Microbiome-mediated colonization resistance: defense against enteropathogens and multi-drug resistant organisms

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Stellingen behorend bij het proefschrift getiteld:

Microbiome-mediated colonization resistance:
defense against enteropathogens and multi-drug resistant organisms

1. Restoration of colonization resistance is dependent on bacterial consortia with complementary functions, not on a single bacterial species (this thesis, Chapter 2).
2. Manual substrate annotations are required for informative grouping at higher functional levels and subsequent statistical enrichment testing for CAZymes (this thesis, adapted from Chapter 5).
3. Conflicting results from studies associating the gut microbiome with a disease of interest are suggestive of the presence of confounding factors (this thesis, adapted from Chapter 9).
4. Sharing of sequence and metadata is required to conduct higher-quality meta-analyses and has proven to be crucial for establishing robust disease-specific microbial signatures (this thesis, Chapter 10).
5. Computational biology excels at distilling huge amounts of complex data into hypotheses testable in the wet lab, thus, shaping and directing experimental follow-up (based on Markowetz F, PLoS Biol 2017).
6. Data scientists are wrongly perceived as supporting analysts or even 'research parasites' but not as independent investigators driving biological discoveries (based on Yang, Trends Mol Med 2020).
7. The administration of *Lactobacillus rhamnosus* strain GG (LGG) probiotics to hospitalized patients has risks and no benefits (based on Yelin et al., Nat Med 2019).
8. It remains extremely challenging to fully understand the individual role of any bacterium in a complex microbial community like the gut microbiome (based on Cani, Gut 2018).
9. For a simple board game chess has a surprisingly big influence on scientific thought, in particular on the fields of cognitive science and computer science (based on Vaci et al., Behav Res 2017).
10. In both chess and science, great creative minds think like artists, but work like accountants (based on New York Times column, David Brooks, 2014).
11. With an increasing importance being put on collaborative and interdisciplinary research, shared first authorships should be seen as a positive development and be acknowledged as such by graduate schools and funding bodies.

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