

Editorial



A Journey Forward: Acta Biochimica Iranica's Rebirth and its Impact on the Evolution of Clinical Laboratory Sciences

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On behalf of the IFCC organization, I am delighted to extend my heartfelt congratulations to the Iranian Biochemical Society (IBS) for its illustrious history and commendable plans to relaunch Acta Biochimica Iranica. As a pioneer, the Iranian Biochemical Society was the first society in the Middle East to become a full-fledged national society member of IFCC in the 1960s, standing as the premier and most dynamic society in the region dedicated to advancing biochemical education and research. A significant milestone occurred in 1962 when the IBS initiated the publication of Acta Biochimica Iranica, an international journal that persisted until 1972. This historical endeavor underscores the prominent leadership role the Iranian society undertook in the realm of biochemistry several decades ago and serves as a testament to its esteemed legacy.

Over the last twenty years, I've had the privilege and pleasure of participating in multiple international conferences organized by the Iranian Biochemical Society, where I had the opportunity to present my work. Throughout these experiences, I've had the chance to interact with numerous leading biochemical scientists

who are at the forefront of the society. Iran boasts a robust community of dedicated scientists and clinical biochemists who are actively engaged in this field, underscoring the organization's extensive and storied history. Given the strength of this vibrant scientific community, I am confident that the insights shared through Acta Biochimica Iranica will make a substantial contribution to the fields of biochemistry, clinical chemistry, and laboratory medicine not only within Iran, but also across various countries in the region and around the globe.

As we look toward the future, it becomes evident that the realm of biochemistry, clinical chemistry and laboratory medicine is currently undergoing a period of transformative innovations that are poised to reshape the landscape of our profession. Remarkable advancements in laboratory automation, genomics, nuclear magnetic resonance spectroscopy, mass spectrometry, microfluidics, and electronic tools are revolutionizing the predictive, diagnostic, and monitoring capacities of laboratories, consequently elevating the standard of patient care. An illustrative example lies in the substantial headway achieved in the automation of fundamental laboratory analyzers, which has demonstrably streamlined clinical



workflows, curtailed turnaround times and costs, and amplified overall efficiency. Beyond the confines of the clinical laboratory, the amalgamation of pioneering analytical techniques with microtechnology and point-of-care testing (POCT) has led to a narrowing of the interface between clinical and laboratory realms, fostering a patient-centric healthcare paradigm. Recent strides in technological prowess have substantially augmented the precision and accuracy of these novel devices, propelling the widespread adoption of POCT as a rapid conduit for delivering crucial test results, thereby expediting timely clinical decision-making. A noteworthy trend involves the integration of numerous POCT devices with electronic tools, including smartphones, thus enhancing the accessibility of test result interpretation.

Undoubtedly, one thing these innovations all have in common is their collective facilitation of streamlined and cost-effective patient sample analysis, leading to the generation of extensive datasets containing laboratory test results. To fully harness the potential of these advancements, the integration of novel tools such as artificial intelligence and data mining becomes imperative, serving as the catalysts to unlock the transformative power of big data. Presently, we are witnessing the practical applications of such data within the domain of omics, where these techniques

and technologies synergize to enable a comprehensive exploration of the genome, transcriptome, proteome, metabolome, microbiome, and more, culminating in a holistic depiction of biological systems. Within this landscape lies the imminent and pivotal challenge for the field: How can we transcend the current patient-centric model and usher in an era of precision/personalized medicine that elevates patient care and enhances global public health? This query encapsulates the next significant frontier, where innovative strategies must be devised to seamlessly integrate and leverage the vast wealth of data to tailor healthcare approaches on an individualized level, thereby effecting substantial advancements in patient well-being and public health outcomes on a global scale.

Now more than ever, biochemical scientists in Iran and the Middle East region need a reputable and reliable source of information to help guide laboratories on this journey. I firmly believe that the revival of *Acta Biochimica Iranica* will serve as precisely such a guiding beacon, as it has demonstrated in the past. I extend my heartfelt congratulations once more to the esteemed leadership of the Iranian Biochemical Society for embarking upon this significant endeavor. And my very best wishes to the society for a very successful journal for many years and decades to come!