# **Role of Bacteria-Bots in Cancer Theranostics**

Sawna Roy1 , Siddartha Sankar Ghosh1,2 and Arun Chattopadhyay1,3

1Centre for Nanotechnology, IIT Guwahati, India

2Department of Biosciences and Bio Engineering, IIT Guwahati, India

3Department of Chemistry, IIT Guwahati, India

E-mail: roy.sawna@iitg.ac.in

**Abstract**

Cancer is a complex disease that involves uncontrolled growth and spread of cells, leading to detachment from their original site and invasion of other organs. Traditional treatments have limitations, including drug resistance, low specificity, and treatment failure. Recent research has focused on developing bacterial microbots that can target cancer cells and deliver drugs more effectively. These "bacterial bots" can be created by attaching nanoparticles to bacterial cells. They offer benefits such as minimal immune stimulation, maximum drug payload, improved efficacy with combination therapy, and other potential applications in bioimaging and biosensing. This research has the potential to improve cancer therapy and offer new possibilities for medical treatment.

**Keywords:** Bacterial bot, Cancer**,** Nanoparticles, Cancer theranostics