From gut microbiota to host appetite: gut microbiota-derived metabolites as key regulators

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Abstract

The balance between hunger and satiety plays a key role in metabolic health. Specifically, disrupted appetite can lead to eating disorders or obesity. Appetite control is influenced by a complex web of factors - including our gut microbiota. Gut microbiota influence appetite through a variety of mechanisms, including regulating appetite-related hormones such as leptin, ghrelin, and insulin, influencing the immune system and acting directly on hypothalamic neurons. Recently, there has been interest in exploring the gut-microbiota-brain axis in several research fields. Some research has suggested that the gut microbiota can regulate host body weight and even psychiatric disorders, but the effects of gut microbiome interventions have been inconsistent and require more research. Overall, there are many links between gut microbiota and host appetite, but the interaction is complicated by many outside variables, and the precise mechanisms have yet to be fully deciphered. Once understood, these mechanisms could be leveraged to treat metabolic and appetite related disorders.