



# Dr Georges MOUTON MD

Functional Medicine

## QUOTE GM #23

2018-04-02

Title

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## DO YOU UNDERSTAND WHAT MICROBIOME MEANS? YOU HAVE TO!

Semin Cancer Biol. 2018 Feb 6. pii: S1044-579X(17)30146-3. doi: 10.1016/j.semcancer.2018.02.003. [Epub ahead of print]

### Understanding the microbiome: Emerging biomarkers for exploiting the microbiota for personalized medicine against cancer.

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#### Abstract

The human body is a home to more than 1 trillion microbes with a diverse variety of commensal microbes that play a crucial role towards the health of the individual. These microbes occupy different habitats such as gut, skin, vagina, oral etc. Not only the types and abundance of microbes are different in different organs, but also these may differ in different individuals. The genome of these microbiota and their ecosystem constitute to form a microbiome. Factors such as diet, environment, host genetics etc. may be the reason behind the wide microbial diversity. A number of studies performed on human microbiome have revealed that microbiota present in healthy and diseased individuals are distinct. Altered microbiome is many a times the reason behind the overexpression of genes which may cause complex diseases including cancer. Manipulation of the human microbiome can be done by microbial supplements such as probiotics or synbiotics, diet or prebiotics and microbial suppression strategies using antibiotics. Recent advances in genome sequencing technologies and metagenomic analysis provide us the broader understanding of these commensal microbes and highlighting the distinctive features of microbiome during healthy and disease states. Molecular pathological epidemiology (MPE) studies have been very helpful in providing insights into the pathological process behind disease evolution and progression by determining the specific etiological factors. New emerging field of research targets the microbiome for therapeutic purposes by which personalized medicines can be made for treating various types of tumors. Screening programmes might be helpful in identifying patients who are at the verge of developing cancer and in delivering appropriate approaches according to individual risk modes so that disease could be prevented.

**KEYWORDS:** Biomarker; Cancer; Flora; Microbiome; Personalized medicine

PMID: 29425888 DOI: 10.1016/j.semcancer.2018.02.003

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*"A number of studies performed on human microbiome have revealed that microbiota present in healthy and diseased individuals are distinct. Altered microbiome is many a times the reason behind the overexpression of genes which may cause complex diseases including cancer. Manipulation of the human microbiome can be done by microbial supplements such as **probiotics** or **synbiotics**, **diet** or **prebiotics** and microbial suppression strategies using **antibiotics**. Recent advances in genome sequencing technologies and metagenomic analysis provide us the broader understanding of these commensal microbes and highlighting the distinctive features of **microbiome** during healthy and disease states."*