Role of intestinal microbiota in cardio-metabolic diseases

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Stellingen behorende bij het proefschrift

Role of Intestinal Microbiota in Cardio-Metabolic Diseases

1. Experimental bone marrow transplantation is a widely accepted and used method for assessing the role of immune related genes in mouse models of disease. However, this method by itself causes major metabolic changes, which could affect the experimental results and interpretation of the data. (this thesis)
2. The majority of worldwide intestinal microbiome research is focused on intestinal bacteria. However, taking only the intestinal bacteria into consideration, is conducting research with a blind spot (this thesis).
3. Besides studying the metabolic- and immune-modulatory properties of intestinal bacterial species, more research emphasis should be placed on understanding their survival niche (this thesis).
4. Despite the widespread use of 16s rRNA sequencing in microbiome research, it should be realized that this method is sensitive to methodological bias. (this thesis)
5. Despite claims that numerous foods benefit the gut microbiota, a healthy microbiome remains to be unequivocally defined. There is not a single unique optimal gut microbiota composition since it is different for each individual. (Rinninella et al., Microorganisms, 2019, 7, 14).
6. Since the first observations of bacteria, our understanding of the bacterial cell has been on a micrometer scale. *Candidatus Thiomargarita magnifica* challenges our concept of a bacterial cell in terms of cell size and structural complexity. (Volland et al., Science, 2022, 376, 1453-1458)
7. The widespread use of 'statistical significance' as a license for making a claim of a scientific finding leads to considerable distortion of the scientific process. (Amrhein et. Al. Peer J. 2017, 5, e3544)
8. The word probiotic comes from Latin, its literal translation is ‘for life’. The literal translation of this word indicates that probiotics should be consumed lifelong and are not aimed to serve as a short-term therapy.
9. The use of antibiotics in microbiome research is like the use of Big Bertha (German “Dicke Bertha”) in the First World War. In order to target specific bacterial species, cruise missiles and preferably drones, should still be invented in this research field.
10. Publication pressure is a perverse incentive in science that works against sustainability. (inspired by article published in ‘Algemeen Dagblad’, 2014, 'Perverse publicatiedruk wetenschap aan banden gelegd’).
11. PhD students are trained and prepared for an academic career. However, according to research conducted by the Rathenau Institute in 2018, 70% of Dutch PhD students starts a career outside academia after graduation. Therefore, PhD programs should also offer training in non-scientific soft skills such as communication, leadership and teamwork. (Koier, E. en J. de Jonge (2018). ‘De zin van promoveren – Loopbanen en arbeidsmarktperspectieven van gepromoveerden.’ Den Haag: Rathenau Institute)