

Develop your weight management product

NIZO food research is your partner in developing tasteful weight management products with enhanced satiation or satiety effects. NIZO food research can help in demonstrating the effects of specific satiating ingredients or products and understand their mechanism of action.



The way we work

NIZO food research offers concepts for the development of new (multistage / long lasting) satiating products by using unique expertise combining nutrition physiology and food intake regulation knowledge with flavour and texture expertise.

Satiating ingredients can be incorporated into new product formulations on laboratory scale and pilot plant scale (suitable for food grade clinical trials).

In-vivo models

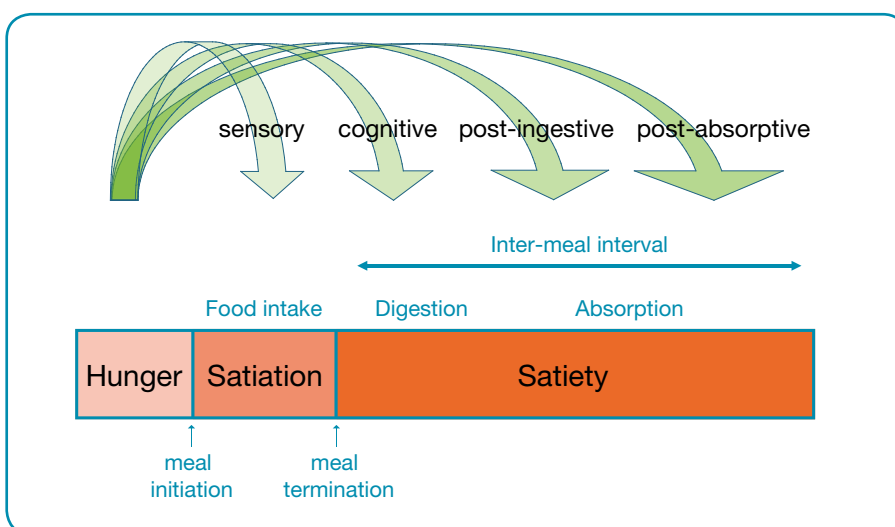
In-vivo models can be used to demonstrate efficacy of your ingredient or product and to gain insight in the underlying working mechanism. A wide array of biomarkers can be measured including blood levels of satiety hormones and their gene expression in gastro-intestinal tissue. Moreover, in these strictly controlled experiments, food intake, body weight and fat accumulation can be monitored over time.

Human intervention trials

In human intervention trials a double-blind, placebo-controlled, randomized cross-over design can be used. Appetite responses of the subjects are recorded using visual analogue scales (VAS). Satiety hormones and energy intake are measured simultaneously.

Your benefits

- Development of tasteful concept foods with enhanced satiation or satiety signals;
- Support of health claims using in-vitro, in-vivo and human models;
- Proof of efficacy of specific satiating ingredients or products;
- Mechanistic understanding of the mode of action of a satiating component



*Satiation results in early meal termination.
Satiety leads to a delay in the onset of the next meal.*

Satiation; early meal termination

Sensory triggers

Sensory effects, generated through the smell and taste of food are important factors contributing to meal termination. While active ingredients may induce satiety late after meals, sensory triggers already operating at early stages have a consumer benefit that is immediately noticeable.

Targeting the stomach

To enhance the overall satiating effect of your ingredient/ product, NIZO is capable of engineering protein functionality to enhance gelling capacity in the stomach and resistance to enzymatic degradation. Our expertise in emulsion technology further enables us to identify and design ways to increase foods' effects on satiety.

The NIZO solution to satiation

- Demonstrate satiating effect in a human trial
- Identify olfactory triggers which regulate food intake behavior by using the olfactometer, a unique tool which mimics the release of flavor during food consumption
- SIMPHYD, a unique tool to study protein digestion and gelation in-vitro



Satiety; delay the onset of the next snack/meal

Aim at the small intestine

The small intestinal presence of food, triggers the release of neural, hormonal and metabolic signals that control satiety and food intake by acting on the brain. It is becoming increasingly clear that timing and intensity of satiety signals depend on the structure and composition of the ingested food.

Modulating the microbiota

By fermentation of the food products that have escaped digestion in the upper part of the gastro-intestinal tract, the microbiota may be able to affect energy metabolism. Experience in gut physiology and intestinal microbiology, enables us to elucidate the role of the intestinal microbiota and their fermentation metabolites in energy metabolism.

The NIZO solution to satiety

- Designing foods to optimize satiety responses in desired directions
- Demonstrate satiating effect in an animal and/or human trial
- Measuring digestive and hormonal responses to your ingredients/consumer products of different composition and structure

About NIZO food research

NIZO food research is an independent and one of the most advanced research centres in Europe. We provide industry with solutions they require by developing and applying technologies for innovations in the areas of flavour, texture, health, food safety and process optimisation. The food-grade industrial pilot plant is used for development and testing at industrial level and is available for test productions. The NIZO application centre provides industry with facilities for product development & product oriented research.

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