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# Innate and adaptive immune correlates of vaccine-induced control of mucosal transmission of SIV in macaques

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Most vaccine studies have focused on adjuvants just to enhance the adaptive immune response, our recent SIV-macaque study provides the first evidence directly correlating vaccine adjuvant-induced innate immunity with protection against SIV infection, and demonstrates that this innate mechanism, APOBEC3G, is surprisingly long lasting. It also identifies an adaptive correlate of protection, namely SIV-specific polyfunctional CD8 T cells, and shows an unexpected threshold effect for protection that may explain previous results such as seen in the failed STEP vaccine phase III trial. We propose that the combination of innate immunity that acts immediately, giving time for adaptive immunity to be recalled, and the appropriate type of adaptive T cell immunity, may allow a mucosal AIDS vaccine to abort a nascent mucosal HIV/SIV infection before it becomes established. As 85% of HIV transmission is mucosal, this strategy could have a major impact on disease transmission. In addition, we show synergy of TLR agonists and the cytokine IL-15 for both upregulation of APOBEC3G and upregulation of the IL-15Ra, which is necessary for trans-presentation of the IL-15. Overall this study has important implications for design of a mucosal AIDS vaccine.

## Biography

Yongjun Sui has completed her Ph.D from Beijing Institute of Basic Medical Sciences and postdoctoral studies from Kansas University Medical Center, Pittsburgh University. She is a scientist from NCI, NIH. She has published more than 26 papers in reputed journals.