



# HIV vaccines moving forward

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We are pleased to present this issue of *Current Opinion on HIV/AIDS* devoted to HIV vaccines. Despite progress made in treatment, pre-exposure prophylaxis, circumcision, and novel formulations of antiviral compounds, an HIV vaccine is still needed to achieve lasting control the HIV pandemic. Developing a safe and effective HIV vaccine is a global research priority. The collective works present many of the broad approaches directed toward establishing what constitutes effective immunity to HIV and how to go about evaluating vaccines that achieve protective immunity.

As editors, we were excited that so many of our eminent colleagues were willing to share their insights and views on this critically important topic. A sense of optimism comes through the articles herein. Thoughtful and interesting theories and experimental results are outlined toward solving many of the obstacles facing the field. Much of the full gamut of HIV vaccine science is discussed, from immune responses, novel concepts, preclinical work, through to efficacy trials. We believe there will be something here for all readers interested in HIV vaccinology.

The HIV vaccine field has been reenergized with the initiation of multiple efficacy trials in recent months and more in the wings. Efficacy trials represent the end result of large bodies of basic research, preclinical research, and early phase clinical trials. Important, sometimes hard, lessons have been learned from all efficacy trials to date. We look forward to the successful completion of the new efficacy trials and their eagerly anticipated results and implications.

Preclinical macaque models are beautifully outlined by Del Prete and colleagues (pp. 546–554). The advantages, disadvantages, and choices faced by researchers are presented very well. Acute HIV infection is studied both by Robb and colleagues (pp. 555–560), with recent data from key human cohorts summarized, as well as by Lewis (pp. 561–568), who focused on key innate and functional antibody responses in this critical window.

Broadly neutralizing antibody approaches are thoughtfully presented by Penny Moore and colleagues (pp. 569–575) and a brief review of the human and animal data of broadly neutralizing antibody infusion are presented by Pantaleo and Levy

(pp. 576–584). The implications of recent advances in adjuvants on humoral immunity are nicely presented by Alving and colleagues (pp. 585–592).

Some of the innovative approaches to induce various aspects of T-cell immunity are reviewed by Streeck (pp. 593–600). The work leading up (and obstacles) of the next generation of early phase clinical trials is very well discussed by Safrit and Koff (pp. 601–606).

Recent results and implications from HIV vaccine efficacy trials are reviewed by Excler and Michael (pp. 607–613). Marovich and Russell (pp. 614–619) discuss in detail efficacy trials planned of poxvirus prime/protein boost combinations. Innovative aspects of the design and analysis of future efficacy trials is carefully laid out by Gilbert and colleagues (pp. 620–627). Finally, Pantaleo and Levy (pp. 576–584) review the challenges and novel therapies being considered in the development of therapeutic vaccines.

Overall, this issue encompasses many of the key questions facing the HIV vaccine field in 2016 and we hope readers will consider how to incorporate advances in related fields to their own studies of HIV vaccines. Collaborating on multipronged approaches to preventing HIV with vaccines and other technologies are likely to yield the most rapid advances.

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