

An interview with Dr. Adel Ghorani-Azam

Advances in Neuron Sciences Editorial Office

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Dr. Adel Ghorani-Azam

1. Could you please briefly introduce yourself and your research field? Also, attach a photo, either a portrait or one from your research environment (e.g., laboratory).

My name is Dr. Adel Ghorani-Azam, Assistant Professor of Toxicology. My research focuses on the biochemical properties of isolated natural and synthetic materials, with a special emphasis on peptide drug discovery. Over the past years, I have conducted extensive work on antimicrobial peptides, nanoanalytical toxicology, modeling pharmacology, and peptidomics. Additionally, my research explores different aspects of basic and clinical toxicology, including the neuropharmacology of adverse drug reactions and the neurological impacts of drugs of abuse.

2. What initially sparked your interest in your research field?

My initial interest in toxicology and pharmacology was sparked by a deep curiosity about how small molecules and peptides interact with biological systems. Early exposure to the dual nature of drugs and toxins — their potential for both therapeutic benefit and harmful consequences — motivated me to pursue research that bridges drug discovery, safety, and mechanistic toxicology.

3. Could you please briefly share your career story with us? And what impressed you most in your research life?

My career path has been shaped by a desire to integrate basic biochemical research with translational clinical toxicology. Beginning with the study of natural materials, I gradually expanded my scope to modern areas such as nanomedicine, peptidomics, and drug safety modeling.

What impressed me most during my research journey is the transformative power of peptides and nanomaterials in drug development and their unique ability to open therapeutic windows where conventional drugs often fail. This interplay between innovation and biological complexity continues to inspire my work.

4. In your opinion, what could be the hot topics in your research field in the coming years?

I believe the following areas will be central in the coming years:

- AI-driven peptide design and peptidomics for novel therapeutics.
- Neurotoxicology of nanomaterials and emerging drugs of abuse.
- Peptide-based drug delivery systems, especially across the blood–brain barrier.
- Systems toxicology and omics integration to predict adverse drug reactions.
- Neuroinflammation and neurodegeneration mechanisms linked to environmental and drug-induced toxins.

5. What valuable suggestions would you like to share with young scholars regarding how to be a professional researcher?

- Be interdisciplinary: toxicology and neuroscience thrive at the crossroads of chemistry, biology, and clinical medicine.
- Stay methodologically flexible: learn new analytical tools such as bioinformatics, omics, and modeling.

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- Think translationally: always consider how fundamental findings may impact human health.
- Value mentorship and collaboration: science progresses fastest when ideas are shared across disciplines and generations.
- Balance ambition with patience: impactful research takes persistence.

6. As a scholar, what recent research trends would you suggest are important for keeping up with *Advances in Neuron Sciences*?

Important trends in neuroscience to pursue in my opinion are as follow:

- Single-cell and spatial transcriptomics in neurotoxicology.
- Peptidomics and neuropeptides as biomarkers and therapeutics.
- Neuroimmune interactions in drug-induced toxicity and neurodegeneration.
- Computational neuroscience and pharmacology modeling.
- Neuro-nanotoxicology: safety and therapeutic uses of nanoparticles.

7. What attracts you to join the editorial board of *Advances in Neuron Sciences*?

I am motivated to join the editorial board of *Advances in Neuron Sciences* because of my commitment to advancing interdisciplinary research at the interface of toxicology, pharmacology, and neuroscience. I value platforms that foster open scientific exchange and help guide the next generation of discoveries in neurotoxicology and neuropharmacology.

8. What are your thoughts on the future of *Advances in Neuron Sciences*, an open-access journal?

The open-access model of *Advances in Neuron Sciences* ensures that scientific knowledge is accessible to a global community, which is essential for rapid progress in neuroscience. I believe the journal has great potential to become a leading hub for innovative research, particularly if it emphasizes emerging fields such as neurotoxicology, peptide therapeutics, neuroimmunology, and computational approaches. With proper support and active contribution from scholars, it can play a pioneering role in shaping the future of neuroscience research.