



Expanding the scope of *Bioactive Molecules and Pharmaceuticals*

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The launch of *Bioactive Molecules and Pharmaceuticals* in 2023 marked the introduction of a specialized academic platform dedicated to the rapidly advancing interface between molecular bioactivity and pharmaceutical science. The purpose of the journal was to be a venue across disciplines in order to bridge biochemical research, translational biomedical science, and therapeutic innovations.

The launch of the *Bioactive Molecules and Pharmaceuticals* journal in 2023 marked the advent of a specialized academic platform uniquely developed to address the ever-growing research at the intersection of molecular bioactivity and pharmaceutical science. The establishment of this journal bridged varying disciplines ranging from biochemical research, translational biomedical science, and therapeutic innovations into a singular destination.

Scientific publishing, just like science itself, goes through phases of refinement, recalibration, and strategic maturation. While the journal's early development phase resulted in a limited number of publications, this period

provided an opportunity for careful evaluation of the journal's positioning within the increasingly complex and dynamic research landscape. This interval was used productively for conceptual refinement and scope development. The global scientific community has witnessed remarkable growth in research investigating biologically active molecules in the past several years. Advances in analytical technologies, molecular biology, pharmacokinetics, metabolomics, microbiome science, and computational modeling have substantially expanded our understanding of how naturally derived and synthetic bioactive molecules influence physiological systems [1-2]. These developments oftentimes blurred traditional disciplinary boundaries [3]. This has created a compelling need for publication platforms that accommodate integrative and mechanism-driven research.

Scientific publishing, similar to science, undergoes constant iteration, refinement, and progression. Despite the journal's early hallmarks culminating in a limited quantity of publications, this was instrumental in the

development of the journal as it allowed for introspection of its current and future goals in the dynamic field of scientific research and publishing. This period of time facilitated the opportunity for conceptual and strategic evaluation that has informed the journal's subsequent development. Many of these decisions made during this time were in lieu of a global and remarkable shift to emphasize research in biologically active compounds. Advances in molecular biology, pharmacokinetics, metabolomics, microbiome science, and computational modeling have resulted in a profound expansion in the understanding of how naturally derived and synthetic bioactive molecules affect biological systems [1-2]. As such, there were a apparent need for a platform that could host and accommodate the amalgamation of these cross-disciplinary advancements [3].

Biologically active molecules are no longer viewed solely as isolated chemical entities; instead, they are increasingly recognized as dynamic mediators of complex biological processes, with roles in cellular signaling, neuroendocrine regulation, immune modulation, metabolic homeostasis, oxidative stress pathways, and epigenetic mechanisms [4-6]. At the same time, pharmaceutical science has expanded beyond conventional drug development paradigms and has incorporated concepts such as nutraceutical agents, functional ingredients, microbial metabolites, and hybrid therapeutic strategies [7-8].

Biologically active molecules are currently viewed not just as chemical agents but as dynamic players in complex biological processes that play roles in cell signaling, neuroendocrine regulation, immune modulation, metabolic homeostasis, oxidative stress, and epigenetics [4–6]. At the same time, pharmaceutical science has expanded beyond the traditional scope of drug development to include terms such as nutraceuticals, functional ingredients, microbial metabolites, and hybrid approaches [7–8].

In response to these scientific shifts, *Bioactive Molecules and Pharmaceuticals* reaffirms its mission through an expanded and clarified scope designed to reflect modern research priorities. The journal now explicitly welcomes contributions addressing:

- Molecular mechanisms of biologically active molecules
- Pharmacological and pharmacokinetic characterization
- Bioactive molecule interactions with physiological systems
- Neurochemical and neuroendocrine modulation
- Gut–brain, immune, and metabolic regulatory pathways [9-10]
- Translational applications in preventive and therapeutic contexts [11-12]
- Interdisciplinary approaches integrating biology, chemistry, and medicine [1-2]

The journal hopes that this expanded scope of study will recognize that biologically active molecules occupy a unique interdisciplinary space. It intersects traditional pharmacology while extending into areas of preventive medicine, molecular nutrition, microbiome-derived metabolites, and systems biology [13-14]. Physiological modulation, disease prevention, and therapeutic innovation are some areas in which evidence-based approaches can be advanced by this integration. On another note, the journal emphasizes mechanistic clarity and scientific rigor [15]. As contemporary biomedical research increasingly incorporates elements of functional food science such as natural molecules, dietary agents, and microbial metabolites, the need for robust methodological frameworks becomes paramount [16-17]. Claims regarding physiological modulation, therapeutic relevance, or functional activity must be supported by clearly defined molecular mechanisms, validated biomarkers, and reproducible experimental designs in order to be validated.

The journal aspires to expand its scope to recognize that biologically active molecules occupy a unique crossroads between different fields. It extends from traditional pharmacology to preventive medicine, molecular nutrition, microbiome-derived metabolites, and systems biology [13-14]. These areas, such as physiological modulation, preventive medicine, and therapeutic innovation, can benefit from evidence-based strategies as long as this integration is in place. Another call from the journal is for mechanistic clarity and hard science [15]. This follows the idea that, as contemporary biomedical science taps into functional food science, natural molecules, and their metabolites, the need for sound methodological frameworks becomes imperative [16-17]. For any physiological modulation, therapeutic, and functional activity, there must be a clearly defined molecular mechanism in place for such a claim to be considered sound.

The landscape of biomedical science emphasizes the importance of multidimensional research. Modern health challenges, including chronic inflammatory disorders, neurodegenerative diseases, metabolic dysregulation, stress-related conditions, and sleep disturbances, rarely arise from single-pathway dysfunction [18]. Instead, they reflect intricate networks of biochemical, endocrine, neural, and immune interactions. Biologically active molecules represent promising modulators within these networks, provided their effects are examined through integrative, mechanism-oriented methodologies [19-20].

The field of Biomedical sciences emphasize the importance of multidimensional study. Modern health issues, including chronic inflammatory conditions, neurodegenerative diseases, metabolic dysregulation, stress responses, and sleep patterns, are not commonly linked to a single pathway [18]. These conditions present as complex patterns of biochemical, endocrine, neural, and immune processes. Biologically active molecules offer a promising opportunity for modulating these

processes, provided these processes are studied using integrated mechanistic approaches [19–20].

The renewed direction of *Bioactive Molecules and Pharmaceuticals* is therefore grounded in three guiding principles:

Scientific Integration: Encouraging interdisciplinary research that connects molecular, cellular, physiological, and translational domains.

Mechanistic Emphasis: Prioritizing studies that elucidate biological pathways and molecular targets rather than relying solely on observational outcomes [3-4].

Translational Relevance: Supporting research that contributes meaningfully to preventive strategies, therapeutic innovation, and evidence-based applications [11-12].

This editorial transition reflects a broader transformation occurring across scientific publishing. As research domains converge and conceptual frameworks evolve, journals must adapt to serve as accurate reflections of scientific progress [15]. Journals with static scopes risk becoming obsolete as disciplines evolve, while those that adapt can better reflect and support scientific progress.

This broadening of the journal's scope also serves as an invitation to the researchers working at the forefront of biologically-active molecule science. Contributions that challenge traditional disciplinary silos, propose novel mechanistic insights, or advance translational understanding are particularly encouraged to this journal.

This editorial change is a harbinger of a wider shift that is taking place in scientific publishing. As research fields merge and conceptual understanding progresses, scientific journals are forced to change to ensure that they accurately reflect scientific advancement [15].

The expansion of scope for this scientific journal also acts as an invitation to scientists who are leaders in

the field of biologically active molecule science. Submissions that are unorthodox, mechanistic, and/or translational are encouraged for this scientific journal.

Mechanistic Continuum Between Functional Food Science and Pharmacology:

Functional food science and pharmacology share a common mechanistic starting point in the study of biologically active molecules [3]. Both disciplines originate from the investigation of molecular bioactivity, with the aim of understanding how specific compounds interact within physiological systems.

The translational pathway is where the fields primarily diverge. Functional food science typically emphasizes food-based delivery strategies aimed at supporting physiological functions and reducing disease risk, whereas pharmacology prioritizes active pharmaceutical ingredient (API)-centered development directed toward the treatment of disease [15]. These distinct trajectories operate under different dosing paradigms, regulatory frameworks, and evidence thresholds; however, they remain foundationally connected through their shared molecular foundations.

Mechanistic Continuum Between Functional Food Science and Pharmacology: There is a common point of beginning between functional food science and pharmacology, as both involve the study of biologically active molecules and their interactions in the body. The point of beginning is the same in both, as they involve the study of molecular bioactivity, where the focus is the study of the interactions of the body with the compounds.

Although the point of beginning is the same, the routes that they take after the beginning are different, as the focus in functional food science is the delivery of nutrients through food, while in pharmacology, the focus is the delivery of drugs through the use of active

pharmaceutical ingredients, which is done for the treatment of illnesses.

Positioning Within the Scientific Publishing Landscape:

The expanding complexity of biologically active molecule research has given rise to multiple complementary domains of scientific inquiry. While significant overlap exists across disciplines, distinct methodological and conceptual emphases define a field as distinct [3].

Research focusing on clinical outcomes, physiological effects, and health-related applications of bioactive molecules represents an essential and rapidly growing field in pharmacology. Similarly, investigations centered on agricultural systems, soil quality, crop composition, and food-derived bioactives contribute critically to understanding the upstream determinants of molecular functionality.

Bioactive Molecules and Pharmaceuticals is positioned to prioritize the mechanistic and molecular foundations of bioactivity. The journal emphasizes studies that elucidate cellular targets, signaling pathways, receptor interactions, pharmacodynamic behaviors, and pharmacokinetic characteristics of biologically active molecules [4-5].

This distinction is part of a reality within biomedical science: advances in therapeutic innovation and translational application depend fundamentally on rigorous mechanistic understanding. Outcome-driven observations, while valuable, require molecular-level interpretation to achieve reproducibility, scalability, and predictive relevance.

BMP therefore serves as a platform for research that bridges molecular biology, pharmacology, and biochemical sciences, supporting investigations that clarify how biologically active molecules interact with complex biological systems.

This framework recognizes the complementary roles of both clinically oriented and agriculturally-focused

research domains within an integrated scientific continuum.

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