

Special Issue

Molecular Mechanisms of Pesticide Toxicity and Action

Message from the Guest Editor

Neonicotinoids are the most widely used insecticides; they target nicotinic acetylcholine receptors in insects. Neonicotinoids are water soluble and easily spread through groundwater to many water sources. The excessive use of neonicotinoids has led to their tremendous environmental accumulation in some countries; therefore, humans and wildlife are now at risk of diseases. Neonicotinoids affect many organs, including the nervous system, liver, immune system, and reproductive organs. It is suggested that neonicotinoids also exhibit endocrine-disrupting functions. Moreover, neonicotinoids can induce effects that are transmitted to subsequent generations, suggesting that some alterations induced by neonicotinoids are preserved in gametes.

The purpose of this Special Issue is to provide up-to-date information on the mechanisms of toxicity of neonicotinoids that highlight sex-specific effects in different model organisms; additionally, new studies on the genotoxic and epigenetic effects of neonicotinoids are welcomed.

Guest Editor

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Deadline for manuscript submissions

20 July 2026



International Journal of Molecular Sciences

an Open Access Journal
by MDPI

Impact Factor 4.9
CiteScore 9.0
Indexed in PubMed



mdpi.com/si/229095

*International Journal of
Molecular Sciences*
Editorial Office
MDPI, Grosspeteranlage 5
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