HIV GRAND ROUNDS

"Towards a COVID-19 vaccine to protect against SARS-CoV-2 variants and animal sarbecoviruses without updating"

To combat future SARS-CoV-2 variants and spillovers of SARS-like betacoronaviruses (sarbecoviruses) threatening global health, we designed mosaic nanoparticles that present randomly arranged sarbecovirus spike receptor-binding domains (RBDs) to elicit antibodies against conserved epitopes. We compared immune responses elicited by mosaic-8 (SARS-CoV-2 and seven animal sarbecoviruses) and homotypic (only SARS-CoV-2 RBD) nanoparticles in mice and macaques. Mosaic-8 immunization showed equivalent neutralization of SARS-CoV-2 variants, including Omicrons, and protected from SARS-CoV-2 and SARS-CoV challenges, whereas homotypic SARS-CoV-2 immunization protected only from SARS-CoV-2 challenge. Epitope mapping of antisera demonstrated increased targeting of conserved epitopes after mosaic-8 compared with homotypic nanoparticle immunization. Together, these results suggest that mosaic-8 RBD nanoparticles could protect against SARS-CoV-2 variants and future sarbecovirus spillovers.

Pamela Bjorkman, PhD

- David Baltimore Professor of Biology and Biological Engineering; Merkin Institute Professor
- Caltech

Event Information

- Virtual Lecture
- Once you register, you will be e-mailed a Zoom Link

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JAN 17, 2023

11:00am - 12:00pm PST

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Questions/Comments:
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