

Special Issue

Food Flavor Formation Mechanism and Control

Message from the Guest Editors

The contemporary challenge in food flavor science is no longer merely describing formation pathways but achieving predictive control over the entire flavor lifecycle—from precursor reactions to sensory perception. While omics tools collectively provide a comprehensive molecular cartography of flavor compounds and their precursors, a critical research gap exists in effectively fusing this heterogeneous data to construct robust, predictive models. This Special Issue champions the integration of multi-omics technologies with advanced predictive modeling to forecast flavor formation under novel processing conditions and quantify the binding affinity of key aroma compounds with various food matrices. By coupling these analytical techniques with sensory science, this issue aims to elucidate how the entire flavor pathway, from precursor reactions to in-mouth release, is governed by the food matrix. The ultimate goal is to progress from correlation to causation, enabling the de novo design of tailored flavor profiles and food structures. We invite research that uses these integrated approaches to decode the flavor lifecycle, paving the way for targeted and personalized food products.

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About the Journal

Message from the Editor-in-Chief

Foods (ISSN 2304-8158) is an open access and peer reviewed scientific journal that publishes original articles, critical reviews, case reports, and short communications on food science. Articles are released monthly online, with unlimited free access. Currently, *Foods* has been indexed by the Science Citation Index Expanded (SCIE - Web of Science), PubMed, and Scopus. Our aim is to encourage scientists, researchers, and other food professionals to publish their experimental and theoretical results as much detail as possible. We therefore invite you to be one of our authors, and in doing so share your important research findings with the global food science community.

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