

# Integration in Immunology: From DNA Repair to Immune Regulation

## Dear Colleagues,

Immunology is no longer confined to the study of defense—it is now recognized as an integrated system linking genome integrity, cellular stress, and disease. The first issue of the year reflects this evolving perspective and marks an important milestone for the *Turkish Journal of Immunology* (TJI).

We are particularly honored to welcome Prof. Aziz Sancar to our editorial board. His contribution to this issue through a dedicated editorial is both inspiring and symbolic, underscoring the importance of fundamental science in shaping our understanding of complex biological systems. His presence strengthens our commitment to scientific excellence and intellectual rigor. In his perspective on the NER–STING axis, Sancar revisits nucleotide excision repair as a fundamental mechanism of genome maintenance and extends its biological significance into innate immunity, highlighting how excised DNA fragments may contribute to immune signaling through the cGAS–STING pathway.

We are also delighted to have the support and active involvement of members of the European Federation of Immunological Societies (EFIS) on our editorial board. Their engagement represents an important step toward further internationalization of the journal and reinforces our aim to position TJI as a recognized and respected voice within the global immunology community.

An original study from Türkiye investigates soluble immune checkpoint proteins in systemic lupus erythematosus and Sjögren’s syndrome, focusing on key regulatory molecules such as TIM-3, LAG-3, and Galectin-9. The findings demonstrate significantly elevated levels of these soluble checkpoints in SLE patients and reveal correlations with disease activity, highlighting their potential as biomarkers of immune dysregulation. These results underscore that immune checkpoint pathways extend beyond oncology and play a critical role in the regulation of autoimmunity.

An other original study from Türkiye compares two magnetic cell separation systems for CD14<sup>+</sup> cell enrichment. The column-based method showed higher cell recovery and stronger CD14 mRNA enrichment, although both systems produced functionally comparable cells. These findings emphasize that method selection can significantly influence experimental outcomes in downstream analyses.

At the level of innate antiviral immunity, a collaborative study from China, Pakistan, and the United States provides mechanistic insight into the regulation of type I interferon responses. The study demonstrates that asparagine endopeptidase regulates the cGAS–STING pathway through modulation of apoptotic caspases, thereby maintaining basal interferon levels while preventing excessive immunopathology. Together with

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Sancar’s perspective, these findings reinforce the central theme —immune balance— highlighting that the immune system must be tightly regulated to be both effective and safe.

Complementing these findings, a review article from Iran examines the impact of respiratory viral coinfections, emphasizing how simultaneous or sequential infections can reshape host immune responses, influence disease severity, and reprogram immune dynamics. These observations highlight that immune responses are not directed against a single pathogen in isolation but are shaped by complex and context-dependent interactions.


Finally, an original study from Iraq explores the relationship between inflammatory responses and autoimmune mechanisms in gout, demonstrating that this traditionally metabolic disease is also closely linked to immune activation. The findings suggest that inflammatory and autoimmune pathways intersect more broadly than previously appreciated, supporting the need to reconsider classical disease classifications from an immunological perspective.

Taken together, the contributions in this issue converge on a unifying concept: the immune system is not static—it adapts, integrates signals from diverse biological processes, and responds dynamically to both internal and external challenges.

We sincerely thank all authors, reviewers, and editorial board members for their dedication and valuable contributions. Their efforts are essential in maintaining the scientific quality and integrity of the journal.

As we begin this new year, we remain committed to enhancing the visibility, impact, and international reach of TJI. We look forward to continuing this journey together.

**With warm regards,**

**Prof. Günnur Deniz** 

*On behalf of the Editorial Board*

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