

## Viewing microbiota as a potential therapeutic target for cancer therapy

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**Statement of the Problem:** Can microbiota be seen as a potential therapeutic target in the host for cancer therapy?

Microbiota influences cancer directly- via proteins ([metabolites and toxins](#)), induces apoptosis via signaling pathways, stimulates the immune system, and is responsible for various risk factors associated with cancers, for example, pancreatic cancer. The microbiome can modulate the immune system and hence, cause carcinogenesis of different organs distant from the gut possibly because of increased systemic inflammatory response. Altered gut microbiota is associated with resistance to chemo drugs or immune checkpoint inhibitors ([ICIs](#)), whereas supplementation of distinct [bacterial species](#) restores responses to the anticancer drugs.

In pancreas cancer, if certain bacteria are removed, macrophages and T cells in the tumor get activated. Hence, to target cancer, the “microbiome”, should be addressed as a therapeutic target. This can be done by genetically engineering the bacteria to carry genes whose products are involved in inherent [metabolic pathways](#) related to cancer. Then multiple ways to deliver an array of therapeutic proteins and drug compounds to cancer cells could be explored. Further, alteration of the microbiome indirectly using probiotics, fecal microbiota transplantation ([FMT](#)), diet alteration, etc. would also pave the way for cancer therapy

**Key words:** *Allanblackia Floribunda*, Suppositories, Paracetamol, Diclofenac

### Biography

Arpita is an early-stage academic researcher. She has expertise in molecular biology techniques. Academic and research experience to date along with participation in various national and international conferences has provided her strong understanding of how the wet lab work is translated into a medically relevant form. Currently, she is working on a collaborative project between India and the UK entitled “ResPharm” which is an initiative to tackle Antimicrobial Resistance on a global front. The enteric lab is set in a clinical setting where she has gained expertise in the processing of samples (water, soil, stool, semen, urine). Further, she is training in bioinformatics and data analysis to be able to put shreds of evidence into perspective through the window frame of science.

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