

WP2

Short term impact on food behaviour, physiology and health

Aim: To evaluate the acute (short, 1 day) & repeated (medium-term, 14 day) effects of up to 10 new & emerging S&SEs & blends on metabolic, sensory, neuro-behavioural & microbiota-mediated processes involved in satiety, consumer preference & health. Mechanistic & safety aspects of new & emerging S&SEs & blends will also be examined.

Approach:

- *Phase 1 (coordinated trial):* 3 repeated measures studies will examine the impact of 5 model beverages containing innovative blends of S&SEs on glycaemic response, feeding behaviour and blood biochemistry, across UK, Denmark & Spain, with total of 162 participants. The two most promising blends will be taken forward to Phase 2.
- *Phase 2 (multi-centre trial):* 2 cross-over studies in 5 solid food matrices will be conducted in a total of 240 participants across 4 countries (UK, Denmark, Spain, France) to evaluate the effects of two pre-selected S&SEs blends on gut-brain & cephalic response biomarkers, blood biochemistry (metabolism and safety), microbiota (diversity & species ratio), brain activity, energy compensation, meal eating behaviour, expected satiety, reward, cravings & food choice.
- *Other measures* (in coordination with other WPs): Microbiological food safety, gastro intestinal side effects, consumer perspectives and taste receptor polymorphisms.

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Phase 1



Blend selection

Testing of 5 S&SE blends (**WP1**) in liquid matrix

Acute (1 d) effects of S&SE in liquids

Glycaemic and lipaemic response
Feeding behaviour (subjective appetite, food preference, cravings, reward, 24h food intake)
Health effects (rebound hunger, G.I. and metabolic side effects)

Phase 2



Blend testing

Testing of 2 S&SE blends (**Phase 1**) in 5 solid matrices

Acute & short-term (14 d) effect of S&SE in solids

Glycaemic and lipaemic response
Feeding behaviour (as for Phase 1 but 8h food intake)
Gut-brain & cephalic response biomarkers
Brain activity
Meal micro-structure
Health effects (as for Phase 1 + microbiota changes)
Microbiological safety

Methodological platform (WP2/3)

Sweet receptor polymorphism prevalence (WP1)

Consumer perspectives/drivers (WP6)

Urine biomarker validation (WP4)