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IIT-D team develops a unique drug testing platform

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This new platform has been designed to help in early detection of the presence of bacteria and carrying out drug susceptibility testing within a short time period.



A team of scientists from the Centre for Biomedical Engineering at Indian Institute of Technology (IIT) Delhi has used a novel method to culture bacteria and determine its growth at much lower concentration in relatively less time, four–six hours.

This new platform has been designed to help in early detection of the presence of bacteria and carrying out drug susceptibility testing within a short time period. Currently available clinical methods require more than 10 hours to culture and observe growth of pathogenic bacteria and a higher bacterial concentration for laboratory confirmation.

The team has prepared alginate microgels that encapsulate *E. coli* bacteria and carbon dots. The microgels were found to support bacterial growth and colony formation, and the pH changes in response to bacterial growth. The team used the platform to test for antibiotic sensitivity by treating *E. coli* with ampicillin drug of different concentrations.

The scientists propose that the platform can help in simultaneously studying resistance to different drugs, combination of drugs and resistance to different concentrations of drugs.