

## Special Issue

# The Molecular Link Between Nutrition and Obesity

### Message from the Guest Editor

The molecular link between diet and obesity is a complex interaction involving genetic and epigenetic factors, hormonal regulation (insulin, leptin, and ghrelin), adipokines (e.g., adiponectin and resistin), and environmental factors that regulate energy balance and metabolism. Obesity is associated with chronic low-grade inflammation, and the adipose tissue of obese individuals secretes pro-inflammatory cytokines (e.g., TNF- $\alpha$  and IL-6) that may impair insulin signaling and contribute to metabolic dysfunction. In addition, the composition of the gut microbiota may influence dietary energy expenditure, inflammation, and fat accumulation. Together, these mechanisms contribute to the development of obesity. Nutritional interventions targeting these pathways, such as diets low in refined sugars and high in fiber, may help alleviate obesity by modulating these molecular processes .

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### Guest Editor

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