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[932] Fast drug susceptibility testing with nanomechanical sensors

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An infection with a pathogen is especially dangerous in cases of developed resistance to currently available drugs. Depending on the infecting agent, the onset of disease may progress quickly. Culture-based conventional susceptibility assays take days and weeks to complete, in order to choose the right drug and dose. Our work considers the nanomechanical sensor that responds to miniscule fluctuations exerted by living cells. The sensor is able to discriminate metabolically active bacteria from antibiotic-inactivated or dead ones. The technique is based on optical lever detection and a simple inexpensive prototype device has been developed. The proposed technique has been tested on numerous bacterial strains. Working principle of the technique and test cases with bacterial samples will be presented.

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