Special Issue

Clinical Applications and Diversity of Botulinum Toxins

Message from the Guest Editor

Botulinum neurotoxins (BoNTs) are produced by Gram-positive, anaerobic and spore-forming bacteria belonging to the genus *Clostridium* (*Clostridium botulinum, C. butyricum, C. baratii* and *C. argentinense spp*), with high immunological and genetic diversity. BoNTs are divided into nine toxinotypes (A, B, C, D, E, F, G, H or F/A, X) based on serological methods using specific antisera or, more recently, using genome sequencing for BoNT/X. To add further complexity, each toxinotype is subdivided into subtypes based on amino acid variations, leading to the identification of 41 subtypes so far. BoNTs are classified as the most harmful biological weapons due to their extreme potency. At the same time, BoNTs are widely used in therapy for an increasing number of applications. Enhancing our understanding of the activity of the BoNT variants, as well as the development of BoNT-based engineered proteins, opens the door to novel applications. Moreover, there is a pressing need to optimize the current detection methods challenged by BoNT diversity. This review will focus on BoNTs' variability and the opportunities or challenges posed for future clinical applications.

Guest Editor

Dr. Christine Rasetti-Escargueil

Institut Pasteur, Unité des Bactéries Anaérobies et Toxines, 25 Avenue du Docteur Roux, 75015 Paris, France

Deadline for manuscript submissions

closed (31 October 2023)

Toxins

mdpi.com/journal/
toxins

About the Journal

Message from the Editor-in-Chief

Toxinology is an incredibly diverse area of study, ranging from field surveys of environmental toxins to the study of toxin action at the molecular level. The editorial board and staff of *Toxins* are dedicated to providing a timely, peer-reviewed outlet for exciting, innovative primary research articles and concise, informative reviews from investigators in the myriad of disciplines contributing to our knowledge on toxins. We are committed to meeting the needs of the toxin research community by offering useful and timely reviews of all manuscripts submitted. Please consider *Toxins* when submitting your work for publication.

Editor-in-Chief

Prof. Dr. Jay Fox
Department of Microbiology, University of Virginia, Charlottesville, VA, USA

Author Benefits

High Visibility:
indexed within Scopus, SCIE (Web of Science), PubMed, MEDLINE, PMC, Embase, CAPlus / SciFinder, AGRIS, and other databases.

Journal Rank:
JCR - Q1 (Toxicology) / CiteScore - Q1 (Toxicology)

Rapid Publication:
manuscripts are peer-reviewed and a first decision is provided to authors approximately 18.4 days after submission; acceptance to publication is undertaken in 2.8 days (median values for papers published in this journal in the first half of 2025).

MDPI