

NOVEL PROBIOTIC- A COMMENSAL ENERGY BOOSTER

S. Saran Aswathaman

Research Scholar, Directly Affiliated to Dr. M. G. R University, Coimbatore, Tamil Nadu, India

ABSTRACT

About 38% of world population will be affected by cancer at some point in their lifetime. People affected by cancer experience muscle weakness and physical stress because their intake of food is reduced and they don't get proper nutrition and energy from their food. They also suffer from nausea and vomiting.

This study is to increase the energy uptake from the same amount of food, by giving a PROBIOTIC.

KEYWORDS: BACTERIODETES, *Bacteroides Intestinalis*, *Bacteroides ovatus*, Xylan & Xylose

Article History

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INTRODUCTION

It is estimated that 20 – 60g of indigestible plant polysaccharides such as cellulose, pectin, and xylan reach the colon each day and most of them are excreted unchanged.

Bacteroids comes under the phylum BACTERIODETES. They are commensals and animal symbionts which colonizes the GIT of humans. Their main biological function is to degrade high molecular organic matter such as cellulose, pectin, and xylan to monosaccharides. They can degrade this organic matter because they possess a large number of genes that encode CAZ enzymes.

Bacteroidetes phylum comprises four classes: *Bacteroidia*, *Flavobacteria*, *Sphingobacteria*, and *Cytophagia*, representing around 7000 different species. Among them *Bacteroides intestinalis*, *Bacteroides ovatus* are able to degrade cellulose, pectin, and xylans into monosaccharides. But these bacteria are present in marginal number in GIT.

Since the above mentioned organic matter is resistant to human digestive enzymes, a probiotic which degrades this organic matter to monosaccharides will be a good alternative.

OBJECTIVE

To increase the energy uptake in cancer patients from the same amount of food by ingesting *Bacteroides intestinalis*, *Bacteroides ovatus* as PROBIOTIC

METHODOLOGY

Culture

- *Bacteroides intestinalis* DSM 17393
- *Bacteroides ovatus* ATCC 8483

Media: Nutrient broth

Materials: Cellulose, Pectin, and Xylans

PROCEDURE

- Cellulose, pectin, and xylans will be taken in nutrient broth.
- An overnight grown culture will be added to the nutrient broth, which this organic matter.
- It is standardized to 0.5 McFarland standard.
- PH and temperature will be adjusted to GIT environment.
- XYLOSE is the metabolic product obtained after degradation of this organic matter.
- XYLOSE is quantified using HPLC method.
- A control is used without cellulose source.

RESULTS

Bacteroides intestinalis, *Bacteroides ovatus* can be given as PROBIOTIC to cancer patients, to improve their energy uptake and their quality of life.

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