BOTSWANA HARVARD AIDS INSTITUTE PARTNERSHIP FOR HIV RESEARCH AND EDUCATION

HIV Neutralizing Antibody Assays Workshop Programme

Botswana Harvard AIDS Institute Partnership

Sponsor: EDCTP Senior Fellowship Grant

05- 16 September 2011

Saturday 03/Sunday 04, September 2011

Arrival of participants

Monday 05 September 2011	Facilitator
08:00 – 08:30 Welcome:	BHP Directorate
08:30 – 09:30 Introduction: Overview of Neut. Assays	Prof. T. Mduluza/Bedi
09:30 – 10:00 Tea Break	
10:00 – 10:30 Safety Requirements	Quality Manager
11:00 - 11:20 BHP Laboratory Tours	Laboratory Manager
11:20 – 13:00 Practical: RNA extractions & RT	Neut. Team
13:00 – 14:00 Lunch	
14:00 – 16:30 Practical: First round PCR & Thaw cell lines	Neut. Team
Tuesday 06 September 2011	
08:00 – 09:00 Lecture: Summary HIV Virology	Prof. T. Mduluza
09:00 – 10:00 Practical: Second round PCR	Neut. Team
10:00 – 10:30 Tea Break	
10:30 – 12:45 Practical: Preparation of plates/LB media	Neut. Team
13:00 – 14:00 Lunch	
14:00 – 16:30 Practical: Run gel & extract DNA	Neut. Team
Wednesday 07 September 2011	
08:00 – 09:00 Lecture: HIV Origins, Variants & Evolution	Dr B. McDonald
09:00 – 10:30 Practical: Cloning & transformation reactions	Neut. Team
10:30 – 11:00 Break	
11:00 – 12:45 Practical: Plating out of transformants	Neut. Team
Set up Neutralizing assays	Neut. Team
13:00 – 14:00 Lunch	
14:00 – 17:00 Practical: Passage Cell lines	
Thursday 08 September 2011	
08:00 – 09:00 Journal Club – Participants presentations	Participants NHP, KM
09:00 – 10:30 Lecture: Summary HIV Immunology	Prof. T. Mduluza
10:30 – 11:00 Tea Break	
11:00 – 12:45 Lectures & Discussions	Neut. Team
13:00 – 14:00 Lunch	
14:00 – 16:30: Practical	Neut. Team
Friday 09 September 2011	
08:30 – 09:30 Lecture: HIV Life cycle, genome & structure	Dr B. McDonald
09:30 – 10:30 Lecture: Accessory genes and implications	Dr Ryan Wells
10:30 – 11:00 Tea Break	
11:00 – 12:45 Practical: Colony picking and expansion	Neut. Team
13:00 – 14:00 Lunch	
14:00 – 16:30 Practical: Cell lines passage + Reading assays	Neut. Team
Saturday 10 September 2011	
09:00 – 12:00 Practical: Minipreps & Restriction digest	Neut. Team
12:00 – 13:00 Practical: Co-transfection in 293T cells	Neut. Team

Monday 12 September 2011	Facilitator
11:00 – 12:00 Harvest Pseudovirus	Neut. Team
13:00 – 14:00 Lunch	
14:00 – 15:00 Practical: Set up TCID50 titration	Neut. Team
Practical: Set up broadly neutralizing assays	
Tuesday 13 September 2011	
08:30 – 09:30 Lecture: HIV co-infections	Dr S. Gaseitsiwe
09:30 – 10:30 Practical:	Neut. Team
10:30 – 11:00 Tea Break	
11:00 – 12:45 Practical: Set up neutralizing assays	Neut. Team
13:00 – 14:00 Lunch	
14:00 – 16:00 Discussions on neutralizing assays	Neut. Team
Wednesday 14 September 2011	
09:00 – 10:30 Lecture: Players in correlates of immunity	Dr R. Musonda
10:30 – 11:00 Break	
11:00 – 12:45 Practical: Reading neutralizing assays	Neut. Team
13:00 – 14:00 Lunch	
14:00 – 16:00 Practical: Discussion on practical issues	Neut. Team
Thursday 15 September 2011	
08:00 – 09:30 Journal club, Participants presentations	Participants ENG, GC, MT
09:30 – 10:30 Practical: Reading neutralizing Assays	Neut. Team
10:30 – 11:00 Tea Break	
11:00 – 12:45 Practical: Data interpretation & Reporting	Neut. Team
13:00 – 14:00 Lunch	
14:00 – 17:00 Practical: Data interpretation & Reporting	Neut. Team
Friday 16 September 2011	
08:30 – 09:30 Lecture: Progress in HIV Vaccines	Prof. Max Essex
09:30 – 10:30 Revisions	Neut. Team
10:30 – 11:00 Tea Break	
11:00 – 12:45 Workshop Assessment & Close down	Neut. Team
13:00 – 14:00 Lunch	
14:00 – 15:00 Free	Free

Neut Team: Prof T. Mduluza – EDCTP Senior Fellow
Keabetswe Bedi – EDCTP Postgraduate Student/Research Assistant
Sheron Dzoro - Postgraduate Student/Research Assistant

Saturday 17 September 2011 Participants Depart

EDCTP Senior Fellowship: Training Workshop

05th September – 16th September, 2011 at BHP, Gaborone, Botswana

Background:

Botswana and the sub-Saharan region has been devastated by the HIV/AIDS epidemic. The region is conducive to possible clinical trials on HIV vaccines in future; and capacity building is required in preparation. Furthermore, the methods to be established would be applicable in future by the trained personnel who are residents of the region in evaluation of vaccines. We envisage that establishment of neutralization assays, equipment and trained personnel would be a great achievement towards regional capacity building. There is need to develop Young Scientist in the region on the neutralizing methodology. Since Botswana Harvard AIDS Institute Partnership has an integral part in Network of Excellence activities, this workshop enhances the training of cadres within the network on the methodologies that have been established during the EDCTP Senior Fellowship supported project. The workshop to the young researchers would contribute knowledge towards understanding the role, activities and production of neutralizing antibodies, in individuals with different viral set points. The workshop is of value to the groups whose endeavours are searching for immunogens that would elicit appropriate arms of immunity for both preventive, curative and correlates of immunity as procedures in HIV infections.

Objectives

The workshop is for applicants selected from the Southern African region who are planning the implementation of HIV antibody neutralizing techniques in their projects and Institutes, and also inform them about advances made so far in application of the techniques, guidelines and procedures. The main objectives of the workshop will form the cornerstones such as;

1. Training participants the importance of neutralizing antibody work,
2. Assist participants in developing approaches to constructing their own neutralizing project work,
3. Training participants in proper assay planning and management,
4. Provide participants with information about the assay design and data manipulation,
5. Inform participants about important role of the assays in evaluation of correlates of transmission blocking immunity,
6. Inform participants of research integrity and consequences of unplanned culture procedures and the involvement of the requirement of a rigorous schedule when undertaking the assays.

Outcomes

At the end of the workshop, participants are expected to have gained skills in assay designs within a project, reagents required and ordering and financial plans that show details of knowledge of actual activities together with tasks involved and expenditure layout. Overall the following outputs can be expected from the workshop:

- Detailed neutralizing assays work requirements, activities and tasks in a logical order.
- The requirements necessary to run similar assays.
- Understanding of **Neutralizing procedures through training-by-doing.**
- Awareness of the **applications of the techniques in research**.

It is expected that the participants will benefit from their interaction with each other and with BHP research staff who are working in a moderate state-of-the art environment also at an Institution with world class collaboration and running several clinical trials. They would also become aware of problems that arise when operating in this part of the region. The use of the techniques in contribution to unraveling the still unclear puzzles in vaccine development and vaccine assessment when these become available in the near future.