletter. Make sure you use the right booking form for the right meeting!

Durham: - 16th - 18th September, 1987.

THE IMMUNOLOGY OF DEVELOPMENT

This is a joint meeting with the Materno-Fetal Immunology Group, at which there will be two major sessions. On Wednesday and Thursday (16th and 17th) we are holding an international symposium on the Developmental Immunobiology of Xenopus, which will be followed on Friday, 18th by a workshop on the Thymus, with contributions from workers using comparative and mammalian models. On Thursday and Friday (17th and 18th) a joint meeting of the BSDB with the Materno-Fetal Immunology Group of the British Society for Immunology will consider the origins and properties of the extra-embryonic tissues of the mammal and in particular how these might influence the immunological relationships with the mother.

On Thursday morning the two sessions will combine under the guidance of Anne McLaren for talks on "The evolution of histocompatibility antigens" (Flajnik/Kaufman, Basel); "The molecular control of histocompatibility antigen expression during differentiation" (Kieran, Paris); "Transfection, transgenesis and histocompatibility antigen expression" (Holmes, Cambridge); "What else do histocompatibility antigens do?" (Curtis, Glasgow) and "The acquisition of immune function in development" (Edwards, Cambridge).

There will be a reception in Durham Castle and a tour of the cathedral on the evening of Wednesday, 16th. There will be a poster session (prize for the best poster) and a workshop on in situ hybridization as applied to the mammalian embryo on the evening of Thursday, 17th. This will be followed by an entertainment of the songs and music of Northumbria with piper, harpist and fiddler, plus a late bar!

Provisional programme for the Xenopus meeting

1. Generation of clones and histocompatible families. Kobel (Geneva), Picard (Louvain).
2. Embryonic origins and early differentiation of haemopoietic cells. Turpen (Omaha), Katagiri (Sapporo, Japan), Smith (Omaha), Tochinal (Sapporo).
3. Role of the thymus in T cell ontogeny and acquisition of tolerance to histocompatibility antigens. Horton (Durham), Manning (Plymouth), Nagata (Tokyo), Flajnik (Basel), Cohen (Rochester).
4. Metamorphosis, immunologic/endocrine interactions, interleukins. Cooper (Los Angeles), Ruben (Portland), Clothier (Nottingham), Rimmer (Aston), Rollins-Smith (Nashville), Jurd (Essex).
5. B cell ontogeny and immunoglobulin genes. Du Pasquier (Basel), Schwager (Basel).

Provisional programme for the mammal meeting

1. Origins and properties of extra embryonic membranes. Rossant (Toronto), Gardner (Oxford), Surani (Cambridge), Babinet (Paris), Monk (London), Graham (Oxford).
2. Immunological aspects of trophoblast. Sargent (Oxford), Billington (Bristol), Stern (Liverpool), Sutcliffe (Glasgow), Redman (Oxford).
3. Immunology and genetics of pregnancy disorders. Johnson (Liverpool), Lawler (London), Allen (Cambridge), Antczak (Ithaca), Stirrat (Bristol).
4. Workshop. Gaunt (Cambridge), Fleming (Cambridge).

Please return the booking form for this meeting to John Horton (local organizer) by Friday, 3rd July, 1987. If you wish to present a poster, please send the title and abstract to Dr. Horton by the same date.

Use the poster enclosed with this Newsletter to advertise the meeting in your department or Institute.

JANET ROSSANT
is the
VIRGIN ATLANTIC
Lecturer

CHARLES BABINET
is the
AIR UK
Lecturer

XENOPUS AND DEVELOPMENTAL IMMUNOBIOLOGY

September 1987, Durham, England

The goal of these sessions was to provide an update of immunological research that uses the Xenopus model system for probing important developmental issues. For this purpose the world's leading experts on Xenopus immunobiology were invited to Durham to review and discuss their ongoing research. The gathering of scientists from Denmark, France, Japan, Switzerland, U.S.A. and the U.K. promoted interactions between research groups and provided a long overdue state-of-the-art review.

The first session reviewed the production of clonal Xenopus (with defined major histocompatibility complex (MHC) types) from interspecific hybrids and the generation of histocompatible X.borealis (a species that has the useful quinacrine fluorescence nuclear marker). Such Xenopus are becoming increasingly available for research and are proving invaluable, not only for immunological studies, but also for examining sex determination and tumour gene expression. The advantages of using amphibian embryos for elucidating early differentiation pathways was highlighted in the second session. Studies on the embryonic origins of lymphoid cells are revealing the early restriction of mesodermal precursors to T- and B-cell lineages. This session highlighted the uses of monoclonal antibodies to characterize the emergence of various haemopoietic cell lines and their associated differentiation antigens.

Three sessions revealed the extent to which molecular and genetic characterization of the molecules of the Xenopus immune system are being probed by various laboratories. Thus the Xenopus MHC class I and II antigens appear to be very similar to equivalent mammalian glycoproteins. The tissue distribution of MHC antigens during development was described and the probable absence of class I MHC expression in the larva was highlighted. Immunoglobulin (Ig) diversity (Xenopus possesses 3 Ig heavy chain isotypes: IgM, IgY and IgX) was discussed at the protein and DNA level; mechanisms for differences between antibody repertoire of larvae and adults were suggested. The genomic organization of the Ig heavy chain cluster of Xenopus is proving to be similar to that of mammals (with multiple V_H regions, a few J elements and adjoining C region genes), but different from the multiple V-D-J-C subunits existing in elasmobranch fish. Homology between Xenopus and mammalian complement component C_3 genes was also described. The production and characterization of Xenopus cytokines, in particular interleukin-2 (IL-2), was described. The extent to which IL-2 and its receptor are evolutionary conserved molecules is currently being explored by *in vitro* (flow cytometry) studies, using recombinant human IL-2 and anti-human IL-2 receptor antibodies, to assess cell-surface binding.

The immunology of metamorphosis - a time when the frog is needing to reassess the spectrum of antigens it must consider as self - was discussed at some length. The role of corticosteroids in causing altered immunoregulation (e.g. inhibitory effects on IL-2 production) was highlighted and the effect of thyroxine and ageing on the immune system were considered. Altered susceptibility of metamorphosing Xenopus to a lymphoblastic lymphoma was also discussed. Studies on immune reactivity developing in larvally-immunized Xenopus are probing the mechanisms involved in the induction and maintenance of tolerance to xenogeneic proteins and alloantigens. In the final session the use of head/body chimeric Xenopus (that can be established with thymus epithelium and haemopoietic cells of different MHC haplotypes) to probe the role of the thymus in immune development was considered. This system is proving to be helpful for examining thymic education. This latter topic was also covered in the thymus workshop that successfully brought together amphibian and mammalian immunologists for lively discussion.

A much more detailed review of the Xenopus session has been submitted for publication in the journal Development.

John D. Horton,
Department of Zoology,
University of Durham.