



Surface-based cell-free platform to characterize host-pathogen interactions

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The immune system is one of the most complex systems of the human body. At its core, it uses protein-protein interactions to achieve the emergent property of differentiating self from other. Synthetic biology aims to implement biological functions of natural living systems, to test hypothesis and to expand them beyond their current limits. Here, we mimic key protein-protein interactions and functions of the immune system using a cell-free surface-based approach. We use innovative silicon chips to parallelize antigen display and antibody epitope screening. Linear DNA sequences are immobilized in micrometer-sized carved compartments. Phenotype and genotype are linked in every compartment by localized on-chip expression and capture of antigens. Up to a hundred antigen sequences can be parallelly displayed on a chip, and be assessed for antibody binding with high specificity. This platform mimics and extends the function of antigen-presenting cells, allowing us to interrogate protein-protein interaction between host receptor, pathogenic antigen and immune system.

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MPI-DS, Maria Goeppert seminar room (0.79)
and Zoom Meeting ID: 959 2774 3389
Passcode: 651129, [direct link](#)



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