Special Issue

Toxin-Antitoxin Systems I

Message from the Guest Editor

Toxin–antitoxin (TA) systems are genetic loci composed of toxin and cognate antitoxin genes. TA systems are ubiquitously found in bacterial genomes, many of which often carry multiple TA pairs. The largest class of TA toxins are endoribonucleases, which cleave mRNA and/or tRNA in a sequence-specific manner. The degradation of RNA leads to rapid but reversible growth arrest. Other toxins also halt cell growth by inhibiting essential cellular processes such as DNA replication and cell division. In normally growing cells, antitoxins block cognate toxins' activity or expression. Under stress conditions, antitoxins are preferentially degraded, allowing toxins to exert their toxicity. Despite the prevalence and clear biochemical mechanism of action, the physiological roles of TA systems are still under debate. In this Special Issue of *Microbiology*, devoted to the "Toxin-Antitoxin systems", we invite current innovative research of any aspects related to TA systems.

Guest Editor

Dr. Hisako Masuda

School of Sciences, Indiana University Kokomo, Kokomo, IN 46902, USA

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Microorganisms
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
microorganisms@mdpi.com

mdpi.com/journal/microorganisms

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Editor-in-Chief

Dr. Nico Jehmlich
Department of Molecular Toxicology, UFZ-Helmholtz Centre for Environmental Research, 04318 Leipzig, Germany

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