# Modification of white adipose tissue biology and metabolic profiles in humans by nutritional bio-actives

# Propositions

Belonging to the thesis

## Modification of white adipose tissue biology and metabolic profiles in humans by nutritional bio-actives

1. Identification of nutritional bio-actives that modify lipid droplet formation in adipocytes requires validated, fast, and quantitative *in-vitro* methods. *(this thesis)*

2. Effects of nutritional bio-actives on in-vitro adipogenesis and lipogenesis may depend on the conditions of *in-vitro* differentiation. *(this thesis)*

3. Despite the concept that combinations of nutritional bio-actives enhance adipocyte function more beneficially by affecting different physiological pathways, it seems that resveratrol is the key driver improving functional features in human adipocytes *in-vitro*. *(this thesis)*

4. 12 weeks supplementation with the polyphenols EGCG and resveratrol increased the oxidative metabolism in skeletal muscle and preserved fat oxidation and plasma TAG levels, but induced no changes in tissue-specific insulin sensitivity and lipolysis. *(this thesis)*

5. Polyphenolic bio-actives did not affect adipocyte size, body fat mass and plasma cytokines levels, although gene sets related to adipogenesis, apoptosis and the adipose tissue immune response were suppressed after 12 weeks supplementation. *(this thesis)*

6. The activity of bio-actives on physiological responses needs to be evaluated in a context-dependent way since a given molecule can exhibit pleiotropic effects in distinct cell and tissue compartments. *(Schwager et al. BMC Complementary & Alternative Medicine (2017) 17:309)*

7. The problem with nutrient-by-nutrient nutrition science is that it takes the nutrient out of the context of the food, food out of the context of the diet and diet out of the context of the lifestyle. *(Marion Nestle (NYU), AZQuotes.com. Retrieved November 10, 2017)*

8. Eigentlich weiss man nur, wenn man wenig weiss; mit dem Wissen wächst der Zweifel. (We know accurately only when we know little; with knowledge, doubt increases.) *(J.W. von Goethe)*

9. How human are we, when the number of microbes inhabiting us is comparable to the number of cells forming our body and when the microbiota's complexity may exceed that of certain organs and its diversity seems essential for the functioning of our organism?

10. There's one issue that will define the contours of this century more dramatically than any other, and that is the urgent threat of a changing climate. *(Barack Obama, COP21, 2015)*

11. There must be something rotten in the very core of a social system which increases its wealth without diminishing its misery. *(Karl Marx)*

Ines Warnke, March 16th, 2018