



Since AVAC published the first edition of this book just five years ago, 25 million more people have become infected with HIV and almost 15 million have died. Almost 5 million people became infected in 2003 and nearly 3 million were killed by AIDS. Over 20 million people have died since the first cases of AIDS were identified in 1981. The number of people living with HIV continues to grow and now approaches 40 million worldwide. Each day 14,000 men, women and children get infected — people in the most productive years of their lives, or with their whole lives still ahead of them. Shocking, numbing, sobering — the tragic testament to an epidemic that rages on.

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## the authors

BIOGRAPHIES

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**MÔNICA BARBOSA DE SOUZA**

is a psychologist working as the Coordinator of Community Education at the Rio de Janeiro HIV Vaccine Trials Unit (Projeto Praça Onze). Since 1994 she has been on the organizing committee of the National Meeting of PWA, Brazil's largest community AIDS conference. She is also a former president of Grupo Pela Vidda/Niteroi, a chapter of a leading AIDS advocacy organization.

**EMILY BASS**

has been writing about HIV/AIDS in the US and internationally since 1997. Her work has appeared in *Ms.*, *Out*, *Salon*, *POZ*, *the amfAR Treatment Insider* and *HIV Plus* magazines. From 2001–2004 she was senior writer at the *IAVI Report*, the newsletter of the International AIDS Vaccine Initiative (IAVI). She is currently doing field research for a book on scaling up AIDS treatment in East Africa.

### **SCOTT CARROLL**

has been involved in HIV advocacy and education for over a decade, through organizations such as The Gay Men's Health Collective of The Berkeley Free Clinic in California, the Whitman-Walker Clinic in Washington, DC and AVAC. He has also served on Community Advisory Boards (CABs) for HIV vaccine trials on both coasts of the US. He now does HIV prevention work in Southern Mexico and Belize.

### **KACHIT CHOOPANYA**

is a physician and researcher focused on HIV clinical studies among injecting drug users. He served as Principal Investigator (PI) of the (completed) AIDSVAX vaccine efficacy trial in Bangkok, and is now PI of the Bangkok arm of an upcoming international study on the use of tenofovir to prevent HIV infection. He was the Deputy Governor of Bangkok in 1996-1998 and Advisor to the Governor of Bangkok from 1998-2000.

### **LIZ CLARKE**

is a South Africa-based health and science writer who runs an independent media consultancy, in close association with the University of KwaZulu-Natal Nelson Mandela School of Medicine, the Doris Duke Medical Research Institute and the Medical Research Council. She also writes weekly columns for the *Sunday Tribune* in Durban and the *Independent* on Sunday in Johannesburg. Before launching her consultancy work, she spent three years as AIDS writer for the Independent Group of newspapers, following several years as news editor for the *Sunday Tribune*.

### **CHRIS COLLINS**

is a co-founder of AVAC and was its Executive Director in 2002-2003. As an aide to US Congressional Representative Nancy Pelosi he helped develop the first national legislation to provide incentives for private companies to work on developing microbicides and on vaccines against HIV, TB, and malaria. He has written widely about HIV prevention, research and policy issues and is currently a consultant in health policy and communications, as well as a member of the AVAC Board of Directors.

**HUNTLY COLLINS**

was the AVAC Director of Science Communication and Advocacy in 2003 and 2004. She is a former reporter for *The Philadelphia Inquirer*, where she covered public health (including AIDS) for over a decade. In 2002 Huntly was a Kaiser Teaching Fellow in South Africa, working with reporters who write about the AIDS epidemic. As a child she was a “Polio Pioneer,” as the school children who took part in the 1954 efficacy trial of Jonas Salk’s polio vaccine were known.

**PAT FAST**

is a pediatrician and immunologist who works as Medical Director at the International AIDS Vaccine Initiative in New York, where she is responsible for clinical trials of IAVI-sponsored vaccine candidates. Before joining IAVI she oversaw clinical studies of vaccines for influenza and cytomegalovirus at Aviron, a biopharmaceutical company, following seven years leading AIDS vaccine clinical research for the Division of AIDS (DAIDS) at the US National Institute of Allergy and Infectious Diseases (NIAID). Pat serves on the Vaccine Advisory Committee for the World Health Organization (WHO) AIDS Programme.

**GARANACE FRANKE-RUTA**

is a senior editor at *American Prospect*, a Washington, DC-based magazine that covers US politics. Before joining the Prospect staff, she worked as a writer for *The Washington City Paper*, the District of Columbia’s alternative weekly newspaper. During the early years of ACT UP New York, from 1988–1991, she volunteered with the Treatment and Data Committee to promote research and development of new AIDS treatments. Garance is a co-founder of AVAC, along with Bill Snow, David Gold and Chris Collins.

**DAVID GOLD**

began his work in AIDS as a volunteer lawyer at Gay Men’s Health Crisis (GMHC) and a treatment activist with ACT UP New York. From 1991–1995 he headed the medical information program at GMHC and edited its newsletter, *Treatment Issues*. He then moved to the International AIDS Vaccine Initiative, where he founded and edited the *IAVI Report* newsletter for several years before becoming IAVI’s first vice president for policy and public support. He is now a principal at Global Health Strategies, a consulting company specializing in public health issues.

**RUPERT HAMBIRA**

is the Senior Community Education Advisor for the HIV Vaccine Initiative in Botswana. An ordained minister of the United Congregational Church of Southern Africa, he has been instrumental in advising researchers how to conduct HIV vaccine research in a culturally appropriate manner in Botswana and has participated in developing strategies for community education and recruitment. Reverend Hambira is also the main liaison between researchers and the Community Advisory Board.

**RICHARD JEFFERYS**

is Basic Science Project Director at the Treatment Action Group (TAG), a non-profit AIDS research advocacy organization in New York. He started in the HIV/AIDS field in 1993 at the AIDS Treatment Data Network, working on treatment and treatment access-related issues, and moved into writing full-time about AIDS vaccines and immunology as a staff writer for the *IAVI Report* newsletter in 2001. He has also written on these topics for *HIVPlus*, *GMHC Treatment Issues*, *CRIA Update*, *POZ Magazine* and *TAGLine*.

**PATRICIA KAHN**

is a virologist-turned science journalist who has been writing about AIDS vaccines since 1997. She began working on the *IAVI Report* newsletter in 1998 and served as its editor from 2000–2003, with a focus on expanding international coverage. Prior to joining IAVI she was a Germany-based European correspondent for *Science* magazine, following several years as a staff scientist at the European Molecular Biology Laboratory in Heidelberg. She now works in New York as a freelance writer/editor.

**PONTIANO KALEEBU**

is a physician and immunologist who heads the HIV vaccine trial unit at the Uganda Virus Research Institute in Entebbe and the basic science unit of Uganda's Medical Research Programme on AIDS, and chairs the African AIDS Vaccine Programme. He was a principal investigator of the two AIDS vaccine trials to take place so far in Uganda, and serves on the AVAC Board of Directors.

**SUSHMA KAPOOR**

is Gender Advisor to the International AIDS Vaccine Initiative, where she focuses on identifying and removing obstacles to women's participation in AIDS vaccine trials. Before joining IAVI in 2002 she worked for the United Nations Children's Fund (UNICEF) and the United Nations Development Fund for Women (UNIFEM) in New York.

**EDD LEE**

is the AVAC Director of Community Education and Outreach. Edd grew up in the Twin Cities area in Minnesota, where he was involved with various health and human rights group, including the American Cancer Society, District 202, the Minnesota LGBT Educational Fund, The Queer Street Patrol, Minnesota Men of Color and the Dim Sum Club. Before joining AVAC he was Associate Director of Prevention Services for the Asian & Pacific Islander Wellness Center in San Francisco and served as community co-chair for the San Francisco HIV Prevention Planning Council.

**GRAHAM LINDEGGER**

is a professor in the School of Psychology at the University of KwaZulu-Natal in South Africa. He also leads the HIV/AIDS Vaccine Ethics Group within the South African AIDS Vaccine Initiative, a group which is working on ways to mainstream cultural considerations in the development and implementation of ethics guidelines for HIV vaccine trials in South Africa.

**JOSEPH MAKHEMA**

is a physician and co-investigator on various vaccine research protocols in Botswana. He has extensive experience caring for AIDS patients and is a key player in preparing the country for vaccine trials. Joe is a former member of the National HIV Vaccine Committee and continues to advise the Committee on many issues.

**MICHAEL MARTIN**

is an epidemiologist and infectious diseases specialist. He is chief of the HIV Vaccine Section of the Thailand Ministry of Public Health/ US Centers for Disease Control (CDC) collaboration and is based in Thailand.

### **SHAUN MELLORS**

is a person living with HIV/AIDS and began doing HIV/AIDS work in the mid-1980's. He is a former Executive Director of the Amsterdam-based Global Network of People Living with HIV/AIDS (GNP+) and was Senior Programme Manager for vaccines and microbicides at the International Council of AIDS Service Organisations (ICASO) in Toronto, Canada. Shaun also served as the community coordinator and community chair for the International AIDS Conferences in Durban (2000) and Barcelona (2002). He now works as an HIV consultant and trainer and is a Board member of the Southern African AIDS Trust and Dance4Life South Africa.

### **ALEXANDRE MENEZES**

has been involved in AIDS advocacy since 1992. From 1993–2001 he worked with Grupo Pela Vidda in Rio de Janeiro, helping to organize community meetings and skills-building workshops and representing them at Brazil's National AIDS Vaccine Committee. He was also an active member of the Rio de Janeiro vaccine trial site's Community Advisory Board. Alexandre currently works for the International AIDS Vaccine Initiative in New York and is on the AVAC Board of Directors.

### **NTHABISENG PHALADZE**

is a lecturer in the Department of Nursing Education at the University of Botswana. She has been a member of the Maiteko a Tshireletso HIV Vaccine Initiative Community Advisory Board since its inception in September 2001 and is currently co-chair of the Gaborone-based CAB and the global CAB of the US HIV Vaccine Trials Network (HVTN). Nthabi is also a member of several community-based groups focused on the AIDS epidemic.

### **AUDREY SMITH ROGERS**

is an epidemiologist with the Pediatric, Adolescent and Maternal AIDS Branch at the National Institute for Child Health and Human Development, a unit within the US National Institutes of Health (NIH). In 1994–2001 she was Science Officer for the REACH Project, a study which followed a population of medically managed HIV-positive youth, and is now Science Officer for the Adolescent Medicine Trials Network for HIV/AIDS Interventions. She is also a member of the Adolescent Scientific Committee of the Pediatric AIDS Clinical Trials Group (ACTG) and is active in the Society for Adolescent Medicine, especially in helping to develop guidelines for the ethical conduct of research involving adolescents.

**BILL SNOW**

has been an advocate for AIDS vaccines since 1990, first through ACT UP New York and then through ACT UP Golden Gate/Survive AIDS. He was instrumental in establishing national and local Community Advisory Boards in three US government vaccine clinical trials groups—the AIDS Vaccine Evaluation Group (AVEG), HIV Network for Prevention Trials (HIVNET) and HVTN—and served as a community representative on each of their scientific steering committees. Bill is currently a member of the Coordinating Committee of the Global HIV/AIDS Vaccine Enterprise and an Emeritus member of the AVAC Board of Directors.

**CHRISTINE STEGLING**

is Director of the Botswana Network on Ethics, Law and HIV/AIDS, an organization that addresses human rights and legal issues in the context of Botswana's HIV epidemic. Her background is in social anthropology and development studies, and she was formerly a lecturer in sociology at the University of Botswana. Christine has been a member of the Maiteko a Tshireletso HIV Vaccine Initiative Community Advisory Board since its inception and has served as its Secretary since early 2003.

**PRAVAN SUNTHARASAMAI**

is a physician specialized in clinical tropical medicine and vaccinology. He is now a consultant of the Clinical Infectious Research Unit within the Faculty of Tropical Medicine at Mahidol University in Bangkok and Deputy Chief of Clinic Coordinating Component of the Bangkok Tenofovir Study Group.

**JORDAN TAPPERO**

is a physician and Director of the Thailand/US collaboration between the Thai Ministry of Public Health and the US Centers for Disease Control, and Public Health Attaché to the US Embassy in Thailand. Before coming to Thailand he led the CDC's epidemiology section for the Meningitis and Special Pathogens Branch, which focuses on bacterial meningitis and bioterrorism preparedness. From July 1995–May 1998 Jordan served as CDC's first medical epidemiologist assigned to its field station in Botswana, where he did research and worked to strengthen activities on HIV and tuberculosis.

**PENINAH THUMBI**

is the clinical trials manager responsible for the daily management of participants in Botswana's HIV vaccine study clinic, and for adherence to the trial protocols and to Good Clinical Practice (GCP) and source documentation.

**FRITS VAN GRIENSVEN**

is a behavioral epidemiologist and the Associate Director for Research of the collaboration between Thailand's Ministry of Public Health and the US Centers for Disease Control Collaboration. He was trained in The Netherlands and the US in medicine and public health, following his studies of sociological theory and social research methods. His main interest is behavioral and biomedical HIV prevention research.

**SUPHAK VANICHSENI**

is a physician who has worked on issues of injection drug use and HIV/AIDS in Thailand for over two decades. She coordinated follow-up of incarcerated participants in Thailand's first Phase III trial of an AIDS vaccine (VaxGen's AIDSVAX candidate), and of the preparatory study leading up to the trial. She is now Chief Clinic Coordinator for The Bangkok Tenofovir Study.

**TONYA VILLAFANA**

is the site Director for the HIV Vaccine Initiative in Botswana and an investigator on several vaccine research studies in the country. She was responsible for establishing two HIV vaccine clinical trial sites in Botswana and has worked closely with the Ministry of Health on initiatives to build in-country capacity for conducting these trials, including strengthening of national regulatory bodies and advising the National Vaccine Committee on the development of a national vaccine plan.

**SABINA WAKASIKA**

is a licensed nurse with expertise in public health and has spent the last six years as an STI/HIV trainer for middle level medical training colleges in Kenya and as a tutor for nurses. She began working with the Kenyan AIDS Vaccine Initiative in 2001, with a focus on integrating and educating communities about vaccine development and on counseling AIDS vaccine trial participants. She is also a community advisor to the Nairobi office of the International AIDS Vaccine Initiative, helping to build vaccine literacy (through building capacity at community-based organizations) in five provinces.

**STEVE WAKEFIELD**

is a health care advocate with over 25 years of involvement in projects to increase community participation, particularly among African-Americans. He is currently the Associate Director for Community Relations and Education for the NIH-sponsored HIV Vaccine Trials Network. Steve also serves on the AIDS Vaccine Research Working Group of the US National Institute of Allergy and Infectious Diseases and on the AVAC Board of Directors.

**MITCHELL WARREN**

became the Executive Director of AVAC in April 2004. Before moving to AVAC he led efforts at the International AIDS Vaccine Initiative to increase community understanding and national involvement in AIDS vaccine trials in parts of Africa, Asia and Latin America. Prior to joining IAVI Mitchell spent over a decade working on public and reproductive health issues in developing countries, as Vice President and Director of International Affairs for The Female Health Company, the manufacturer of the female condom, and with Population Services International in South Africa.

**PAUL WETAKA**

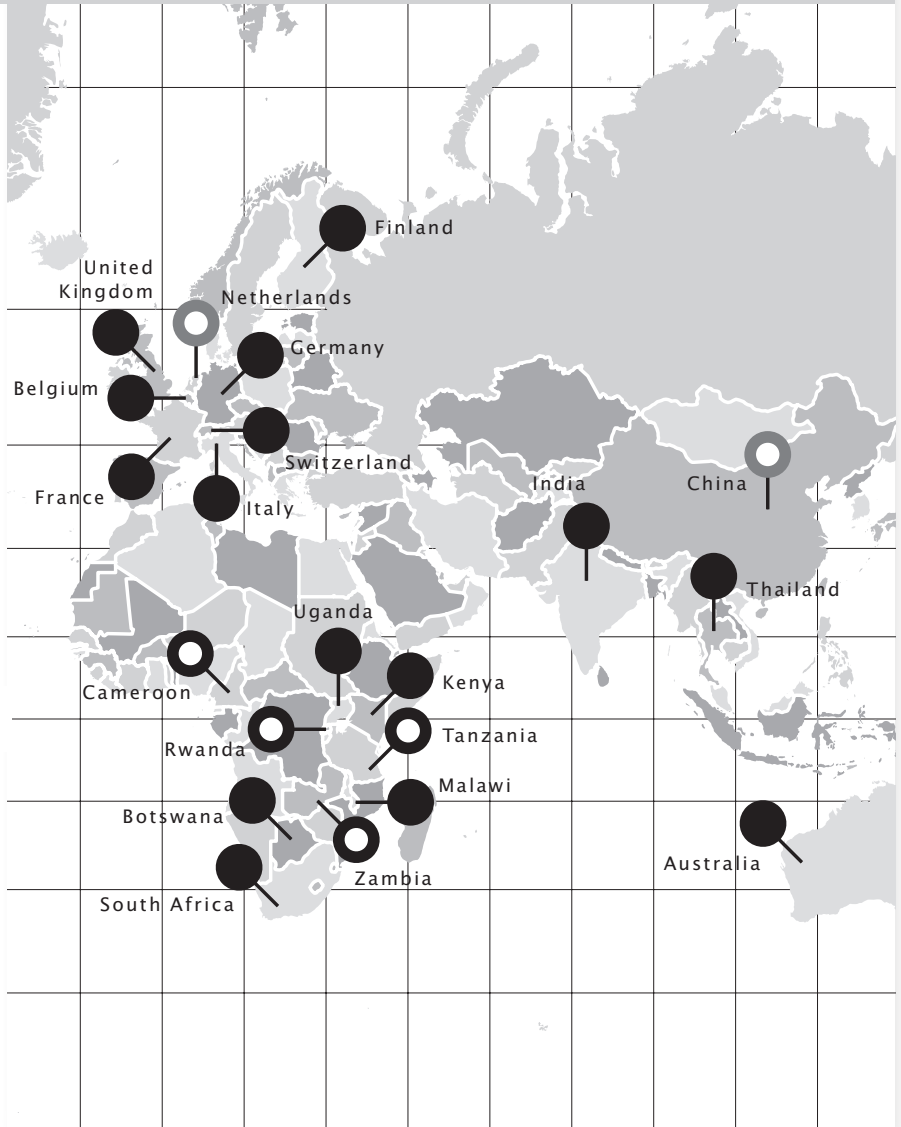
is a soldier in the Ugandan military and has been involved with AIDS vaccines since the mid-1990's, when he volunteered for the country's (and Africa's) first AIDS vaccine trial. He was also a member of that study's Community Advisory Board, and of the CAB for Uganda's second trial in 2003-2005. He currently works with the Army unit that provides medical care for soldiers with HIV/AIDS and speaks frequently on radio, television and at workshops about HIV prevention and vaccine research.

Fig. 7.1 Countries conducting AIDS vaccine trials (February 2005)



## trial sites around the world

source: adapted from International AIDS Vaccine Initiative (IAVI)



**Table 7.2 Preventive AIDS vaccines in clinical trials (February 2005)**

<b>Two-vaccine combinations</b>			
<b>Sponsor<sup>1</sup></b>	<b>Developer<sup>1</sup></b>	<b>Trial site(s)</b>	<b>Phase</b>
USMHRP, MoPH	Aventis, VaxGen	Thailand	III
DAIDS/HVTN, ANRS	Aventis	USA	I/II
IAVI, MRC	U. Oxford, KAVI	Kenya, Uganda, UK	I, I/II
DAIDS	Australian/Thai HIV Vaccine Consortium	Australia	I/II
DAIDS/HVTN	VRC USMHRP, Makerere U.	Uganda, USA	I
DAIDS/HVTN	Therion	USA	I
U. Mass. Med., ABL		USA	I
DAIDS/HVTN	Chiron	USA	I
<b>DNA vaccines</b>			
FIT Biotech		Finland	I/II
DAIDS/HVTN	VRC	USA	I
IAVI	ADARC	USA	I
ISS		Italy	I
DAIDS/HVTN	Epimmune	USA, Botswana	I

*(table continued on following pages)*

<sup>1</sup> Abbreviations and contact information for these organizations are listed in Appendix 4.

<sup>2</sup> Clade A/E is an older but still often-used designation for HIV strains that were later found to be recombinants between two clades, rather than a pure clade. It is now called CRF01\_AE. (CRF= circulating recombinant form.)

## ongoing clinical trials

source: data from IAVI<sup>①</sup> NIH<sup>②</sup> and HVTN/UCSF's Pipeline Project<sup>③</sup>

Vaccine design	Clade
PRIME canarypox viral vector with <i>env</i> and <i>gag-pol</i> BOOST Env protein (gp120 subunits)	B, A/E <sup>2</sup>
PRIME canarypox vector with <i>env, gag, pro, RT, nef</i> BOOST 5 lipopeptides with CTL epitopes from <i>gag, pol, nef</i>	B
PRIME DNA vaccine with <i>gag</i> + CTL epitopes from <i>gag, pol, nef, env</i> BOOST MVA with <i>gag</i> + same CTL epitopes	A
PRIME DNA vaccine with <i>gag, RT, rev, tat, vpu, env</i> BOOST fowlpox viral vector with same genes as prime	B
PRIME DNA vaccine with <i>gag, pol, nef</i> + <i>env</i> BOOST adenovirus vector with <i>gag-pol</i> + <i>env</i>	B + A, B, C
PRIME MVA viral vector with <i>env, gag, tat, rev, nef, pol</i> BOOST fowlpox viral vector with same genes as prime	B
PRIME DNA vaccine with <i>gag</i> + 5 different <i>env</i> genes BOOST 5 Env proteins (gp120) in adjuvant (QS21)	A, B, C, A/E <sup>2</sup>
PRIME DNA vaccine with <i>gag, env</i> attached to microparticles BOOST Env protein (oligomeric gp140) + adjuvant (MF59)	B
<i>nef, rev, tat, gag, pol, env</i> , CTL epitopes	B
<i>gag, pol, nef</i> + <i>env</i> One trial testing vaccine with or without cytokine (IL-2)	B + A, B, C
<i>gag, env, pol, nef, tat</i>	C
<i>tat</i>	
21 conserved CTL epitopes from <i>gag, pol, env, nef, rev, vpr</i> and T-helper epitope	

## references

- ① [www.iavireport.org/trialsdb](http://www.iavireport.org/trialsdb)  
Clinical trials database at the International AIDS Vaccine Initiative (IAVI).
- ② <http://clinicaltrials.gov>  
Database of trials sponsored by the US National Institutes of Health (NIH).
- ③ <http://chi.ucsf.edu/vaccines/vaccines?page=vc-03-00>  
Table of trials conducted by the US HIV Vaccine Trials Network (HVTN).

**Table 7.2 Preventive AIDS vaccines in clinical trials (February 2005)** *continued*

<b>Viral vector vaccines</b>			
<b>Sponsor<sup>1</sup></b>	<b>Developer<sup>1</sup></b>	<b>Trial site(s)</b>	<b>Phase</b>
DAIDS/HVTN	Merck	US, Dominican Republic, Haiti, Peru, Canada, Australia	IIb
		US, Puerto Rico, Brazil, Haiti, Malawi, South Africa, Peru, Thailand	I
DAIDS/HVTN	VRC	US	I
DAIDS/HVTN, SAAVI	AlphaVax	US, South Africa, Botswana	I
IAVI, ICMR, NACO	Targeted Genetics	Belgium, Germany, India	I
EU, Imperial College London, UK MRC Clinical Trials Unit	EuroVacc	UK, Switzerland	I
IAVI	ADARK	US	I
IAVI, MRC, SAAVI	U. Oxford, KAVI	UK, Switzerland, Kenya, South Africa	I
DAIDS/HPTN	Aventis	Uganda	I infants
<b>Peptide vaccines</b>			
ANRS	Aventis	France	II
DAIDS/HVTN	Wyeth	US	I
ANRS	Aventis	France	I
ANRS	Biovector SA	France	I
<b>Protein subunit vaccines</b>			
USMHRP	AVANT, Harvard U.	US	I
ANRS	Aventis	France	I

Vaccine design	Clade
adenovirus vector with <i>gag, pol, nef</i>	B
adenovirus vector with <i>gag</i>	B
adenovirus vector with <i>gag-pol</i> or <i>gag, pol, nef</i> + <i>env</i>	B + A, B, C
VEE (venezuelan equine encephalitis) vector with <i>gag</i>	C
AAV (adeno-associated virus) vector with <i>gag, pro, RT</i>	C
NYVAC-HIV-C (vaccinia vector) with <i>gag, pol, nef, env</i>	C
MVA vector with <i>gag, env, pol, nef, tat</i>	C
MVA vector with <i>gag</i> + CTL epitopes from <i>gag, pol, nef, env</i>	C
canarypox viral vector with <i>env</i> and <i>gag/pol</i>	A/E <sup>2</sup>
5 lipopeptides with CTL epitopes from <i>gag, nef, pol</i>	B
Conserved CTL epitopes from <i>gag, nef</i> and helper T epitopes from <i>env, gag</i> in adjuvant (RC329-SE), with or without cytokine (GM-CSF)	B
5 lipopeptides with CTL epitopes from <i>gag, pol, nef</i> + helper epitope from non-HIV protein (tetanus toxoid)	B
4 lipopeptides with CTL epitopes <sup>4</sup> from <i>gag, pol-RT, pol, nef</i> and helper epitope from a non-HIV protein (tetanus toxoid)	B
Portion of Gag protein (p24) fused to anthrax-derived protein (minus toxin)	
Env proteins gp120 and gp41 given mucosally (nasally or vaginally) with or without adjuvant (DC-chol)	B



## organizations

involved with AIDS VACCINE DEVELOPMENT and/or ADVOCACY<sup>1</sup>

**KEY**  
 telephone number **T**  
 facsimile number **F**  
 email address **E**  
 internet website address **I**

### GOVERNMENT AGENCIES and NON-PROFIT ORGANIZATIONS SUPPORTING AIDS VACCINE DEVELOPMENT

#### ANRS

##### **Agence Nationale de Recherche sur le SIDA**

National Agency for AIDS Research

*France's funding agency for research on HIV/AIDS basic science, treatment, vaccine development and clinical testing, with six international clinical sites: Africa (3 sites), Asia (2) and South America (1).*

101, rue de Tolbiac  
 75013 Paris  
 France

**T** +33 (1) 53.94.60.00  
**F** +33 (1) 53.94.60.01  
**E** [information@anrs.fr](mailto:information@anrs.fr)  
**I** [www.anrs.fr](http://www.anrs.fr)

#### DAIDS

##### **Division of AIDS**

of the US National Institute of Allergy and Infectious Diseases (NIAID)

*Supports basic research, pre-clinical development and clinical testing of AIDS vaccines through a variety of programs, including the HIV Vaccine Trials Network and the US Military HIV Research Program (see listings below).*

NIAID Office of Communications & Public Liaison  
 6610 Rockledge Drive, MSC6612  
 Bethesda, MD 20892-6612  
 USA

**T** +1(800) 772-5464  
**I** [www.niaid.nih.gov/daids/vaccine/default.htm](http://www.niaid.nih.gov/daids/vaccine/default.htm)

<sup>1</sup> Some of the organizations listed work in areas in addition to AIDS and AIDS vaccines. Descriptions included here focus only on AIDS-related activities.

## EDCTP

### **European and Developing Countries Clinical Trials Partnership**

*Works to integrate European research and coordinate with African researchers in developing medicines and vaccines against HIV/AIDS, malaria and vaccines, through funding of clinical trials, infrastructure and networking.*

Laan van Nieuw Oost Indië 334  
The Hague, The Netherlands  
T +31 (70) 344 0880 [or]  
+31 (70) 344 0899  
E [info@edctp.org](mailto:info@edctp.org)  
I [www.edctp.org](http://www.edctp.org)

## EU

### **European Union**

*Supports AIDS vaccine research and testing (including EuroVacc, see listing), development of clinical trial site infrastructure, and policy work.*

Research Directorate-General  
B-1049 Brussels  
Belgium  
T +32 (2) 299 11 11  
E [research@ced.eu.int](mailto:research@ced.eu.int)

Sixth Framework Research  
Programme:

I [http://europa.eu.int/comm/research/fp6/index\\_en.html](http://europa.eu.int/comm/research/fp6/index_en.html)

## EUROVACC

### **EuroVacc Foundation**

*Supports collaborations among European laboratories to develop and test AIDS vaccines and build clinical trials infrastructure in developing countries.*

EuroVacc Foundation Secretariat  
c/o IATEC, Rm 03-02  
Pietersbergweg 9  
1105 BM Amsterdam  
The Netherlands  
T +31 (20) 314 93 27  
F +31 (20) 314 93 99  
I [www.eurovacc.org](http://www.eurovacc.org)

## HVTN

### **HIV Vaccine Trials Network**

*International collaboration of scientists conducting clinical trials of AIDS vaccine candidates. HVTN supports sites in Africa (6 sites), Asia (3), Caribbean (5), South America (4) and the US (12). (listed in the next section)*

1100 Fairview Avenue North, LE-500  
Seattle, WA 98109-1024  
USA  
T +1 (206) 667-6705  
E [info@hvtn.org](mailto:info@hvtn.org)  
I [www.hvtn.org](http://www.hvtn.org)

## IAVI

### **International AIDS Vaccine Initiative**

*Carries out pre-clinical and clinical development of AIDS vaccine candidates, along with policy and advocacy work.*

New York office:  
110 William Street, Floor 27  
New York, NY 10038-3901  
USA  
T +1 (212) 847-1111  
F +1 (212) 847-1112  
I [www.iavi.org](http://www.iavi.org)

## ICMR

### **Indian Council of Medical Research**

*Funds health-related research, including AIDS care, treatment, vaccine development and surveillance.*

V. Ramalingaswami Bhawan,  
Ansari Nagar,  
New Delhi - 110029  
India  
T +91 (11) 26588895, 26588980  
E [icmrhqds@sansad.nic.in](mailto:icmrhqds@sansad.nic.in)  
I [www.icmr.nic.in](http://www.icmr.nic.in)

**MOPH**

**Ministry of Public Health  
(Thailand)**

*Builds and supports infrastructure for large-scale AIDS vaccine trials.*

**E** eng-webmaster@health.moph.go.th  
**I** http://eng.moph.go.th

**MRC**

**Medical Research Council (UK)**

*Funds basic research, pre-clinical and clinical vaccine development. Its Clinical Trials Centre provides central support for EuroVacc trials (see next section, United Kingdom).*

20 Park Crescent,  
London W1B 1AL  
UK

**T** +44 (20) 7636 5422  
**F** +44 (20) 7436 6179  
**I** www.mrc.ac.uk

**NACO**

**National AIDS Control  
Organisation (India)**

*Coordinates national response to HIV/AIDS, including prevention and care in context of AIDS vaccine trials.*

Ministry of Health & Family Welfare  
Government of India  
9th floor, Chandralok Building  
36, Janpath  
New Delhi 110001  
India

**T** +91 (11) 23325343 [or]  
23731774 [or] 23731778  
**F** +91 (11) 23731746  
**E** info@nacoonline.org  
**I** www.naco.nic.in

**OAR**

**Office of AIDS Research**

within the Office of the Director of NIH  
*Responsible for the scientific, budgetary, legislative and policy elements of the NIH AIDS research program.*

National Institutes of Health  
9000 Rockville Pike  
Bethesda, MD 20892  
USA

**E** oartemp1@od31em1.od.nih.gov  
**I** www.nih.gov/od/oar

**SAAVI**

**South African AIDS Vaccine  
Initiative**

*Coordinates research, development and testing of AIDS vaccines in South Africa.*

MRC Cape Town  
Francie van Zijl Drive  
Parowvallei, Cape;  
PO Box 19070  
7505 Tygerberg  
South Africa

**T** +27 (21) 938 0525  
**E** saavi@mrc.ac.za  
**I** www.saavi.org.za

**USMHRP**

**US Military HIV Research Program**

*Develops and tests candidate AIDS vaccines; builds clinical trials infrastructure (3 trial sites in Africa; 4 in Thailand). Cooperative effort of two organizations: Walter Reed Army Institute of Research and Henry M. Jackson Foundation.*

US Military HIV Research Program  
1600 East Gude Drive  
Rockville, Maryland 20850  
USA

**T** +1 (301) 251-5000  
**F** +1 (301) 762-7460  
**I** www.hivresearch.org

## AIDS VACCINE CLINICAL TRIAL SITES (and prospective sites)

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### BRAZIL

**Hospital Escola Sao Francisco de Assis**  
Projeto Praca Onze  
Av. Presidente Vargas, 2863 - Cidade Nova  
20210-030  
T +55 (21) 2273-9073  
I [www.pracaonze.ufrj.br](http://www.pracaonze.ufrj.br)

**Centro de Fefrencia e Treinamento - DST/AIDS**  
HVTU Vila Mariana  
Centro de Referência e Treinamento em DST/Aids  
Secretaria de Estado da Saúde de São Paulo  
Rua Santa Cruz, 81  
CEP 04119-000  
T +55 (11) 5081-5052

### BOTSWANA

**Jwaneng Mine Hospital**  
T + 267 5882-004

**Botswana-Harvard Partnership for HIV Research & Education**  
Vaccine Initiative  
Princess Marina Hospital  
Private Bag BO 320  
Gaborone  
T +267 302-671

### CAMEROON

**Walter Reed Johns Hopkins Cameroon Program**  
BP 7039  
Rue Ceper  
Yaoundé  
T +237 (221) 33-82 [or]  
+237 (950) 46-72  
E [info@wrjhcp.org](mailto:info@wrjhcp.org)

### CHINA

**Guangxi Health and Anti-Epidemic Center**  
80 Taoyuan Road  
Nanning 530021  
Guangxi P.R.  
T +86 (771) 5327-110

### DOMINICAN REPUBLIC

**IDCP**  
C / Federico Velasquez  
esq. Albert Thomas  
Santo Domingo  
T +809 684-6265 [or]  
+809 684-3257 ext. 342

### HAITI

**Cornell-GHESKIO**  
Institut National de Laboratoire et de Recherches  
33 Boulevard Harry Truman  
Cité de l'Exposition  
Port-au-Prince  
T +509 222-0031 [or]  
+509 222-2241

### INDIA

**Indian Council of Medical Research**  
PO Box 1895, Plot #73, G Block  
MIDC Bhosari  
Pune 411 026  
T +91 (20) 7121072

## ITALY

**Spallanzani Hospital (IRCCS)**  
Rome

**San Raffaele Hospital (IRCCS)**  
Milan

**Dept. of Infectious Diseases**  
University of Rome "La Sapienza"

**San Gallicano Hospital (IRCCS)**  
Rome

*IRCCS (Istituto di Ricovero e Cura a Carattere Scientifico) are Institutes for Clinical Care and Research.*

## JAMAICA

**Epidemiology Research  
Training Unit**  
Jamaica Ministry of Health  
55 Slipe Pen Road  
Kingston 5  
T +876 922-2513

## KENYA

**KAVI**  
**Kenyan AIDS Vaccine Initiative**  
HIV/AIDS Vaccine Evaluation Unit  
University of Nairobi  
Dept. of Medical Microbiology  
Kenyatta National Hospital  
PO Box 20723  
Nairobi  
T +254 (2) 717694 or 714613  
E info@kaviuon.org [or]  
kavi@kaviuon.org  
I www.kaviuon.org

**Walter Reed Project – Kenya**  
United States Army Medical Research  
Unit  
Kenya Medical Research Institute  
Clinical Research Center  
Walter Reed Project  
Hospital Road  
Kericho District Hospital  
T (254-361) 21733/31138  
I www.usamrukenya.org

## MALAWI

**College of Medicine**  
**Johns Hopkins Project**  
Kachere Rehabilitation Centre  
Chipatala Avenue  
PO Box 1131  
Blantyre  
T +265 (1) 670132

## PERU

**Asociación Civil Selva Amazonica**  
450 Fanning  
Iquitos  
T +51 (65) 23-6277  
I www.impactaperu.org

## IMPACTA

Affiliated Unit of FHCRC/University of  
Washington  
Grimaldo del Solar 805  
Miraflores, Lima 18  
T +51 (1) 242-3072 [or] 800-17432  
I www.impactaperu.org

## PUERTO RICO

**University of Puerto Rico**  
Maternal Infant Studies Center  
Biomedical Building 2  
1st Floor  
Rio Piedras 00935  
T +1 (888) VACUNAS or +787 753-5913

## RWANDA

**Projet San Francisco**  
BP 780  
Kigali

### Home office:

**Rwanda-Zambia HIV Research Group**  
Emory University  
Rollins School of Public Health  
Dept. of International Health  
1518 Clifton Road NE, Suite 764  
Atlanta, GA 30322  
T +1 (404) 727-7883  
F +1 (404) 727-4590  
E sallen5@sph.emory.edu

## SOUTH AFRICA

### Medical Research Council

491 Ridge Road  
Overport  
Durban 4001  
T +27 (31) 203-4828  
I [www.mrc.ac.za](http://www.mrc.ac.za)

### Perinatal HIV Research Unit

Chris Hani Baragwanath Hospital  
PO Bertsham  
Soweto 2013  
T +27 (11) 989-9822  
I [www.chrisanibaragwanathhospital.co.za/bararesearch\\_summaries.jsp#perinatal](http://www.chrisanibaragwanathhospital.co.za/bararesearch_summaries.jsp#perinatal)

### Desmond Tutu HIV Centre

University of Cape Town  
Anzio Road  
PO Box 13801  
Mowbray 7705  
T +27 (21) 650-6960

## SWITZERLAND

### Centre Hospitalier Universitaire Vaudois (CHUV)

Rue du Bugnon 46  
1011 Lausanne  
T +41 (21) 314 11 11  
E [info@chuv.ch](mailto:info@chuv.ch)  
I [www.chuv.ch](http://www.chuv.ch)

## TANZANIA

### Mbeya Medical Research Programme

Mbeya Referral Hospital  
Hospital Hill  
PO Box 2410  
Mbeya  
T +255 (25) 2503364  
F +255 (25) 2503134  
E [MMRP.TZ@lrz.uni-muenchen.de](mailto:MMRP.TZ@lrz.uni-muenchen.de)  
I [www.mmrp.org](http://www.mmrp.org)

## THAILAND

### Armed Forces Research Institute of Medical Sciences

Department of Retrovirology  
315-6 Rajvithi Road  
Bangkok  
T +66 (2) 644-4888  
F + 66 (2) 644-4824  
I [www.afrims.org](http://www.afrims.org)

Information about ongoing efficacy  
trial/trial sites in southern Thailand:  
I [www.primeboost3.org](http://www.primeboost3.org)

### Research Institute for Health Sciences

Chiang Mai University  
110 Intavaroros Road, Amphur Muang  
Chiang Mai 50202  
T +66 (53) 05389-4792-3

## TRINIDAD AND TOBAGO

### Medical Research Foundation of Trinidad & Tobago

Affiliated Unit of University of  
Maryland at Baltimore  
7 Queens Park East  
Port of Spain  
T +868 622-4917

## UGANDA

### Makerere University/Walter Reed Project

Makerere Univ Medical School, A10-A14  
Mulago Hill Road  
Kampala, 16524  
T +256 (41) 534588  
F +256-41-534586  
I [www.muwrp.org](http://www.muwrp.org)

### UVRI

### Uganda Virus Research Institute

PO Box 49  
Entebbe Uganda  
T +256 (41) 320776  
F +256 (41) 321457  
E [information@iavi.or.ug](mailto:information@iavi.or.ug)  
I [www.health.go.ug/other\\_inst.htm](http://www.health.go.ug/other_inst.htm)

Trial site and CAB newsletter:  
I [www.iavi.org/uganda](http://www.iavi.org/uganda)

**UNITED KINGDOM**

**Clinical Trials Centre**  
 St. Mary's Hospital  
 Imperial College of Science,  
 Technology and Medicine  
 Praed Street  
 London W2 1NY

**Johns Hopkins University**  
 Center for Immunization Research  
 Hampton House, Room 117  
 624 North Broadway  
 Baltimore, MD 21205-1996  
 T +1 (877) 863-1374 or 955-7283  
 I [www.projectsave.jhsph.edu](http://www.projectsave.jhsph.edu)

**UNITED STATES**

**Alabama Vaccine Research Clinic**  
 University of Alabama at Birmingham  
 Department of Medicine  
 Division of Infectious Diseases  
 908 20th Street South, CCB 310  
 Birmingham, AL 35294-2050  
 T +1 (205) 975-2839  
 I <http://main.uab.edu/show.asp?durki=29787>

**San Francisco Department of Public Health**  
 AIDS Office  
 25 Van Ness Avenue, Suite 500  
 San Francisco, CA 94102-6033  
 T +1 (415) 554-9068  
 I [www.sfajidsresearch.org](http://www.sfajidsresearch.org)

**University of Illinois at Chicago**  
 Division of Infectious Disease  
 UIC Department of Medicine  
 808 S. Wood St., Room 874  
 Chicago, IL 60612  
 T +1 (312) 413-9794

**Brigham and Women's Hospital**  
 Infectious Disease, Clinical Trials  
 Center PBB-A457  
 75 Francis Street  
 Boston, MA 02115  
 T +1 (617) 525-7327  
 I [www.partners.org/bwh](http://www.partners.org/bwh)

**Fenway Community Health**  
 7 Haviland Street  
 Boston, MA 02115  
 T +1 (617) 927-6450  
 I [www.fenwayhealth.org](http://www.fenwayhealth.org)

**University of Maryland at Baltimore**  
 Institute of Human Virology  
 Medical Biotechnology Center N449  
 725 West Lombard St.  
 Baltimore, MD 21201-1192  
 T +1 (866) 448-4448  
 I [www.ihv.org](http://www.ihv.org)

**Saint Louis University School of Medicine**  
 HIV Vaccine Trials Unit  
 3691 Rutger, Suite 103  
 St. Louis, MO 63110  
 T +1 (800) 268-5880 ext.5448 [or]  
 +1 (314) 977-9644  
 I <http://medschool.slu.edu/hvtu>

**Aaron Diamond AIDS Research Center**  
 455 First Avenue, 7th Floor  
 New York, NY 10016  
 T +1 (212) 448-5125  
 E [aidsvaccine@adarc.org](mailto:aidsvaccine@adarc.org)  
 I [www.adarc.org](http://www.adarc.org)

**Columbia University**  
 Division of Infectious Diseases  
 PH8-101  
 630 West 168th Street  
 New York, NY 10032  
 T +1 (212) 305-2201

**Project Achieve - Bronx**  
 391 East 149th Street  
 Suite #405  
 Bronx, NY 10455  
 T +1 (800) 973-3312 or  
 +1 (718) 402-0743  
 I [www.projectachieve.org](http://www.projectachieve.org)

**UNITED STATES** (continued)

**Project Achieve - Union Square**  
853 Broadway, Suite 1111  
New York, NY 10003  
T +1 (212) 388-0008  
I [www.projectachieve.org](http://www.projectachieve.org)

**University of Rochester -  
Medical Center**  
Infectious Diseases, Box 689  
601 Elmwood Avenue  
Rochester, NY 14642-0002  
T +1 (585) 756-2DAY  
E [hvtu\\_cer@urmc.rochester.edu](mailto:hvtu_cer@urmc.rochester.edu)  
I [www.stronghealth.com/services/  
medicine/infectiousdiseases/  
hivtrials/index.cfm](http://www.stronghealth.com/services/medicine/infectiousdiseases/hivtrials/index.cfm)

**Miriam Hospital**  
164 Summit Avenue  
Fain Building, Room 389  
Providence, RI 02906  
T +1 (866) STOP-HIV [or]  
+1 (401) 793-4932  
I [www.lifespan.org/partners/tmh](http://www.lifespan.org/partners/tmh)

**Vanderbilt University**  
Room AA0232B MCN  
1161 - 21st Avenue South  
Nashville, TN 37232-2582  
T +1 (615) 322-HOPE [or]  
+1 (888) 559-HOPE  
I [www.hivvaccineresearch.com](http://www.hivvaccineresearch.com)

**Fred Hutchinson  
Cancer Research Center**  
University of Washington Vaccine  
Trials Unit  
Cabrini Medical Tower  
901 Boren Avenue, Suite 1320  
Seattle, WA 98104  
T +1 (206) 667-2300  
I [www.seattlehivvaccines.org](http://www.seattlehivvaccines.org)

**ZAMBIA**

**Zambia-Emory HIV Research  
Project (ZERHRP)**  
112 Vubu Road, Emmasdale  
P/Bag 891  
Lusaka

**ZEHRP-Copperbelt**  
75 Kuomboka Drive  
Kitwe  
  
22 Lupili Road  
Ndola

**Home office:**

**Rwanda-Zambia HIV Research Group**  
Emory University  
Rollins School of Public Health  
Dept. of International Health  
1518 Clifton Road NE, Suite 764  
Atlanta, GA 30322  
T +1 (404) 727-7883  
F +1 (404) 727-4590  
E [sallen5@sph.emory.edu](mailto:sallen5@sph.emory.edu)

**PHARMACEUTICAL and BIOTECHNOLOGY COMPANIES  
DEVELOPING, TESTING and/or MANUFACTURING AIDS VACCINES**

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**ABL**

**Advanced BioScience  
Laboratories, Inc.**  
5510 Nicholson Lane  
Kensington, Maryland 20895-1078  
USA  
T +1 (301) 816-5225  
I [www.ablinc.com](http://www.ablinc.com)

**ALPHAVAX**

**AlphaVax Human Vaccines Inc.**  
PO Box 110307  
2 Triangle Drive  
Research Triangle Park, NC 27709-  
0307  
USA  
T +1 (919) 595-0400  
F +1 (919) 595-0401  
I [www.alphavax.com](http://www.alphavax.com)

**AVANT**

**AVANT Immunotherapeutics, Inc.**  
119 Fourth Avenue  
Needham, Massachusetts 02494-2725  
USA  
T +1 (781) 433-0771  
F +1 (781) 433-0262  
I [www.avantimmune.com](http://www.avantimmune.com)

**AVENTIS**

see **Sanofi Pasteur**  
(formerly Aventis Pasteur)

**CHIRON**

Chiron Corporation  
4560 Horton Street  
Emeryville, CA 94608-2916  
USA  
T +1 (510) 655-8730  
F +1 (510) 655-9910  
I [www.chiron.com](http://www.chiron.com)

**COBRA**

**COBRA Biomufacturing Plc**  
Stephenson Building  
The Science Park  
Keele  
ST5 5SP  
UK  
T +44 (17) 8271 4181  
F +44 (17) 8271 4168  
I [www.cobrabio.com](http://www.cobrabio.com)

**EPIMMUNE**

**Epimmune, Inc.**  
5820 Nancy Ridge Drive  
San Diego, California 92121  
USA  
T +1 (858) 860-2500  
F +1 (858) 860-2600  
I [www.epimmune.com/templates/home.cfm](http://www.epimmune.com/templates/home.cfm)

**EXCELL**

**Excell Biotech**  
15 Morgan  
USA  
T +1 (800) 424-6101  
F +1 (949) 421-2539 or 2675  
E [info@qbiogene.com](mailto:info@qbiogene.com)  
I [www.qbiogene.com/business/divisions/excell.shtml](http://www.qbiogene.com/business/divisions/excell.shtml)

**GENVEC**

**GenVec, Inc.**  
65 West Watkins Mill Road  
Gaithersburg, MD 20878  
USA  
T +1 (240) 632-0740  
F +1 (240) 632-0735  
I [www.genvec.com](http://www.genvec.com)

## **GEOVAX**

### **GeoVax**

1256 Briarcliff Road  
Atlanta, Georgia 30306  
USA  
T +1 (404) 727-0971

## **GSK**

### **GlaxoSmithKline plc**

980 Great West Road  
Brentford  
Middlesex  
TW8 9GS  
UK  
T +44 (20) 8990 9000

### **GlaxoSmithKline plc**

5 Moore Drive  
PO Box 13398  
Research Triangle Park, NC 27709  
USA  
T +1 (888) 825-5249  
I <http://us.gsk.com>

## **IDT**

### **Impfstoffwerk Dessau-Tornau GmbH**

Streetzer Weg 15a  
D-06862 Rodleben/Tornau  
Germany  
T +49 (3 49 01) 885-0  
F +49 (3 49 01) 885-323  
I [www.idt-direct.de](http://www.idt-direct.de)

## **MERCK**

### **Merck Research Laboratories**

Merck & Co., Inc.  
One Merck Drive  
PO Box 100  
Whitehouse Station, NJ 08889-0100  
USA  
T +1 (908) 423-1000  
I [www.merck.com](http://www.merck.com)

## **SANOFI**

### **Sanofi-Pasteur SA**

**(formerly Aventis Pasteur)**  
World Headquarters  
2, Avenue Pont Pasteur  
F-69367 Lyon CÃ©dex 7  
France  
T +33 (4) 37.37.01.00  
I [www.sanofipasteur.us](http://www.sanofipasteur.us)

## **TARGETED GENETICS**

### **Targeted Genetics Corporation**

1100 Olive Way; Suite 100  
Seattle, WA 98101  
USA  
T +1 (206) 623-7612  
F +1 (206) 223-0288  
I [www.targetedgenetics.com](http://www.targetedgenetics.com)

## **THERION**

### **Therion Biologics Corporation**

76 Rogers Street  
Cambridge, MA 02142-1119  
USA  
T +1 (617) 475-7500  
F +1 (617) 475-7501  
I [www.therionbio.com](http://www.therionbio.com)

## **VICAL**

### **Vical Inc.**

10390 Pacific Center Court  
San Diego, California 92121-4340  
USA  
T +1 (858) 646-1100  
F +1 (858) 646-1150  
I [www.vical.com](http://www.vical.com)

## **WYETH**

### **Wyeth Worldwide Headquarters**

5 Giralda Farms  
Madison, NJ 07940  
USA  
I [www.wyeth.com](http://www.wyeth.com)

## ADVOCACY, EDUCATION and RESEARCH SUPPORT

---

### AFAO

#### **Australian Federation of AIDS Organisations**

*Main nongovernmental organization representing Australia's community-based response to HIV/AIDS. Emphasizes education, policy, advocacy and international projects in treatment and prevention (including vaccines).*

PO Box 51  
Newtown NSW 2042  
Australia  
T +61 (2) 9557 9399  
F +61 (2) 9557 9867  
E [aquan@afao.org.au](mailto:aquan@afao.org.au)  
I [www.afao.org.au](http://www.afao.org.au)

### AEGIS

#### **AIDS Education Global Information System**

*A comprehensive online knowledge base covering the history, prevention and treatment of HIV/AIDS; searchable by keyword. Also available: HIV/AIDS-specific publications, HIV/AIDS news from sources around the world (including daily summaries of AIDS coverage) and reference materials.*

E [help@aegis.com](mailto:help@aegis.com) [or] [comments@aegis.com](mailto:comments@aegis.com)  
I [www.aegis.com](http://www.aegis.com)

### AIDES

*One of Europe's largest community-based organizations against HIV/AIDS, with a focus on support for HIV-positive people, education and advocacy (including vaccine issues) and community mobilization. Publishes a French language quarterly newsletter.*

Tour Essor  
14, rue Scandicci  
93508 Panitn Cedex  
France  
T +33 (1) 41.83.46.46  
F +33 (1) 41.83.46.49  
E [communications@aides.org](mailto:communications@aides.org) [or] [aides@aides.org](mailto:aides@aides.org)  
I [www.aides.org](http://www.aides.org) (French)

English:

I [www.aides.org/sites/aides/?cmd=indep&num\\_alpha=introducing](http://www.aides.org/sites/aides/?cmd=indep&num_alpha=introducing)

### AVAC

#### **AIDS Vaccine Advocacy Coalition**

*Community organization focused on accelerating vaccine development and delivery through independent analysis, policy advocacy, public education and community mobilization. Maintains the AIDS Vaccine Clearinghouse, a collection of information on AIDS vaccines. (For more, see page 343).*

101 West 23rd St. #2227  
New York, NY 10011  
USA  
T +1 (212) 367-1279  
F +1 (646) 365-3452  
E [avac@avac.org](mailto:avac@avac.org)  
I [www.avac.org](http://www.avac.org)

AIDS Vaccine Clearinghouse:

I [www.aidsvaccineclearinghouse.org](http://www.aidsvaccineclearinghouse.org)

## AAVP

### **African AIDS Vaccine Programme**

*Advocates for and supports African contributions to global AIDS vaccine development effort, through work in science, policy, ethics and resource mobilization.*

Interim Secretariat:  
WHO-UNAIDS HIV Vaccine Initiative  
Vaccines and Biologicals  
World Health Organization (WHO)  
20 Avenue Appia  
1211 Geneva 27  
Switzerland  
T +41 (22) 791 43 95  
F +41 (22) 791 48 60  
I [www.who.int/vaccine\\_research/diseases/hiv/aavp/en](http://www.who.int/vaccine_research/diseases/hiv/aavp/en)

## BMGF

### **Bill & Melinda Gates Foundation**

*Supports AIDS vaccine development work; provides interim home base and support for the Global HIV/AIDS Vaccine Enterprise.*

PO Box 23350  
Seattle, WA 98102  
USA  
T +1 (206) 709-3100  
E [info@gatesfoundation.org](mailto:info@gatesfoundation.org)  
I [www.gatesfoundation.org](http://www.gatesfoundation.org)

## CDC

### **Centers for Disease Control and Prevention HIV Vaccine Unit (US)**

*Epidemiological, social/behavioral research relevant to AIDS vaccine development and testing; clinical trials, building infrastructure.*

HIV Vaccine Unit  
Epidemiology Branch  
Div. of HIV/AIDS Prevention  
National Center for HIV, STD and TB Prevention  
Centers for Disease Control and Prevention  
Mail Stop E-49  
Atlanta, Georgia 30333  
USA  
T +1 (301) 519-0459  
I [www.cdc.gov/hiv/vaccine/hivvu.htm](http://www.cdc.gov/hiv/vaccine/hivvu.htm)

## GIV

### **Grupo de Incentivo**

*Helps affected communities establish and maintain treatment and prevention services; advocacy. Publishes a Portuguese-language newsletter (Boletim Vacinas) on AIDS vaccines, with a searchable archive on its website.*

Rua Capitão Cavalcante  
145 - Vila Mariana  
São Paulo  
CEP 04017-000  
Brazil  
T/F 5084-6397 [or] 5084-0255  
I [www.giv.org.br](http://www.giv.org.br)

**gTt**

**Grupo de Trabajo sobre Tratamientos del VIH**

*Spain's main HIV/AIDS NGO (non-governmental organization). Provides news and medical information on HIV/AIDS and AIDS vaccine information in Spanish; works in advocacy and education and publishes Lo+Positivo, a bi-monthly newsletter.*

GTT  
c/Sardenya, 259 3<sup>o</sup> 4<sup>a</sup>  
08013 Barcelona  
Spain  
T +34 (93) 208 08 45  
F +34 (93) 207 00 63  
E [contact@gtt-vih.org](mailto:contact@gtt-vih.org)  
I [www.gtt-vih.org](http://www.gtt-vih.org)

**HVTN**

**HIV Vaccine Trials Network**

*As part of clinical trials work, supports CABs at domestic and international trial sites; publishes the CAB Bulletin newsletter and maintains information on HVTN-supported clinical trials.*

HIV Vaccine Trials Network  
1100 Fairview Avenue North, LE-500  
Seattle, WA 98109-1024  
USA  
T +1 (206) 667-6705  
E [info@hvtn.org](mailto:info@hvtn.org)  
I [www.hvtn.org](http://www.hvtn.org)

HVTN newsletter:  
I [www.hvtn.org/community/bulletin.html](http://www.hvtn.org/community/bulletin.html)

*Bimonthly newsletter on community activities at HVTN sites and trial-related issues relevant to CABs.*

The Pipeline Project:  
I <http://chi.ucsf.edu/vaccines>  
*Collaboration of the UCSF Center for HIV Information and the HIV Vaccine Trials Network. Information on preventive AIDS vaccine trials sponsored by the US National Institute of Allergy and Infectious Diseases (NIAID)/Division of AIDS (DAIDS).*

**IAVI**

**International AIDS Vaccine Initiative**

*Works in vaccine development, policy and advocacy; publishes two newsletters on AIDS vaccines and maintains a searchable database of vaccine clinical trials.*

New York office:  
110 William Street, Floor 27  
New York, NY 10038-3901  
USA  
T +1 (212) 847-1111  
F +1 (212) 847-1112  
I [www.iavi.org](http://www.iavi.org)

IAVI Report and VAX newsletters:  
I [www.iavireportonline.org](http://www.iavireportonline.org)  
*The IAVI Report, published bimonthly, covers research and development, clinical trials and policy. VAX, published monthly, has less technical articles on the same areas; available in English, French, Spanish, German and Portuguese.*

AIDS vaccine clinical trials database:  
I [www.iavireport.org/trialsdb](http://www.iavireport.org/trialsdb)

**ICASO**

**International Council of AIDS Service Organizations**

*Global network of non-governmental and community-based organizations (CBOs). Works to mobilize and advocate for communities affected by HIV/AIDS, and to help strengthen local CBOs. Secretariats in five geographic regions and a central secretariat in Canada.*

65 Wellesley St. E., Suite 403  
Toronto, Ontario  
Canada M4Y 1G7  
T +1 (416) 921-0018  
F +1 (416) 921-9979  
I [www.icaso.org](http://www.icaso.org)

## KFF

### **The Henry J. Kaiser Foundation**

*Non-profit foundation focused on health care. Information and daily news bulletin summarizing press coverage of HIV/AIDS global issues.*

2400 Sand Hill Road  
Menlo Park, CA 94025  
USA  
T +1 (650) 854-9400  
F +1 (650) 854-4800  
I [www.kff.org](http://www.kff.org)

## NAT

### **National AIDS Trust (UK)**

*UK's leading HIV/AIDS policy development and advocacy organization. Works domestically and internationally for policies to enhance prevention efforts, improve access to treatment, challenge HIV stigma and discrimination and engage political leaders in fighting AIDS.*

New City Cloisters  
196 Old Street  
London  
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## WHO-UNAIDS

### **WHO-UNAIDS**

#### **HIV Vaccine Initiative (HVI)**

*Joint activity of the World Health Organization (WHO) and the Joint United Nations Programme on HIV/AIDS (UNAIDS). Promotes development, facilitates evaluation and addresses future access to preventive HIV vaccines, focused on developing countries.*

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## about avac

the AIDS VACCINE ADVOCACY COALITION

**AVAC** Founded in 1995, the AIDS Vaccine Advocacy Coalition (AVAC) is a non-profit, community- and consumer-based organization that uses public education, policy analysis, advocacy and community mobilization to accelerate the ethical development and global delivery of vaccines against HIV/AIDS.

AVAC's AIDS Vaccine Clearinghouse is an on-line compendium of materials on AIDS vaccine research and a link to other people and organizations concerned about AIDS vaccine advocacy, research, and global delivery. The Clearinghouse welcomes submissions of documents, translations, announcements and events.

The *AIDS Vaccine Handbook*, AIDS Vaccine Clearinghouse, and our continuous policy analysis, advocacy, education and outreach work are made possible by the dedicated labor of AVAC advocates and support from the Bill & Melinda Gates Foundation, Broadway Cares/Equity Fights AIDS, the Ford Foundation, the Gill Foundation, the International AIDS Vaccine Initiative, the Overbrook Foundation, Until There's a Cure Foundation, the WHO/UNAIDS HIV Vaccine Initiative, and many generous individuals who have become AVAC Members.

AVAC is an IRS-certified 501(c)3 tax exempt organization and your donations are tax deductible. For more information, or to contribute to the work of AVAC, please contact:

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## glossary

of AIDS VACCINE-RELATED TERMS

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Adapted from glossaries compiled by the AIDS Education Global Information System (AEGIS) and the US National Institute of Allergy and Infectious Diseases (NIAID) and from articles in this volume.

### **adenovirus**

A family of viruses that causes the common cold. Researchers are using weakened versions of certain adenovirus strains to make vectors that carry HIV genes into cells, as a way of developing a live vector vaccine against AIDS.

### **adenovirus-associated vector**

#### **AAV**

A harmless virus which is different than adenovirus but is also being used to make live vector vaccines against AIDS.

### **adjuvant**

A substance sometimes included in a vaccine formulation to enhance or modify its immune-stimulating properties.

### **adverse event**

#### **adverse reaction**

An undesirable change in the body of a clinical trial participant. Follow-up work is needed to determine whether or not an adverse event is due to the study vaccine or drug. Adverse events most commonly associated with vaccines include a sore arm after injection or a slight fever.

### **AIDSVAX**

The experimental AIDS vaccine made from the HIV envelope (specifically, the gp120 subunit) by VaxGen, a California-based biotechnology company. It was the first AIDS vaccine to be tested for efficacy (in two separate trials), but was found not to work.

### **antibody**

Infection-fighting protein in the blood, which recognizes and helps destroy pathogens such as bacteria and viruses. Antibodies are made by white blood cells called B-cells in response to stimulation by foreign molecules (antigens). Each antibody binds only to the specific antigen that stimulated its production.

### **antigen**

Any substance recognized by the cells or antibodies of the immune system.

### **antigen-presenting cell**

A cell (such as a macrophage) that “presents” foreign antigens to the immune system, thereby alerting the body to the presence of an invader. It does this by chopping the antigens into small pieces, which it then displays on its cell surface.

### **arm**

In a clinical trial, a group of participants who receive the same treatment. For example, vaccine trials usually have a vaccine arm and a placebo (control) arm.

### **antiretroviral therapy**

#### **ARV**

Treatment for HIV infection that uses medicines which work by killing or suppressing the virus.

### **attenuated**

Weakened. Attenuated viruses are often used as vaccines because they no longer cause disease but may still stimulate a strong immune response. Examples include vaccines against measles, mumps and rubella, as well as oral vaccines against polio.

## **b**

### **B-cell**

#### **B-lymphocyte**

A subset of white blood cells in the immune system, derived from bone marrow and spleen. B-cells develop into plasma cells, which produce antibodies.

### **binding antibody**

An antibody that attaches to some part of a pathogen, such as HIV. Binding antibodies may or may not lead to elimination of the pathogen.

### **blinded study**

Clinical trial in which the participants do not know until the study ends whether they received the experimental product or a placebo. Blinding is done to reduce bias in clinical trials. (see also **double-blinded study**)

**booster**

A second or subsequent vaccine dose given after the primary dose, to enhance immune responses. A booster vaccine may or may not be the same as the primary vaccine. (see **prime-boost**)

**bridging study**

A clinical trial that tests the safety of a vaccine and its ability to induce specific types of immune responses in a particular population, often as an indirect way of gathering information about efficacy. For example, if a vaccine is shown to protect adults against a certain disease and bridging studies show that it induces similar immune responses in adults and adolescents, then the vaccine may be assumed to work for adolescents as well.

**C** **canarypox**

A virus that infects birds but is harmless and unable to grow in people. It was one of the first vectors used to make live vector AIDS vaccines, several of which have been tested in clinical trials. An efficacy trial that combines a canarypox-based vaccine and a protein subunit vaccine against AIDS is taking place in Thailand.

**CD4+ T-cell****CD4+ T-lymphocyte; helper T-cell**

Immune cell that carries a protein called CD4 on its surface. CD4+ T-cells help orchestrate the activities of the immune system, such as turning antibody production on and off and activating killer T-cells. They are also the main targets of HIV infection. In HIV-infected people, the number of CD4+ T-cells in a blood sample is often used as a measure of the health of the immune system.

**CD8+ T-cell****CD8+ T-lymphocyte**

Immune cell that carries a protein called CD8 on its surface. One important class of CD8+ T-cells, called cytotoxic T-cells (CTLs) or killer T-cells, destroys host cells that are infected with viruses or bacteria. CTLs are thought to play an important role in immunity to HIV.

**cell-mediated immunity**also **cellular immunity**

Branch of the immune system consisting mainly of T-cells (such as helper T-cells and killer T-cells) and macrophages. Its role is to recognize and destroy cells infected with pathogens so that the pathogen cannot multiply and then spread to other cells.

**cell membrane**

The envelope surrounding a cell and enclosing its contents.

**challenge experiment**

The deliberate exposure of an immunized animal to an infectious agent. Challenge experiments are never done in humans in HIV vaccine research.

**circulating recombinant form**

**CRF**

In HIV, a mosaic virus that contains pieces from HIV of at least two different clades and has entered the pool of HIV strains circulating in a population.

**clade**

also **subtype**

A group of genetically related HIV isolates. There are two major groups of HIV-1 isolates, called M and O. Group M consists of nine clades, A through K (with no E or I).

**clinical trial**

**clinical study**

A highly organized procedure for determining the safety and/or effectiveness of a new medicine, vaccine or therapy, by giving the new agent to participants under strictly controlled conditions. In many clinical trials, new agents are tested against older ones and/or an inactive substance (placebo). The clinical trials process includes Phase I, II and III studies and Phase IV post-marketing evaluation.

**cocktail vaccine**

A vaccine produced from two or more viral (or bacterial) strains.

**cohort**

A group of individuals who share certain characteristics and are followed over time in a research study. For example, a Phase I vaccine trial typically enrolls a cohort at low risk for HIV.

**Community Advisory Board**

**CAB**

A group of community members (e.g., people with HIV/AIDS, care providers, advocates) who provide recommendations regarding the conduct of clinical research in their community.

**conserved sequence**

A genetic sequence which changes very little from one individual (or HIV isolate) to another.

**control**

see **placebo** and **placebo-controlled clinical trial**

**correlates of protection****correlates of immunity**

The specific immune responses that are associated with protection from a certain infection. The precise correlates of immunity for HIV are unknown.

**cross-reaction**

Immune response to an antigen other than that which originally stimulated the response.

**CTL****cytotoxic T-lymphocyte;****killer T-cell**

see **CD8+ T-cell**

**cytokine**

A group of proteins produced by different subsets of white blood cells and that act as messengers between cells. A cytokine can stimulate or inhibit the activity of a specific type of immune cell. Some are being tested as immune modulators in vaccine formulations.

**d** **diversity**

see **genetic diversity**

**DNA****deoxyribonucleic acid**

The genetic material of all living things except for RNA-carrying viruses, such as HIV. DNA is a double-stranded, twisted molecular chain found within each cell and is made from four chemical building blocks. It contains the information needed for cells to produce proteins, which in turn enable cells to reproduce and carry out their functions.

**DNA vaccine**

An experimental vaccine technology in which one or more genes encoding specific antigen(s) are injected into the body, where they hopefully produce these antigen(s) in the recipient and trigger immune responses. The technology is potentially promising for producing simple, inexpensive and heat-stable vaccines.

**double-blinded study**

Clinical trial in which neither the study staff nor the participants know which participants received the experimental product and which ones received placebo. Double-blind studies are thought to produce the most objective results.

## **e**fficacy

In vaccine research, the ability of a vaccine to protect people against a specific infection or disease as measured in a clinical trial. A vaccine can be tested for efficacy in Phase III (or Phase IIb) trials once Phase I and II trials show it to be safe and to induce immune responses.

### **env** (gene)

#### **Env** (protein)

HIV gene encoding gp160, a glycoprotein molecule that gets split into the Env proteins gp120 and gp41.

### **envelope**

The outer surface of a virus, also called the coat. Not all viruses have an envelope. In the case of HIV, the envelope contains two viral proteins (gp120 and gp41), which are initially produced as a single, larger protein (gp160) that is then cleaved in two.

### **enzyme**

A protein that accelerates the rate of a specific chemical reaction, without itself being altered. For example, HIV makes an enzyme called reverse transcriptase, which copies the viral genetic material (RNA) into DNA during the HIV replication cycle.

### **epitope**

Within an antigen, a specific site that stimulates an immune response.

### **exposed seronegative**

#### **ESN**

A rare individual who remains uninfected despite being repeatedly exposed to HIV. Researchers have found ESNs among sex workers, uninfected partners of HIV-infected people and breastfed infants of HIV-positive mothers.

## **f**owlpox

A virus belonging to the same bird virus family as MVA and canarypox, and which has also been used to make live vector vaccines against AIDS.

## **g**ag (gene)

#### **Gag** (protein)

HIV gene encoding p55, a protein which is then cleaved into several smaller Gag proteins (called p17, p24, p7 and p6) that form the inner (viral) core surrounding the genetic material.

### **genetic diversity**

#### also **genetic variation**

The degree of difference in DNA sequence among individual organisms, groups, or members of a population. HIV is the most genetically diverse viral pathogen known.

**genetic engineering**

The set of laboratory methods for isolating a specific gene from the genome of an organism and splicing it to other pieces of DNA so it can be propagated in the laboratory and made to produce protein—for example, insulin (for use as a medication), or an HIV protein for a vaccine.

**genome**

The complete genetic material in an individual cell or virus. The HIV genome contains 9 genes; the human genome contains between 20,000 and 25,000 genes.

**glycoprotein****gp**

A protein molecule with one or more branches of sugar molecules attached to it. Many cellular and viral proteins are glycoproteins, including the outer coat proteins of HIV. A number after the gp (e.g., gp160, gp120, gp41) is the molecular weight of the glycoprotein.

**glycoprotein 41****gp41**

A glycoprotein embedded in the outer envelope of HIV, and which functions to anchor gp120. gp41 plays a key role in helping HIV enter CD4+ T-cells during infection by facilitating the fusion of the viral and cell membranes.

**glycoprotein 120****gp120**

The glycoprotein on the outer surface of the HIV envelope. It is widely used in experimental AIDS vaccines because the outer envelope is the first part of the virus “seen” by the immune system. When HIV in the blood infects a cell, gp120 binds to the host cell membrane, which initiates its entry into the cell.

**Good Clinical Practice****GCP**

An internationally accepted set of principles and procedures for conducting research involving humans in a manner that is ethical, scientifically sound and properly documented. It covers elements such as the responsibilities of trial investigators, sponsors and Institutional Review Boards (IRBs) and the information that must be included in the trial protocol and informed consent documents.

**Good Manufacturing Practice****GMP**

An internationally accepted set of procedures and standards for how experimental products (i.e., those being evaluated in clinical trials) should be manufactured, handled and stored.

**h** **helper T-cell**  
see **CD4+ T-cell**

### **herpes simplex virus**

#### **HSV**

A group of viruses that cause blisters. HSV type 1 usually causes blisters on the lips or mouth (called cold sores or fever sores); HSV type 2 is sexually transmitted and causes lesions in the genital and anal areas. A vaccine against HSV type 2 is in development.

### **human papilloma virus**

#### **HPV**

A group of sexually transmitted viruses that cause cervical cancer in women. Candidate vaccines against HPV are now in clinical testing.

### **humoral immunity**

Branch of the immune system consisting mainly of B-cells. Its role is to make proteins called antibodies, which recognize and help destroy pathogens in the blood. Certain antibodies can block (or neutralize) pathogens in the blood, thereby preventing infection of the body's cells.

### **i**mmune deficiency

The inability of certain parts of the immune system to function as they should, thus making people susceptible to diseases they would not ordinarily develop.

### **immune escape**

Process in which a microorganism undergoes changes (usually mutation) that alter it enough so it becomes unrecognizable to the immune system, which in turn allows it to evade the immune response.

### **immune response**

The body's reaction to foreign molecules (antigens). This response may neutralize or eliminate the antigens and provide immunity.

### **immunity**

Natural or vaccine-induced resistance to a specific disease. Immunity may be partial or complete, specific or nonspecific, long-lasting or temporary.

### **immunization**

The process of inducing immunity to a specific pathogen by giving someone a vaccine, which "teaches" the immune system to recognize the pathogen and thus prevents illness upon exposure to the same pathogen at a later time.

### **immunogen**

Any substance capable of provoking an immune response.

**immunogenicity**

The strength and breadth of an immune response induced by a given antigen. The more immunogenic an antigen is, the better an immune response it induces.

**immunological memory**

The ability of the immune system to “recall” specific antigens it encountered during an earlier infection and then to quickly mobilize an immune response. Long-term memory is the basis of protection against re-occurrence of a disease.

**incidence**

The rate of new infections in a specific population over a certain period of time, usually one year.

**inclusion/exclusion criteria**

The medical and social characteristics which qualify or disqualify a person for participation in a clinical trial. For example, some trials may include people between 18 and 49 years of age and exclude those with chronic liver disease or certain drug allergies, or who are pregnant.

**informed consent**

An agreement signed by all volunteers participating in a clinical research study, indicating their understanding of: 1) why the research is being done; 2) what researchers hope to learn; 3) what will be done during the trial, and for how long; 4) what risks are involved; 5) what, if any, benefits can be expected from the trial; 6) what other interventions are available; and 7) the participant's right to leave the trial at any time.

**Institutional Review Board****IRB**

Committee of physicians, statisticians, community representatives and others. Its role is to review all proposed clinical trial protocols at a specific institution before a study can begin. IRBs are responsible for ensuring that a trial is done in a sound, ethical manner and that the rights of participants are adequately protected.

**isolate**

A particular strain of HIV-1 from an infected person (primary isolate) or a cultured cell line (laboratory isolate), defined by its genetic sequence. Isolates of HIV from different people are almost never identical.

**k** **killer T-cell**  
see **CD8+ T-cell**

**l** **lipopeptide**  
Segment of a protein, linked to a fatty molecule called a lipid. Lipopeptides derived from HIV are being used to make candidate AIDS vaccines. The presence of the lipid seems to enhance immunogenicity.

### **live vector vaccine**

A vaccine made by using a virus or bacteria that cannot cause disease to transport genes from HIV (or some other pathogen) into the body. Once inside cells, the genes produce proteins, which in turn induce immune responses. This type of vaccine often generates cellular immunity. Examples include vaccines based on adenovirus vectors or the bacteria *Salmonella*.

### **long-term non-progressor**

#### **LTNP**

An HIV-infected person who remains free of AIDS symptoms (such as immune system decline or opportunistic diseases) for an unusually long period of time. LTNP typically have strong CD8+ T-cell responses, minimal lymph node damage and a relatively low viral load. About 10% of HIV-positive people seem to be LTNP.

### **lymphocyte**

The diverse set of white blood cells that carry out many of the functions of the immune system. There are two main types: B-cells (responsible for producing antibodies) and T-cells (which orchestrate the overall immune response and destroy cells infected with pathogen, among their many roles).

### **m** **macrophage**

A type of large immune cell that devours invading pathogens and other intruders. Macrophages then stimulate other immune cells to respond by “presenting” them with small pieces of the invaders. They can also harbor large quantities of HIV without being killed, and may therefore act as viral reservoirs. (see **antigen-presenting cell**)

### **membrane**

see **cell membrane**

### **memory cell**

Long-lived subsets of T-cells and B-cells that have been exposed to specific antigens and can “recall” them (and then quickly mobilize an immune response) if that antigen is encountered again during a later infection, even many years later.

**microbicide**

Product (such as a gel or cream) that could be applied topically to genital surfaces to prevent or reduce the transmission of HIV and other disease-causing organisms during sexual intercourse.

Microbicides might also take other forms, including films, suppositories, and slow-releasing sponges or vaginal rings. The development of safe and effective microbicides could help many women substantially lower their risk of HIV infection.

**MTCT**

**mother-to-child transmission**

Transmission of HIV from a mother to her unborn child in the womb or during birth, or to infants via breast milk.

**mucosal immunity**

Immune responses localized in the body's mucous membranes. Mucosal immunity depends on immune cells and antibodies in the linings of the reproductive and gastrointestinal tracts and other moist body surfaces exposed to the outside world, which are entry points for many types of infection (including HIV).

**mucosal tissues**

Moist layer of tissue lining the body's openings, including the genital/urinary and anal tracts, the gut and the respiratory tract.

**mutation**

A genetic change that is inherited in all progeny of the mutated cell or virus.

**MVA**

**modified vaccinia Ankara**

A harmless relative of the smallpox (vaccinia) virus, and which has been engineered for use as a live vector vaccine. MVA is used in several AIDS vaccine candidates now in development.

n *nef* (gene)

**Nef** (protein)

HIV gene encoding Nef, a regulatory protein. Nef is not essential for the virus but helps regulate viral replication.

**neutralizing antibody**

**NAb**

An antibody that docks onto a pathogen and prevents it from infecting cells. Inducing strong, broad neutralizing antibodies is thought to be key for the development of AIDS vaccines that block infection, but has so far not been achieved.

### **NYVAC**

A member of the poxvirus family (like MVA and canarypox) and also used as a live viral vector for AIDS vaccines.

### **Oligomer**

A protein with two or more separate subunits that associate with one another. In HIV virions, the envelope protein is an oligomer with three gp120 subunits.

### **Pathogen**

Disease-causing microorganism.

### **peptide**

Segment of a protein molecule. In AIDS vaccine development, peptides are used both in testing immune responses to HIV and as components of vaccines.

### **Phase I trial**

Controlled clinical study done in the first stage of evaluating experimental products (such as medicines or vaccines) in humans. Phase I vaccine trials test a product's safety in humans, including any side effects seen with increasing doses, and usually also monitor whether it induces immune responses. They typically involve a small number of healthy volunteers (usually 60 or less); for AIDS vaccine studies, the volunteers are generally selected to be at low-risk for HIV infection.

### **Phase II trial**

Controlled clinical study done in the second stage of testing new products in humans. Phase II vaccine trials extend the safety data gathered during Phase I, collect more information on the product's ability to induce immune responses and determine the best dose and immunization schedule. They enroll up to several hundred volunteers, sometimes including people with characteristics similar to potential participants of a future efficacy (Phase III) trial. For example, Phase II studies of candidate AIDS vaccines may enroll some volunteers at higher risk for HIV infection.

### **Phase IIb (proof of concept) trial**

Controlled clinical study designed to look for preliminary evidence of a product's efficacy. Phase IIb studies are smaller, shorter and less expensive than a full-fledged Phase III study.

**Phase III (efficacy) trial**

Large, controlled clinical study done in the third stage of human testing, to determine if and how well a vaccine or medicine works. For AIDS vaccines, efficacy is measured by looking for prevention of HIV infection, reduction in the severity of disease and/or delay of disease onset. A Phase III study should gather sufficient data so that the product can be approved for licensure if it is found to work. This usually includes further safety data for evaluating the overall benefit-risk relationship of the vaccine. Phase III trials of AIDS vaccines will typically need to enroll at least several thousand volunteers.

**Phase IV trial**

Study conducted after a vaccine or medicine has been licensed, to determine its true effectiveness under “real world” conditions of use rather than under the controlled conditions of a clinical trial. For vaccines, they measure properties such as how long protection lasts and look for any late-emerging or very rare side effects. A Phase IV study can involve up to many thousands of people.

**placebo**

Inactive substance given to some study participants, while others receive the test substance (e.g., a vaccine). Placebos provide a basis for comparison.

**placebo-controlled clinical trial**

Clinical trial in which one group of volunteers is given the experimental vaccine or medicine, and the other is given a placebo. The results of the two groups are then compared to see if the experimental product was effective relative to the placebo.

**plasmid**

Small, independently-replicating piece of bacterial DNA. Researchers often use harmless plasmids to transfer foreign genes into cells, for example, in making DNA vaccines.

***pol***

The HIV gene that encodes a group of enzymes needed for viral replication (called protease, integrase and reverse transcriptase).

**prevalence**

The proportion of people with a particular disease or infection in a given population.

**prime-boost**

An approach to inducing immunity, which uses a first vaccine dose (prime) to induce an initial set of immune responses, followed by a second type of vaccine (booster) to amplify the desired responses. A prime-boost combination may induce different types of immune responses and/or better overall responses than those seen with only one type of vaccine.

***pro*** (gene)

**protease** (protein)

HIV gene encoding an enzyme called a protease, which cleaves proteins. HIV protease cuts the large precursor proteins produced from viral RNA into their component parts, which are then assembled into new viral particles.

**protein**

A large, varied class of molecules that are the main constituents of cells and carry out the different functions that cells (or viruses) perform. For example, they can be structural proteins (like the HIV envelope protein), regulatory proteins (like cytokines) that control the activity of other proteins, antibody molecules or enzymes (like HIV reverse transcriptase). Proteins are long chains made from twenty different building blocks called amino acids. Each protein has a unique, genetically defined amino acid sequence which determines its three-dimensional shape and its function.

**protein subunit vaccine**

A vaccine containing a protein from the virus or other pathogen. Subunit vaccines produced by genetic engineering are called recombinant subunit vaccines.

**protocol**

The detailed plan for a clinical trial, outlining its purpose, methodologies (such as vaccine dosages, routes of administration, length of study, eligibility criteria) and other aspects of trial design.

**pseudovirion**

Non-infectious particle resembling a complete virus but lacking its genetic material and one or more viral proteins, so it is unable to replicate. AIDS vaccines based on pseudovirions are in pre-clinical development.

**r**andomized trial

A clinical study in which participants are assigned by chance to one of the arms of the trial, such as the vaccine and the placebo arms. Randomization minimizes the differences among groups by equally distributing people with particular characteristics among all the trial arms.

**recombinant protein subunit vaccine**

Vaccine produced by genetic engineering and consisting of a particular protein from the virus or other pathogen.

**recombination**

A process that increases genetic diversity by exchanging pieces of the genomes from two viral strains, or two individual organisms. All types of living things undergo recombination.

**regulatory proteins**

Proteins that help regulate viral replication in infected cells, in contrast to the structural proteins that make up the virus particle itself. The HIV regulatory proteins are encoded by the *nef*, *rev*, *tat* and *vpr* genes.

**replication**

For HIV, the process of multiplying, or producing progeny particles. Replication involves many steps: copying the genetic material, producing all the different proteins that go into a virus particle, and then assembling the particles. Like all viruses, HIV cannot replicate on its own but must be inside a host cell so it can co-opt some of the host's cellular machinery.

**retrovirus**

A group of viruses (including HIV) that carries its genetic material in the form of RNA rather than DNA, unlike all other living things. These viruses contain an enzyme called reverse transcriptase which transcribes RNA into DNA—a process opposite that which normally occurs in animals and plants (where DNA is made into RNA), and which accounts for the prefix “retro.”

### **reverse transcriptase**

#### **RT**

An enzyme found only in retroviruses, which copies RNA into DNA. It is encoded by the HIV RT gene.

#### **RNA**

##### **ribonucleic acid**

A single-stranded molecule composed of chemical building blocks similar to those DNA. RNA is the sole genetic material of retroviruses and an intermediary in making proteins in all living things.

### **S**eroconversion

The development of antibodies to a particular antigen, due either to an infection or a vaccine that exposes the immune system to the antigen. When people develop antibodies to HIV, they "seroconvert" from antibody-negative (**seronegative**) to antibody-positive (**seropositive**).

#### **SHIV**

##### **simian/human immunodeficiency virus**

A genetically engineered hybrid virus with an HIV envelope and SIV core. SHIV is widely used for testing vaccines in monkeys.

#### **SIV**

##### **simian immunodeficiency virus**

An HIV-like virus that infects monkeys and causes an AIDS-like disease in some species.

### **statistical significance**

The probability that an observed difference (for example, between two arms of a vaccine trial) is due to the vaccine rather than to chance alone. This probability is determined by using statistical tests to evaluate the trial data. In general, results of a clinical trial are considered statistically significant if there is a less than a 5% probability that the observed difference would occur by chance alone.

### **sterilizing immunity**

An immune response that prevents the establishment of any detectable infection.

#### **strain**

A genetically distinct isolate of HIV. HIV is very heterogeneous, and two isolates are rarely ever the same. When HIV is isolated from an individual and studied in the lab, it is given its own unique identifier, or strain name.

### **structural proteins**

In HIV, the proteins that make up the virus particle. These include Env and Gag proteins.

### **subunit vaccine**

see **protein subunit vaccine**

**subtype**

also **clade**

A classification scheme based on genetic differences among isolates.

**T-cell**

One of two main types of lymphocytes critical to the immune system. It includes CD4+ and CD8+ T-cells. The "T" stands for the thymus, where T-cells mature.

**Variation**

see **genetic variation**

**vector**

Bacteria or virus that does not cause disease in humans and can be used in making vaccines, by virtue of its ability to transfer foreign genes into cells. Different vectors have different properties, which in turn determine how suitable they are for particular vaccine strategies or designs. (see **live vector vaccine**)

**VEE virus****Venezuelan Equine Encephalitis**

A virus causing disease in horses, and which has been engineered to make a non-pathogenic live vector vaccine against AIDS. VEE targets mainly a class of antigen-presenting cells called dendritic cells.

**viral core**

The internal portion of the HIV particle, containing proteins encoded by the *gag* gene.

**viral load**

The amount of HIV in the blood. Viral load is used as an indicator of the state of an HIV infection.

**viral replication**

see **replication**

**viral vector vaccine**

A type of live vector vaccine, made by using a virus that cannot cause disease to transport HIV or other foreign genes into the body. This type of vaccine often generates cellular immunity and is widely used in AIDS vaccine development.

**viremia**

The presence of virus in the bloodstream.

**virion**

A complete virus particle outside a host cell.

**virus**

A microorganism composed of a piece of genetic material (RNA or DNA) surrounded by a protein coat. To replicate, a virus must infect a cell and direct its cellular machinery to produce new viruses.



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# aids vaccine handbook

edited by PATRICIA KAHN

**THE NUMBER OF PEOPLE LIVING WITH HIV/AIDS** now approaches 40 million worldwide, and over 3 million people died of AIDS in 2004 alone. Each day 14,000 more men, women and children get infected—95% of them in developing countries. Beyond the health emergency this represents, AIDS is also a global development crisis that devastates families, villages, cities and countries.

We need to do much more with today's prevention methods, and we must expand access to treatment. But no viral disease has ever been controlled without a vaccine.

*A safe, effective AIDS vaccine remains the world's best chance to curb the relentless epidemic.*

As the global effort to develop an AIDS vaccine scales up and expands internationally, the need for information geared to lay readers is growing quickly. This is especially true for the clinical testing of candidate vaccines, which cannot be achieved without tens (and ultimately hundreds) of thousands of volunteers from at-risk communities around the world. It also applies to the advocates, policy makers, community health workers and others interested in AIDS vaccine development.

The *AIDS Vaccine Handbook* aims to meet these needs. Through a collection of easy-to-read, lively essays, it gives an overview of clinical trials and the questions they raise for communities, of the key scientific, advocacy and policy issues and challenges, and of the experiences gained and lessons learned so far. The essays are written by people involved in this work in many different ways in many parts of the world.

In the time it took to read this, 15 more people became infected with HIV/AIDS.

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