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## **【923】 From ligand-receptor interactions to antimicrobial drug development: application of a biosensor based on surface waves**

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Optical biosensors based on photonic crystal surface waves offer a possibility to study binding interactions with living cells, overcoming a problem of a low penetration depth into the cells. Moreover, simultaneous excitation of s- and p-polarized surface waves is realized here, allowing for unambiguous separation of surface and volume contributions to the signal. In this work, we developed functionalization to attach bacteria and performed real-time experiments on antibody binding. Binding of monoclonal antibodies against lipopolysaccharides was analyzed by a nonlinear regression, resulting in the dissociation constant  $K_D = 6.2 \pm 3.4$  nM. To our knowledge, this is the first demonstration of antibody binding kinetics to living bacteria by a label-free optical biosensor.

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