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IIT researchers develop a novel drug delivery system

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A new antibiotic drug-delivery system that improves the efficacy of drugs thereby reducing the dosage used for treating bacterial infections has been tested in a lab by researchers at the Indian Institute of Technology (IIT) Delhi. A peptide, which has not been approved for clinical use, bound to gold nanoparticles was able to kill *E. coli* and *Salmonella typhi* more efficiently at lower dosages.

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The peptide called sushi-peptide bound to nanoparticles was able to kill 50% of bacteria at much lower concentration while the free peptide's antibacterial activity was not significant at the same concentration.

Besides normal cells infected with bacteria, the peptide bound to nanoparticles will be particularly useful in the case of cancer patients suffering from bacterial infections. The nanoconjugate is not toxic to cancer cells and targets only the bacteria.

The team plans to further study if the nanoconjugates can be used on antibiotic-resistant strains and also understand the fate of gold nanoparticles used for making the nanoconjugates. The researchers feel that instead of gold nanoparticle, biodegradable polymers can be used. The only condition is that the peptide should be able to interact with the bacterial membrane. A few more studies have to be carried out before the nanoconjugate can be tested on animals.