Origins of the HIV-Mucosal Immunology Group (MIG)

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Conference report

Towards developing standardized protocols for evaluation of cellular mucosal immune responses – Recommendations from a DAIDS/NIH workshop, June 15–16, 2009

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ABSTRACT

Although 80% of HIV infections occur through mucosal routes and vaccine strategies need to be designed for inducing protective immune responses at the site of the viral entry, it has proven to be very challenging to measure these responses. A 2-day workshop was convened by Division of AIDS, National Institutes of Health on June 15–16, 2009 to address the challenges encountered in the evaluation of mucosal T cell immune responses. The goal of the workshop was to obtain recommendations/consensus for developing standardized protocols for the assessment of mucosal immunity. This report summarizes the areas of consensus and recommendations that should assist in developing standardized methodologies for the evaluation of mucosal immune responses.
2009 DIADS/NIH Workshop

Key challenges for evaluating mucosal immunity.

1. Standardization of sampling methods including choice of optimal sampling sites, sampling methods for gastrointestinal and urogenital tracts.
2. Insufficient number of cells to perform assays reliably.
3. Tissue processing methods that affect isolation, yield, viability and function of lymphocytes from mucosal sites.
4. Optimization of storage and transportation conditions of samples from clinical sites to laboratories.
5. Availability of common reagents for assays.
6. Standardization procedures for implementing assays in clinical trial settings.
7. Development of more sensitive high-throughput functional assays.
8. Uniform statistical consideration given to delineate positive responses from background.
9. Compilation and analysis of data generated through a systems biology approach.
HIV-Mucosal Immunology Group (MIG)

- Established as an NIAID-DAIDS & HVTN collaboration in Q3 2009
  - Identify best practices for GI or GU mucosal sample collection, processing, storage and analysis in clinical trials of HIV prevention/intervention agents
- Working Groups – key investigators and clinicians
  - Gastrointestinal (includes NHP sub-group)
  - Genitourinary
  - Systems Biology
- Scientific Review Committee – sets the scientific agenda
- Engage & encourage collaboration
  - Multi-disciplinary / multi-investigator research projects
  - Shared SOPs, methods, cross-network best practices
  - Regular teleconferences; annual scientific meeting
## MIG Investigators

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<th>GI Work Group</th>
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<th>Systems Work Group</th>
<th>Ex Officio / Other</th>
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<td>Charles Wira (Dartmouth)</td>
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<td>Otto Yang (SRC) (UCLA)</td>
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HVTN  MTN  ACTG  HPTN  IAVI  NIH  CHAVI  CAVD
MIG Accomplishments

Details in PLOS Collection “Advances in HIV Mucosal Immunology: Challenges and Opportunities” at www.plos.org/publications/collections

Image courtesy Otto Yang, Maria Teresa Ochoa, Gloria Preza, and Peter Anton
MIG Accomplishments

• Helped develop Global HIV Vaccine Enterprise resource: “Capturing Participant Information for Mucosal Sampling: An Investigator’s Guide”
  • Concept for the Guide arose from talk (Cu-Uvin) at MIG 2012
  • Hélène Zinszner, Global HIV Vaccine Enterprise
  • Follow-up talk (Patricia D’Souza, DIAID) this morning and print booklets at this workshop are first edition of the Guide
MIG Future Objectives (BMGF supported)

• Systems biology

• Mucosal PK/PD analyses in clinical trials

• Collection standards for archiving mucosal tissues

• Improving cryopreservation of mucosal samples (separate BMGF funding)
Funding Acknowledgements

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