

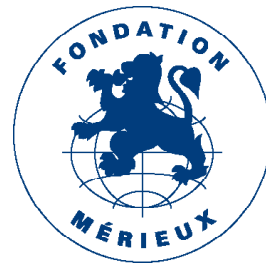
# Immunological Correlates of Vaccine-Derived Protection

Fondation Mérieux Conference Centre  
“Les Pensières”  
Veyrier-du-Lac - France

September 20-22, 2010

## Steering Committee:

- Philippe ANDRE
- Paul FINE
- Jacques LOUIS
- François SIMONDON
- Peter SMITH
- Ana-Maria HENAO-RESTREPO



# Background

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The detection and confirmation of valid immunological correlates of protective immunity is one of the dominant themes of vaccinology. Because of the expense and time involved in carrying out clinical trials of vaccines, the availability of an immunological measure which closely mirrors the ability of the vaccine to protect has immense attractions. Their recognition implies an understanding of the immunological basis of protection which can provide an important guide to vaccine development and improvement. And they are of importance for regulatory agencies tasked with licensing vaccines based on their assessed efficacy. Furthermore, a post-marketing monitoring of immunological correlates of protection might also be important in assessing vaccine effectiveness. The subject has attracted much research, literature and debate. Its terminology is unsettled, with terms such as “correlate” and “surrogate” being used with different implications by different authors and agencies, without generally agreed definitions. It is a complex and important subject.

Among the many issues which arise in considering correlates of protection is the question of what is protected against: infection, disease, severe disease or infectiousness. The immunological mechanisms involved in these different sorts of protection are typically not the same, involving different arms of the immune system. The distinction between these outcomes has important implications for the consequences of vaccination at the individual and population level. Phase 3 trials generally focus on disease outcomes, but indirect protection and herd immunity require protection against infection and infectiousness.

Reasonable “correlates” are available for protection against disease by some widely used vaccines (measles, meningococcus....) but not for others (BCG, pertussis....). Their presence has recently allowed the licensure of new vaccines without direct evidence of clinical protection (an example being Meningococcal C vaccine in the UK). Their absence reflects a gap in understanding the body’s response to infection, and impedes the development of effective vaccines against malaria, HIV and tuberculosis.

A variety of immunological and epidemiological approaches have been employed in the recognition and confirmation of correlates or surrogates of protection. Though derived in the context of studies of one infection or vaccine they may have important implications for others. There is a particular need to encourage communication and collaboration between immunologists and epidemiologists, as population studies are essential to demonstrate the validity and utility of any particular immunological measure.

This conference will bring together vaccinologists, immunologists, epidemiologists and regulatory scientists to discuss the subject from their different perspectives. In addition to presentations on generic and methodological issues, there will be at least two presentations, reflecting both epidemiological and immunological perspectives, on each of five different vaccines: hepatitis B, influenza, pertussis, a bacterial conjugate vaccine, and foot and mouth disease. Presentations will be focused and concise, allowing equal time for discussion.

# Scientific Programme

Monday 20 September 2010

17.30 - 18.30	Registration	
18.30 - 18.50	Welcome Address	Fondation Mérieux
18.50 - 19.30	Keynote lecture: <b>Immunologies of Infections, diseases and vaccine-derived protections</b>	Stanley PLOTKIN
19.45	Welcome dinner	

Tuesday 21 September 2010

## Session 1 Immune Correlates of Vaccine-Derived Protection: Generic Issues

08.30-11.20

Chaired by Ana Maria Henao-Restrepo and Paul Fine

08.30 - 08.50	<b>Immunological perspective and methods</b>	David GOLDBLATT
08.50 - 09.05	Discussion	
09.05 - 09.25	<b>Epidemiological perspective and methods</b>	Sara THOMAS
09.25 - 09.40	Discussion	
09.40 - 10.10	Coffee break	
10.10 - 10.30	<b>Statistical perspective and methods</b>	Andrew DUNNING
10.30 - 10.45	Discussion	
10.45 - 11.05	<b>Regulatory perspective and methods</b>	Mair POWELL
11.05 - 11.20	Discussion	



# Scientific Programme

## Session 2 **Correlates of Protection : four exemplar diseases** Chaired by Jan Holmgren and Philippe André

11.20 - 11.40	<b>TB</b>	Simone JOOSTEN
11.40 - 11.55	Discussion	
11.55 - 12.15	<b>Results of the recent BCG trial in South Africa: implication for correlates of protection against TB</b>	Willem HANEKOM
12.15 - 12.30	Discussion	
12.30 - 14.00	Lunch	
14.00 - 14.20	<b>Measles</b>	Diane GRIFFIN
14.20 - 14.35	Discussion	
14.35 - 14.55	<b>Malaria</b>	Adrian HILL
14.55 - 15.10	Discussion	
15.10 - 15.40	Coffee break	
15.40 - 16.00	<b>HIV and AIDS</b>	Marc GIRARD
16.00 - 16.15	Discussion	

## Session 3 **In depth Discussion on Correlates of protection against 5 diseases** Chaired by Brian Greenwood and Wolfgang Jilg

16.15 - 16.30	<b>Meningococcal conjugate vaccine-derived protection: overview</b>	Brian GREENWOOD
16.30 - 16.50	<b>Meningococcal vaccines: epidemiological and immunological perspectives</b>	Helen CAMPBELL
16.50 - 17.05	<b>Meningococcal vaccines: regulatory perspective</b>	Margaret BASH



# Scientific Programme

17.05 - 17.25	General Discussion on correlates of protection and meningococcal conjugate vaccines	
17.25 - 17.45	<b>Hepatitis B vaccine-derived protection: epidemiological perspective</b>	Hilton WHITTLE
17.45 - 18.05	General discussion on correlates of protection and hepatitis B vaccines	
19.00	Dinner	

Wednesday 22 September 2010

**Session 3**      **Continued**  
08.30 - 12.30      Chaired by Bernard Ivanoff & Cecil Cezrinsky

08.30 - 08.50	<b>Pertussis vaccine-derived protection: epidemiological perspective</b>	Peter MC INTYRE
08.50 - 09.05	<b>Pertussis vaccine-derived protection: immunological perspective</b>	Scott HALPERIN
09.05 - 09.20	<b>Pertussis vaccine-derived protection in the very young infant</b>	Iris DE SCHUTTER
09.20 - 09.40	General discussion on correlates of protection and pertussis vaccines	
09.40 - 10.00	<b>Foot and mouth disease vaccine-derived protection: epidemiological perspective</b>	Rossana ALLENDE
10.00 - 10.15	<b>Epidemiological view on correlates of vaccine-induced protection against Foot and Mouth disease</b>	Aldo DEKKER
10.15 - 10.30	<b>Foot and mouth disease vaccines: immunological perspective</b>	Brian CHARLESTON
10.30 - 10.45	<b>Foot and mouth disease vaccines: regulatory perspective</b>	Paul VAN AARLE
10.45 - 11.05	General discussion on correlates of protection and foot and mouth disease vaccines	



# Scientific Programme

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11.05 - 11.35	Coffee break	
11.35 - 11.55	<b>Influenza vaccine-derived protection: epidemiological perspective</b>	Karl NICHOLSON
11.55 - 12.10	<b>Influenza vaccines: immunological perspective</b>	Giuseppe DEL GIUDICE
12.10 - 12.25	<b>Influenza vaccines: what are immune correlates from the regulatory point of view</b>	Bettie VOORDOUW
12.25 - 12.45	General discussion on correlates of protection and influenza vaccines	
12.45 - 14.00	Lunch	

## Session 5

14.00 - 15.30

## Panel discussion

Chaired by François Simondon and Paul Fine

14.00 - 15.00	Discussion	
15.00 - 15.30	<b>Conclusions and end of the meeting</b>	
15.30 - 16.00	Coffee before departure	

